

# A TRIBUTE TO OUR VERY OWN सौरर्जा

...With Kindest Regards



## Dr. Neelkanth G. Dhere

(1938- 2021)

Editor: Ramesh Dhere | Published by: Dr. Snehalata Taore

Image Source: shutterstock / Nguyen Quang Ngoc Tonkin

A TRIBUTE TO OUR VERY OWN सौराजा

...With Kindest Regards

Dr. Neelkanth G. Dhere

(1938- 2021)

Editor: Ramesh Dhere | Published by: Dr. Snehalata Taore

---

© Dr. Snehalata Taore

**Photo Source :**

Ramesh Dhere and individual writer.

Copyright of All LOGOS and Trademarks  
rests with respective copyright holders /companies.

**Cover Image Source :**

shutterstock/ Nguyen Quang Ngoc Tonkin

**First Edition :**

20 November 2021

**Published by :**

Dr. Mrs Snehalata Taore,

202, Manorath Apt

S. no. 94, plot no. 26

Right Bhusari Colony

Kothrud Pune 411038

Cell : 9552378866

email: mycontactpune@gmailcom

FOR PRIVATE CIRCULATION ONLY

---

## PREFACE

The idea for this memoir germinated right after passing away of our dear Neelkanth, we started receiving condolence messages from many of friends, colleagues and students. These messages were heartfelt and very touching. It was evident that Neelkanth had a deep impact on his students, family, friends, and colleagues. For many of his students, he was more than just the thesis advisor but a mentor, surrogate parent in a foreign land and person who changed their lives profoundly. For immediate and extended family, he singlehandedly changed the course from ordinary path to a bright and promising future. For anyone that he crossed paths with during his journey through life, he touched them with his kindness, generosity or inspired them to become better versions of themselves.

The memoir idea was reenforced during the memorial service, the spontaneous outpouring of emotions by many of the participants was amazing. Number of students and friends expressed their gratitude to Neelkanth who helped in different ways to change their lives completely. It started me thinking more about how he accomplished it. He was not a pretentious person, so he never made any big deal about it, most likely he did not even realize it as he did not do anything deliberately. It was just natural for him to help everybody around to improve their lives.

There are several examples from the people who benefited different ways. Some of them have shared their experiences in this memoir. Neelkanth suffered several adverse situations in his life however he kept going like “Eveready Bunny”. Once he set his intention on anything, he strongly believed that the universe would make it happen. It’s because of this belief, he was grounded by unnerving poise, grace and confidence. This belief coupled with his hard work and

perseverance, he modeled how one can overcome any obstacles in life.

The purpose of this memoir is to preserve the memories of him for future generations of not only our extended Dhere family, but also for other families who came in touch with him. I would say Neelkanth’s mission in life was to make a world a better place by making lives of people around him better. He did it without expecting anything in return, it was as if the act of doing it was reward in itself for him.

His dedication to his work and teaching is well known to many of the contributors here and during his tenure at IME and FSEC/UCF he trained hundreds of students. During the process, he instilled his strong work ethic and hard work in them, which is evident from their professional success. He has also passed on some of his helping nature to them, I would say he created “mini-me” s in his students who would continue his mission of doing the world a better place. He was the ultimate example of living his life with the belief that “The world is my family” or “Vasudeva Kutumbam”.

There is a saying in marathi

“ मरावे परी किर्तिरूपे उरावे”

which roughly translates that after you are gone you want leave a legacy of great reputation and what a tremendous legacy he leaves behind! We salute him for everything he and Sucharita have done for all of us and wish their souls to live in eternal peace.

Om Shanti, Shanti, Shanti!!!





# CONTENTS

- ◆ PREFACE/ Ramesh Dhere/Three
- 1. Touch of Gold/ Tanishka Taore/ 1
- 2. Journey of Pathbreaking Visionary/Ramesh Dhere/2
- 3. Dada, Our Pillar of Strength/Dr.Snehalata Taore/10
- 4. Inspiring Memories of Dada:My Guiding Light/Rajani Bennur/13
- 5. Dada - The Big Brother for Our family and Beyond/Ashok Dhere/15
- 6. रजनीगंधा जीवनी या बहरुनी आली/प्रमिला वैद्य/20
- 7. Memories of Rajani and Dada/Col.Sham Khare/22
- 8. Shri.Dada (Dr. Neelkath Dhere ) A Unique Person/Appa Jiginni/24
- 9. My dear Dada-Mama and Sucharita Mami/Harsha Bennur/25
- 10. To my Dearest Sucharita Aunty and Neelkanth Uncle/Tanvi Dhere/27
- 11. Dada uncle – Catalyst of Advancement/ Vishal Dhere /28
- 12. Memories of my Kaka and Atya/Milind Khare/29
- 13. श्रद्धांजली/मकरंद खरे/32
- 14. Dr.Neelkath Dhere: A Tribute to a Respected Scientist, Technica Leader and a friend-A focus on the 1980s and Life and Solar PV in Brazil Kaz (Lawrence L. Kazmerski)/ 34
- 15. In Memoriam : My friend who always strived to make life better for those who knew him/Dr.Subhash Khadpe/38
- 16. Memories of Neelkanth Dhere/Bijoy Patnaik/40
- 17. A Person Who Guided and Molded My Life/Nalin and Anju Parikh /42
- 18. Obrigado professor Dhere/Helio Moutinho/45
- 19. Tribute to Prof. Dhere/Prof. Leila Rosa de Oliveira Cruz/47
- 20. A Linha invisível que nos conecta/Ivani Bott /48
- 21. One Day in India-January 2010/Susan Schleith/49
- 22. Dr. Neelkanth G Dhere : Hardworking Scientist/Dr.Harin Ullal/51
- 23. Warmth, Devotion and Work: A Journey through many Lands/ Dr. Angelo Mascarenhas/53
- 24. Dr.Neelkanth Dhere was well respected by the highest authority in space sciences, Dr.Vikram Sarabhai/ Hanumant Sawant/55
- 25. पाठीराखा/रमेश करमकर/57
- 26. Dr. Dhere treated us like a family/Sudheir Saad/60
- 27. आमचे परमपूज्य दादा नीलकंठ ढेरे यांना श्रद्धांजली/डॉ. सौ नलिनी विनायक भालेराव/ 61
- 28. Tribute to Dr.Dhere –Our Dada/ Dr.Mrs.Nalini Vinayak Bhalerav/ 63
- 29. A Tribute to Our Friend Neelkanth Dhere/Amarjit and Harmhinder Luthra/64
- 30. मला भावलेले डॉ. निळकंठ ढेरे (काका)/श्री डी. एस. साळवी / 66

31. Memories of My Guru - Dr. Neelkanth G Dhere/  
Vinaykumar Hadagali/67
32. Down the memory lane with Dr. Neelkanth Dhere - A legend/Shantinath  
Ghongadi/69
33. Memories of Dr.Dhere and Aunty/Ankur Kadam and family/71
34. Remembering the unforgettable Dr Dhere/Jyoti Shirolikar/72
35. My Idol Dr. Dhere - My Polaris/Dhaval Shah/73
36. My Idol Dr. Dhere/Anant Jahagirdar/74
37. पालकांना परदेशात आश्रस्त करणारे डॉ. नीळकंठ ढेरे/बी. एम. पंडित/75
38. भाव सुमन/मंदार पंडित/76
39. In Memory of Dr. Dhere and his Brazil connection/  
Abhijit Deshpande/77
40. In Memory of Dr. and Mrs. Dhere/ Kaustubh Gadre/79
41. Running 5K's with Dr. Dhere and Learning Many Life Lessons Along the  
Way/Deb Hall/80
42. Solar and thin film industry will miss him/Vivek Gade/81
43. Dr.Neelkanth G.Dhere Memoir/Sachin S. Kulkarni/82
44. Memories of Dr. Dhere/Shanker Kuttath/84
45. Dr.Dhere - Not just a PV Researcher, but an all-around supporter of his  
Student Team/James Santiago/85
46. SBV web announcement/87
47. Messages from FSEC Colleagues/88
48. Farewell Blessings by our Dada/Tai/91
49. निरोपही आशीर्वाद देऊनच/ताई/92
50. फ्लोरिडातील मराठी संशोधक डॉ. नीळकंठ ढेरे/सौ. स्नेहसुधा कुलकर्णी/93
51. Photo Section

---

# Touch of Gold

---

In the darkness of the night  
He was the light of dawn  
This blaze of knowledge  
Will be a the beacon that guides us all

A steady hand to lead the way  
Humble and kind who never sways  
A calm presence through the fray  
Warm and affectionate day by day  
A saint of the highest acclaim

Who prevailed through the tallest flames  
Rising with a golden light  
And inspiring us with his extraordinary might

He made a flash  
With a touch of gold  
Making our worlds brighter  
And breaking the mould]

- **Tanishka Taore**



---

# Journey of a Pathbreaking Visionary

---

Dr. Neelkanth Dhere, Neelkanth Dada or Dada for close family, was a unique personality. He always made an impact on everyone he met and people would always remember him. He was a born leader, passionate for his work, dedicated, extremely hardworking, generous to a fault, caring and always ready to help. In addition he was dynamic, a visionary and a fighter who would defend any cause in which he believed. He always strove for excellence in everything he did and it was evident in all his endeavors. I am not using these adjectives lightly and the narrative below will highlight various instances to bring out his special qualities. There was a considerable age difference between us, over 13 years. As a consequence, we never lived together in India in my early years. I was fortunate that we could spend considerable time together in the latter half of his life and that I could learn from him firsthand. It may be because of such closeness and his extreme modesty that I did not appreciate enough his numerous attributes. It is only now on reflection while I am writing my memories that I am realizing many attributes of his personality.

He was born on November 20, 1938 in Jugul, Karnataka, our mother's birthplace. He had his primary and secondary education in Barshi. He was an excellent student and was successful in the statewide scholarship examinations in 4<sup>th</sup> and 7<sup>th</sup> grades. He passed his high school examination (S.S.C.) with good grades.

I must have been around 3 years old when Dada left for Pune for higher

education. I only saw him when he visited Barshi for holidays and festivals. Later, we used to visit Pune when he was doing his Ph.D. at the National Chemical Laboratory. It was a time when our family was going through financial hardship. My earliest childhood memory is when we were evicted from our rental home and all our household belongings were piled up on the road outside the house. It was a traumatic experience and may be the reason it is etched in my memory. The following years in Barshi continued to be in hardship. The situation was made bearable mainly because of our mother who was a pillar of strength and always kept her pride. She was a hardworking person and religious with total faith in God. From my earliest memories I remember her working to better our home. She prayed regularly but did not expect anything in return. She had equal faith in Dada and supported him in all his decisions without question.

Dada's personality traits were evident from early years. He was a born leader and led the kids in the neighborhood. He used to organize Ganesh festival which is celebrated over 10 days. It involved collecting the donations, building the pandal with other kids, decorating it daily and doing the pooja. These organization skills came in handy later on when he organized various events in his college years and conferences or workshops during his professional career.

Our father, Anna, was a short-tempered person and did not like any of us going against his wishes. For Dada, the first litmus test of his personal character

came early at the age of 16, when he completed his high school. During that time, it was common for youth, particularly in small towns, to look for a job as a clerk. My father wanted him to follow the conventional path and to start working. Dada was an excellent student and always got good grades. With his ambitiousness, tenacity and pursuit of excellence, he decided to defy Anna to move to Pune to pursue higher education. It is this decision which proved visionary for his future success and the progress of the entire family. As our father was against Dada's decision, he refused to give any financial support for Dada's college education and Dada had to leave for Pune with whatever little money our mother could give him.

He came to Pune and took admission in MES College (Abasaheb Garware college now) for Pre-degree science coursework. To support himself, he took a part time job in a stationary store. Although he had to juggle between college studies and work, he did not lose focus of his main pursuit. He used to tell us about his early experience in the college where some students coming from English medium convent schools used to go around trying to impress people with their "fya-fya" English (in Neelkanth's words). The picture changed completely after the midterm exam when Neelkanth, who had come from small town, did much better than any of these convent school folks. Fast forward, when Dada started working for PRL, he visited one of the industrial companies producing the laboratory equipment where he was greeted personally by the owner and top managers. One of these convent school guys was working there as PA (personal assistant) to the manager who tried to be friendly with Dada! Dada told me about this episode without being derogatory to the person but he did find it amusing! Another interesting story he used to tell was about a math coaching class teacher. As Dada did not have financial resources, he could not even think of joining the coaching class. However, the teacher invited him to join the class without charging any fees and used to wait for Dada to arrive before starting the class. She used to say Dhere is the only challenging student in the class who would motivate the

teacher.

In addition to his academic studies, he was also active in extra-curricular activities and was elected as secretary to run the Arts circle in one of the years. The secretary was responsible for arranging the cultural programs. The budget for the Arts circle used to be small, limiting the choice of artists who could be invited. As always, Neelkanth wanted to get the best and approached famous singer Pandit Jitendra Abhisheki to perform at the arts circle function. He used to charge substantial fee for his performances but with his persuasive skills, Neelkanth managed to convince him to agree to perform. Pandit Abhisheki told him that he cannot perform for a lesser amount but the compromise was that Mr. Abhisheki would donate most of the fees back to the arts circle. Needless to say, the function was one of the most successful events at the college. These persuasive skills were useful on many occasions in his career. This instance showed his skills to tackle and overcome obstacles to achieve the goals and his pursuit of excellence. Most people would give up when faced with such problems but Dada took them as challenges. His fighting spirit would never accept inaction and he used the network he skillfully built over time to achieve his goals. In all instances, as he would not be asking anything for personal gain, the people would willingly extend a helping hand. During his final year of B.Sc., he decided to repeat the final year. In India it used to be called taking a drop. Interestingly it was the same time I was entering the first grade. As I was writing with my left hand, all attempts were made to make me write with my right hand. My sisters told me that I used to write backwards with my right hand. It was the same time my brother Ashok had an accident while playing when he was run over by a truck and his leg was fractured. He ended up in the hospital for few months. Because of these circumstances both my schooling was neglected and I had to repeat first year. My sister Raju remembers that I used to go around telling people that I have taken d'lop (as I could not say drop!).

It was the same time my eldest sister, Snehalata (Tai), was finishing her high

school and in the 1950s, it was not common in a small town like Barshi for girls to go to college and our father wanted her to stop schooling after high school and to get her married. It was Dada who decided to defy our father Anna again and take Tai to Pune for higher education. Dada was against the discrimination of girls or women and wanted our sisters to progress to their full potential and our mother was totally supportive of Dada. As Tai had received good grades at S.S.C. exam, Dada was confident that she would do well in college. Without any financial support from Anna, Dada had to struggle and find part time jobs to support himself and Tai for the college education.

Facing all these adversities Dada still did not lose sight of his goal to improve the family situation through higher education. It was his foresight and clarity of vision that resulted in all five siblings completing doctoral degrees, which was recognized by Guinness book of world records as the family with all siblings achieving doctorate or medical doctor degrees.

Dada finished B.Sc. with excellent grades. General custom at the time was to start working after bachelor's degree and Anna was pressuring him to do it. However, Dada did not want to follow the conventional path but chart his own future. He decided to join the Physics department at Poona University for M.Sc. He was in good books with then department head Dr. Chiplunkar because of his good grades and Prof. Chiplunkar wanted Dada to join his group for Ph.D. It took generally 6 to 8 years to complete Ph.D. in that group. He approached Dr. Goswami at National Chemical Laboratory (NCL) to get admitted for Ph.D. He did very well in the interview and Dr. Goswami decided to take him as Ph.D. candidate. During the interview, Dada explained about his family situation and told him that he was willing to work day and night but wanted to finish in 4 years. Dr. Goswami agreed with it. To get the chance to do a Ph.D. at NCL was one of the biggest break for Dada, the training he received was the foundation for his outstanding career. It was also the first time he had regular income of Rs 250/per month which went long way to give financial stability and support Dada, Tai and

Raju for higher education.

The financial situation for the family remained precarious in Barshi but there was a newfound respect for the family because of Dada's educational achievements. Most probably, he may have been the first person in the town to join Ph.D. course. From this point onwards, he never looked back and kept ascending in his career and ensuring the wellbeing of his entire family. I remember whenever he visited Barshi from Pune all through his college years, he always brought unique and special gifts for all of us. I remember going around in the town boasting about it!

Dada had a long and illustrious research career spanning over six decades. It started in 1961 when he joined Dr. Goswami's group National Chemical Laboratory in Pune to work on thin film technology, which he continued for rest of his life. After completing his Ph.D., he worked with the renowned scientist Dr. Vikram Sarabhai at the Physical Research Laboratory in Ahmedabad from 1966 and built a thin film laboratory from scratch. In addition to thin film research, he was also deeply involved in vacuum technology, building vacuum simulation chambers for India's space technology program. In 1970, he was invited by the Brazilian space agency to work in their research program.

Before going to Brazil, he was incredibly fortunate to meet Dr. Rajani Khare who became Sucharita after their wedding. She was his life partner and was deeply involved in all of Dada's activities. Although Sucharita vahini was a medical doctor, she sacrificed her medical career to support Dada in all his pursuits. It is said that behind every successful man, there is a woman. In the case of Dada, I would say that Sucharita vahini was with him in every step on the way to support all his endeavors and had a lion's share in Dada's achievements. She was a very organized person and took care of all household chores and financial management, leaving Dada completely free to take care of his professional activities. While Dada was short tempered and did not tolerate nonsense in any of his dealings, Sucharita vahini was the only one who could calm him down and prevent him from making rash decisions.



After working for the Brazilian space agency for one year, he was invited by the Military Engineering Institute called IME to join their Materials' Science program in 1971. At IME, he built a second thin film laboratory. He was a natural leader and dedicated to his work which enabled him to excel in every pursuit. He started thin film solar research in 1980 and was able to get \$1.5 million in funding, equivalent to 6 to 10 million dollars today. I was fortunate to join him in 1980 to work on CdS/Cu<sub>2</sub>S thin film solar cells which were the first-generation thin film solar cells. This program was very successful, and his group could produce working modules using these cells and demonstrated a working solar system.

In 1986, he joined the Solar Energy Research Institute, where he worked on InP solar cells as well as high temperature superconductivity. After working at SERI, now NREL, for four years, he decided to join Florida Solar Energy Center where he spearheaded their thin film solar research effort. At FSEC, he built a third thin film laboratory which was even bigger than the one he built at IME in Brazil. With tireless efforts and strong leadership, he was able to generate enormous funding to build the foundation for a thin film research program which has benefitted countless colleagues and students. Many of people who have worked with him at various places know his strong work ethic and his passion towards work and, more importantly, to his students. He was extremely proud of his students, both Sucharita vahini and Dada treated them as part of the family.

Incidentally Dada always referred to his students as colleagues once they graduated and treated them as equals. Interestingly the basis for this goes back to his own Ph.D. days. When Dada finished his Ph.D., his advisor, Dr. Goswami, told him graciously that now you have achieved the highest degree so we are equal from now on and we are colleagues. Dada always held Dr. Goswami in very high esteem and was grateful to him for showing faith in a "small town boy". Dada always kept in touch with him until Dr. Goswami passed away.

Here I would like to mention how Dada expressed his gratitude to his teachers. As I have mentioned, the mathematics tutor during his college years let him attend

the classes without demanding the fees. He had always kept it at the back of his mind. When he was in USA, he tracked her down when she was visiting her daughter in USA. He sent her a cheque of \$ 500 which did surprise the teacher and when she asked Dada about it, he told her that it was for Rs 500 he owed her for the tutoring fees.

In case of Dr. Goswami, whom he idolized and was grateful to, he sponsored his trip to USA in 1997. Even though Dr. Goswami had retired for a long time, he took him to the IEEE Photovoltaic (PV) specialists conference, paid for his registration and introduced him to many prominent PV scientists. Neelkanth and Sucharita took him around to many different tourist places and sent him to Denver where I had the honor to host him for a few days. During his trip to Denver he visited NREL and had a tour of the entire facility. Dr. Goswami was received with great honor as most of the scientists knew Neelkanth personally and had great respect for him. Neelkanth also sent Dr. Goswami to California where he was hosted by Dr. Vijay Deokar who was Dr Goswami's student at NCL. Needless to say, Neelkanth footed the expense for Dr. Goswami's entire US trip with great pleasure.

I also want to mention about the respect and love Dada had for our mother, there is nothing he wouldn't do for her. When Dada and Vahini went to Brazil in 1970, he would send \$300 (~Rs 2200 at that time) a month for expenses to Pune. To put it in perspective, starting salary of a university lecturer was Rs 600 a month at that time! Both of them wanted her to live as comfortable as possible, an effort to compensate for all the hardship she suffered in past! For all the people who knew her, they knew that her needs were few and all her life was dedicated to her children. The only desire Aai had was to do the pilgrimage to the religious places (Benares, Rameshwar and other temples). Dada and Sucharita vahini could have arranged for her to go on one of the arranged tours or ask somebody to take her for the pilgrimage. However, both of them knew and respected her strict religious practice and did not want her to suffer during the trip. They carved out time

amongst Dada's busy schedule and planned a trip to visit all important pilgrimage sites in India and Nepal. They spared no effort or expenses to ensure that Aai would be comfortable throughout the journey and that she did not have to compromise on any of her routine. Both Dada and vahini traveled with her to all places by air and had arranged for accommodation in best of the hotels. At each pilgrimage place, they ensured that all the religious rituals were carried out to Aai's satisfaction without undue rush. Aai talked about this trip for many years and it was a high point of her life.

### **Friendships and networking**

Dada had a large circle of friends from the beginning and he cherished and valued his friendships. He kept in touch with his childhood friends from Barshi and friends he made later in college and in his professional life. In fact, whenever he visited India, there would always be two parties. One of these used to be all his friends and he used to communicate with many friends from Barshi and other places ahead of time for the gathering in Pune. Most of the contributors for this memoir have experienced parties hosted by Dada and Vahini which were always elaborate and very joyous events. Highlight of such parties used to be the stories from the past Neelkanth used to narrate which were very interesting. He was very good story teller and I attribute his excellent teaching to this natural story telling skills.

Later in his professional life, he continued to form many acquaintances in India and around the world. I remember that even during his personal visits, he would make a point to arrange the visit to the prominent research groups in the area. His India visits were always filled with visits to the groups at Poona University, Kolhapur University, TIFR in Mumbai, Dr. KL Chopra and his group at IIT, NPL and NICE in Delhi, Bombay and Madras IITs in recent years and IICS in Calcutta amongst other institutions. With his nature of forming long term relationships, he knew closely various vice chancellors of Poona University starting

with Dr. R.G. Takwale who was his teacher during his M.Sc. course, Dr. V.G. Bhide who he knew from the time Dr. Bhide was at NPL and Dr. Gowarikar. In addition, he was close friend with Dr. Arun Nigawekar who was his classmate and became chief of UGC. Outside India he had close relationships with groups in Japan, which he visited several times and spent sabbatical of 3 to 4 months in 1998. He also had close relationships with research groups in Germany (Dr. Bloss's group at University of Stuttgart and Dr Ernst Bauer's group at Claustal), Thomson CSF in France, Dr. Robert Hills group at New Castle upon Tyne in England, the groups in Spain and Yugoslavia. Neelkanth and Sucharita maintained their relationships in a unique way, they used to exchange greetings with their friends at end of the year. These letters were much more than a mere greeting cards and they used to write long letters narrating the events in their life during the entire year. They must be writing to more than 100 people and the process used to go for over a month. For friends and family in USA, they would send specially picked Florida oranges from the renowned grove. Many of the people still remember the ritual which started in early 90's and continued until 2015.

### **Generosity**

Neelkanth and Sucharita's lifestyle was very modest however they were extremely generous while hosting parties. Many of the contributors to this memoir have experienced these dinner parties which were lively with lots of good food (Sucharita was an excellent cook of Indian and Brazilian dishes), special Brazilian drinks like cachaca and entertaining stories from Neelkanth. They also donated money for worthy causes. Both believed in education and donated funds for a college in Guhagar and for a girl's school in Devkheraki in India. Another topic of keen interest was solar energy and they believed in spreading awareness in India. Neelkanth organized three solar PV training workshops in three places for which he convinced Susan Schleith and Penny Hall from FSEC to come to India and teach. Neelkanth bore all expenses for conducting these workshops.

Every trip they took to India used to be like X-mas (or Diwali) for all of us.

They used to remember everybody's liking and bring the appropriate and special gifts. I must mention the time when Dada and Vahini left India in 1970 for Brazil. At that time Dada had brought his motorcycle to Pune from Ahemdabad and we thought that they will sell it before going to Brazil. To my great surprise, he left it for me and Ashok, I was 18 years old and Ashok 21. Both of us graduated from simple bicycle to Jawa motorbike, it was rare thing at that time for such youngsters to have a motorbike. Neelkanth went through many hardships during his college years but he was never bitter about it. Somebody asked him how he can let us kids have a motorbike and his simple answer was their brother can afford it!

### **Helping nature and making things possible**

Neelkanth had a unique ability to get things done, despite obstacles which would be difficult for mere mortals, he would pursue challenges to fight and conquer. I'll mention a couple of instances here. When he was at PRL, Dr. Sawant was working as a technician. Dada could see the potential in him and encouraged him to go for M.Sc. and later Ph.D. Gujrat University bureaucrats were creating problems to admit Dr. Sawant for M.Sc. Rather than fighting the bureaucracy, Neelkanth stepped in and approached the Director of PRL Dr. Sarabhai and resolved the problem overnight. Similarly, there was a visa problem when one of the presidents of the American Vacuum Society was traveling to Brazil as an invited guest at Brazilian vacuum society conference. He was a Canadian citizen and found out at the airport that there was a recent change requiring visas for Canadians. Neelkanth convinced the airline personnel to allow him to travel, promising that there would be a special visa waiver from the ministry for the AVS President before he landed in Rio. During 8 hours of the travel time, Neelkanth worked phones with various levels at the Brazilian foreign ministry and got the visa waiver granted in time and the AVS President could attend the conference.

His helping nature is legendary. He used to help people without any expectation, getting them to excel was a reward in itself. Dr. Nandini Bhalerao and Dr. Sawant have written about their experiences in this memoir which changed

the course of their lives and formed the foundations of success in their careers. Nitin Motagi and Abhijit Sawant wanted to do M.S. in computer science in USA. Even though it was outside his direct field of research, Neelkanth found way to get them to UCF with financial assistance which made it possible to get student visas. He happily accepted to serve as external examiner for many Ph.D. students from India and did thorough review of their Ph.D. dissertations. I also remember the case of Dr. Kinjal Patel who received the Bhaskar fellowship and needed an institution and scientist to host her for 6 months in the USA. She approached Neelkanth who readily agreed to take her at FSEC and provided facilities for her training and research. It is noteworthy that this was in 2015 when Neelkanth had inadequate funding to run the facility and he was using his personal funds to keep the place running.

Dr. Bijoy Patnaik is his close friend from Brazil who is extremely modest and very considerate of others. Neelkanth used to jokingly say that during Bijoy's green card interview that instead of immigration officers trying to argue for denying the green card, it would be Bijoy who would be trying to convince the officer why he should not give Bijoy one! Neelkanth was always looking for ways to help friends and many times anticipated and nudged his friends to do the right things. Bijoy has narrated the incidence of Neelkanth almost forcing him to buy an apartment in Rio. As usual, Bijoy came up with many reasons why he couldn't do it, Neelkanth negated all these arguments and made Bijoy buy the apartment!

### **Pursuit of Excellence**

Neelkanth was always trying to do the best he could, he was never satisfied with doing anything ordinary, like most people. I have already mentioned about him roping in the famous singer Jitendra Abhisheki for a college function, establishing a world class research laboratory at PRL in India and becoming an active member of India's space research program in early years while conducting simulations in vacuum chambers he built in Thumba, India.

During his tenure at the Military Engineering Institute (IME), he built a world

class thin film research laboratory. Interestingly the graduate program at IME was supported by FINEP, national financial agency for higher education and research. This grant was enough for running his research program but anything routine was never enough for him. In the late 1970s, research in solar cells for terrestrial applications was just beginning. Neelkanth approached FINEP for a project on thin film solar cells and was awarded a grant of over million dollars which would be equivalent of 6 to 10 million dollars in today's dollars. This allowed him to more than double the size of his group. With his extensive networking, any of the reputed scientists in solar and vacuum fields visiting Brazil made a point to visit IME. In addition to the FINEP grant, he was able to get funding from the Organization of American states to establish collaborative programs. Dr. Larry Kazmerski from SERI (now NREL) visited IME for 6 weeks in 1983. Kazmerski has written about the long-term relationship it started in this memoir- Neelkanth's group at IME was the envy of other groups and was known for its dynamicity. Neelkanth put IME as the prominent research group on national and international maps.

Neelkanth was active in vacuum technology from his time in India and continued this association in Brazil. He was active in the International Vacuum Union and had formed extensive networks in vacuum societies in different countries. He founded the Brazilian vacuum society (SBV) in 1978 and, with his close contacts, was able to form a close association with the American Vacuum Society. As a result, AVS used to send their presidents (past or present) to participate at the SBV annual conference. In 7 to 8 years, Neelkanth was able to get IUVISTA members to vote for SBV to conduct their meeting in Rio for 1992 which was truly a monumental achievement.

He started work at Florida Solar Energy Center (FSEC) in 1990 where he stayed until his retirement. He literally started from scratch to build his lab as there were no labs at FSEC working on fabrication of thin films. In fact, FSEC did not have a space to allocate for a thin film lab and Neelkanth started his lab

operation in the trailers. With his relentless efforts and hard work, Neelkanth started building the laboratory facilities and deposition equipment. I have never seen Neelkanth take weekends off or go home from work at 5 pm. He was very frugal in using funds and, because most of the equipment was home built, he could build functioning laboratory with meagre startup funding. He also used his networking skills to get donated equipment. One noteworthy example is the case of selenization equipment. During various PV conferences, Neelkanth had made acquaintance with the research folks at Siemens Solar. When they were decommissioning one of their selenization systems to be replaced with a larger system, Neelkanth approached the team at Siemens Solar and convinced them to donate it to his group at FSEC. He was good at bargaining when buying anything for the lab. As Shantinath recalled during memorial service, when Neelkanth deputed him to buy the items for the lab, Neelkanth told him "Anybody can buy the things at the list price but your job is to bargain and get a discount". It was a new experience for Shantinath and also for many of the venders. However, he figured a way to approach right people to get the discounts and became a pro at it within few months. The training in Neelkanth's lab was all-round involving equipment fabrication, maintenance and troubleshooting as well as writing research and grant proposals. Such skills were invaluable during their careers at many prestigious companies. In fact, his former students, who became "his colleagues" in Neelkanth's words, created such a brand name for Neelkanth's group that Intel had standing offers for his graduating students. All his students found jobs in many prestigious companies such as Applied Materials, Intel and Lam Research to name the few.

There was one thing I observed from the beginning, he would respond to all solicitation calls. I used to joke that he had proposals stacked up in his drawer ready for submission. He would work day and night to generate these proposals. With his tireless efforts, extensive networking, and solid reputation he soon started generate funding from various sources for research projects. Simultaneously he

started recruiting students, which was a difficult task given the long distance between UCF and FSEC (the students were reluctant to drive 70 miles a day). As one of the FSEC faculty members mentioned during the memorial service, no other faculty member except Neelkanth could persuade UCF students to join their research groups. Neelkanth was able to recruit dozens of students—in one of group photographs. I could count twelve students who were at different stages of their research projects! It is hard to imagine how Neelkanth managed to create so many independent research topics, generate the funding to support them and mentor them through their entire graduate program. It is to his credit that he could do it at FSEC.

In addition to his thin film solar cell research effort, he was heavily involved in PV reliability program and became part of IEC group working on it. He used to attend these meetings around the world, at times using his own money. He was so intimately involved in this activity that he developed a special tutorial course on reliability in collaboration with Dr. John H. Wohlgemuth from NREL and

offered at IEEE PVSC. With his efforts, he founded the group to work on thin film solar modules at IEC and ran it for various years until his retirement.

His involvement in vacuum technology and AVS was recognized by AVS and he was made an AVS fellow. He was similarly involved in the IEEE society activity and recognized with elevation to fellow of IEEE.

These various examples show his determination to do the best for any activity he undertook.

I should mention that his quest for excellence was not limited to just professional career. He pursued the highest point in academic career and elevated his entire family to same level. He was truly the family patriarch who brought the family to an entirely different level. He is truly an example of what a person can achieve with complete dedication and a commitment to help everyone around. As it is said that proof is in the pudding, and the success of the immediate and extended Dhere family, which included all his students and friends, is the truest mark of his outstanding achievements.

**- Ramesh Dhere**



---

# Dada, Our Pillar of Strength

---

On this day, I am sure when all of us - siblings - think about how our Dear Dada transformed our lives from nowhere to this state, the gush of thoughts & words rush in such a way that it is difficult to pen it down!!!!

Our Dada was intelligent & well behaved. He used to impress people from his childhood only. Our Jeweler landlord, the primary school headmaster, used to peep in just to tell our mother that this boy is going to be a big-name one day!

Maybe the early childhood of three elders was a little better. But then conditions started worsening. Meeting two ends was difficult.

Our father, Anna, wanted Dada to accept a job as a clerk in the municipality after SSC. He had managed for Dada's posting on leave immediately after exams. Anna was short-sighted & thought of the benefits of adding Dada's pay for his income.

But our mother, Mother The Great & Dada had big dreams. She wanted Dada to study further & Dada wanted to go to Pune for higher studies. Despite extreme opposition, Dada left for Pune for college education, maybe just with few rupees. Aai managed to give him a few rupees above the railway fair!!!

Dada had to stay in a space where he physically could not accommodate himself, on sleeping his feet used to be out of the threshold in the common passage! Dada was not allowed to come home to Barshi as he didn't listen to Anna

Back in Barshi, our family conditions were pitiable. In those days we had to

go to Sholapur for SSC Exams as there was no SSS exam center. But on the day I was supposed to go to Solapur, we were on the road with all our belongings!! I can say not like a devdoot (god's messenger) but like actual God himself, Dada stood in front of us. Somehow managed to shift the family to the neighbor's courtyard and we collected my clothes & study materiel from the hip of our belongings on the roadside. Dada had arranged for our stay at the house of his friends' uncle. Only because of Dada I could appear for SSC. Of course, it is not only about the SSC exam but education & better life ahead of all siblings are only & only because of Dada!

Not only that, he instructed Aai to send me to Pune on a particular day without letting Anna know! On a given day I left home when our father was not home and came to Pune by train. Dada was there at Pune station. He had managed for a room, college admission. There were difficulties for survival. But Dada alone was managing, managing with some inner compass! This inner compass was fueled by our strong Aai & her stronger willpower. This is the only reason how he managed things & headed to bring our younger sister also to Pune. The journey was very hard, but today I look to those years with pride for our family! Managing a residence & survival was a story in itself. But Dada & Aai managed & we learned to survive with whatever we had.

Dada had great leadership qualities & always striving to help needy students.



While in Garaware college, Dada arranged a tea stall on Annual Gathering & Fun Fair days to raise money for the Poor Boy's Fund. Dada with his friend was ready with big metal Bumb (बंब) for serving hot tea & coffee. Our college queen was the niece of a big shot from Bollywood. She personally stood to serve & helped Dada in this cause! No doubt It was a big success & a good amount was raised.

We were pulling on somehow. Dada graduated & I got admission to medical school. So Dada thought about taking a full-time job to support us, two sisters, & eventually two younger brothers. But our Aai wanted Dada to go for higher education. There was a piece of land she haired from her parents. She decided to sell it. Dada requested our maushi to pay us whatever amount she feels ok. She paid the amount & Dada told her now the land is yours. That's all! Deal done! No sign, no formalities! Till I know, the piece of land was in Aai's name only. Maushi & her son had faith in Dada & Aai. Not only that, they supposed Aai to be such a holy & godly figure that they believed that retaining her name on that piece of land will bring them good luck! Thus was the legacy of our Dada & Aai. Maushi's son prospered very well and following Dada's footsteps her grandchildren studied well. Money from the land was not much but along with Dada's earnings, our life became a little easier.

Dada's determination was remarkable. Dada was studying at Pune University for his final year M. Sc. One day he declared that he is going to take a drop! It was a shock as I knew we can't afford this. But he insisted saying it was the question of one year. Somehow I gathered courage & angrily said "We know that you are intelligent. Let us make a pickle of your brain!" Understanding that I am upset, he asked me what I wanted. I said "you will have to study well". Dada declared "done!". His determination was so strong that at night he used to lie on the bed, put bed sheet cover till the neck with a book in hand, and study till early morning because due to his job & college he could study only at night! Dada's love for sleep is well known to all but sleep didn't come in way even in sleeping position - whole night! Dada presented us with good result. Such was his determination!

Then Dada got a chance to do a doctorate at NCL with a monthly fixed assistantship, also, a quarter to stay! It was like heavenly conditions for the 3 of

us!

Dada was royal in spending, I wrote about 'his inner compass'

He knew he was going to have a high standard in life ahead! At the beginning of the month, he used to spend like a king. I used to look into our expense account. I suggested we will have such expenses at the end of the month- if we could spare- then. But Dada's motto was 'साखरेचे खाणार त्याला देव देणार' - God gives to a person who eats sugar the fact is that Dada had daring & had confidence in his own abilities!

Dada eventually got a job at PRL and was working with India's great scientist Vikram Sarabhai. Dada was settling well at Ahmedabad. The atmosphere there was electrifying as many eminent scientists were working wholeheartedly. Going to Ahmedabad used to be a treat. Now Aai asked Dada about marriage. Dada said it is ok! But he would like to propose to his friend 'Dr. Rajani Khare' first. If it doesn't materialize, he will look for a suitable match.

Our Vahini Sucharita, maiden name Rajani was known to us & was friendly with our sister Raju & Dada. Vahini's uncle took initiative in arranging this marriage and approached her parents. Vahini's parents, being impressed by Dada, accepted the marriage happily even though this was intercast proposal. and came to our Pune house with full respect to meet our Aai.

By that time Dada was invited to Brazil to establish a laboratory. Dada got married & within a couple of months left for Brazil in July 1970. He established a world-class laboratory in Rio de Janeiro while working as a professor of Materials Science and Engineering, during the years 1970- 1986.

With his academic achievements, he was looking after the whole family. Now he understood the value of higher studies in bigger institutions. So he pursued the doctorate of both brothers in the USA. Marriages of my sister, both brothers, and a good big apartment in Pune everything was taken care of by our Dada. In Marathi, we call elder brother वडील बंधू - fatherly brother! This word is very apt for Dada.

All-round care of the family was his duty very close to his heart!

We are lucky that our Vahini, Sucharita was always equally supportive to Dada

In his self-imposed duty!! Our Dada & Vahini were not only in deep love with each other but also respected each other very much.

In one of India visit both took Aai for pilgrimage. He told his intention telling me to arrange the tour by traveling by air & stay at the best five star hotels at each place! We approached Girikand tours and in close consultations with Dada & Vahini complete programmer was checked out. They wanted that Aai should be comfortable. They took Aai around personally to Shri kshetra Kashi, Rameshwar, Prayag, Khatmandu taking utmost care. Our Aai used to observe so many restrictions. Because of her health problems she could eat only particular food. Due to her religious nature she used to eat only food cooked by herself. All this was managed by Dada & Vahini. They took personal efforts in looking into all her needs & spent a lot as having such arrangements at five star hotels must have cost them a fortune. Aai was extremely contented with this pilgrimage that too with Dada & Vahini. This was evident on her face each photo of pilgrimage.

Later Aai visited US - all under same restrictions! Dada & Vahini's footsteps followed by both younger brothers. All three brothers & their wives took Aai all around US taking same type of care.

This underlines one fact that if elder child like Dada lays path of love & care of the family, youngers do follow the path!

Later I visited US & experienced same type of welcome from Dada-Vahini. They took me to Brazil also. It was wonderful experience. With Dada-Vahini Ramesh was also there. Their love for Brazil was evident. We were staying at the best hotel on Copacabana beach during our stay at Rio De Janeiro and during visit to Igwasu.

Fall! Vahini told that during their previous visits they stayed at moderate accomodation as that was struggling time with many responsibilities! But now they had decided to give me best of best! Brazil is so beautiful & colorful that I was tempted to try taking photos. Dada immediately presented me his new camera! My Brazil trip & the luxury I experienced with Dada-Vahini is the most memorable event in my life.

This was my pleasure trip to US. But in 2006 breast cancer was detected to Vahini. I went to Florida twice for about five and half months each time. In spite of all expert medical treatment our Vahini could not recover! During this illness Vahini was very much worried about Dada. Being a doctor she knew that recovery is not possible. She never cried for her own agony, she cried profusely saying how will Neelkanth bear this loss! This was testing time for both Dada & Vahini. Dada did 'सोळा सोमवार व्रत' For 16 Monday's not even drop of water till evening! Being working day he used to be busy whole day. There used to be important meetings & on many Mondays he had to travel to & forth from his office to Orlando office! God was testing his limits. After coming home, he used to take bath, read 'शिवलीलामृत' then only he used to take water & the restricted lunch! Vahini also used to feel sorry for him. Dada & Vahini's full family stood by them.

Dada & Vahini took each other's families like their own. Dada was respected by elders & also very friendly with all relatives on Vahini's side of their generation. Not only that, complete next-generation children & grand children were also affectionate with Dada and respected him. The same was true for Vahini from Dada's side.

After sad demise of our Dear Vahini, with his own determination Dada kept himself occupied in his work. He retired quite late, he was nearing eighty then. Even physically he was fine, mentally he got shattered. During early age he used to comment that he can keep busy himself with work & only work! If Vahini was there it would have been a beautiful retired life. Whatever they had earned whole life - not only wealth but love, affection and respect might have given them a happy, content life together ! But it was not to be!!

During memorial every one expressed their feelings for all the help they got from Dada & Vahini!

I sincerely believe that whatever I am, is only & only because of Dada & eventually because of Vahini!

I bow my head with utmost Respect & Gratitude.

**- Dr. Snehalata Taore**

---

# Inspiring Memories of Dada : My Guiding Light

---

Dr. Dhere, our dearest eldest brother - Dada, has been always a source of inspiration & guiding light for all his siblings, 4 of us, Dr. Snehalata(Taore), Dr. Rajani (Bennur), Dr. Ashok & Dr. Ramesh Dhere. Because of his continued support & encouragement, we have got honourable place in the Guinness Book of world records as maximum Doctorates in the same family.

Right from our childhood, we never felt that he is just few years elder to us because of the responsibility he had.

My mother used to tell a story at the time of Dada's birth. Those days the delivery used to be conducted in the house by expert nurse (suyeen). When my mother started getting labour pains around midnight, my aunt went to call the nurse. The nurse came out of her house & said, it's late, the baby boy is already born. Look at the Dhruv star. This boy will shine like this star & will be world famous!

Dada had a very brilliant academic career. He got both primary & middle school merit scholarships.

He wanted to go to Pune for college education as that time there was no college in Barsi. However, our father- Anna, was reluctant as he thought he couldn't afford to pay for his education & maintenance in his meagre salary & he also felt that if Dada goes out for higher studies, all other children who were also very good in studies, too would want that way which would be impossible for him.

Anna used to observe yearly one day silence (Maunvrata) as a part of Meherbaba worship, he used to sit with slate & pencil. Dada chose this day to go to Pune as Anna wouldn't be able to shout. He packed his things in a small cloth bag & told Anna that he is going. Anna wrote on the slate asking 'where?' Dada told him 'to Pune, for college studies'! Anna was so wild & I still vividly remember, he wrote putting so much pressure on pencil & slate - 'GO'. And Dada went with little money that Aai gave him. House doors were closed to him for quite sometime, till he came to take our dear Snehlata for her SSC exam to Sholapur centre (as there was no examination centre in Barsi)! But he used to write letters to us.

During his college education, he worked as a part-time sales boy in a stationary shop on Laxmi road, Pune. He struggled a lot & sometimes he never had money to go to college by bus & used to walk long distance.

When our youngest brother Ramesh joined for M. Sc. in Physics dept., Dada had given him motor cycle for going to University. That time I reminded Dada how he used to walk to University as he had no money for bus, Dada jokingly replied, 'Ramesh had elder brother to support him'!

He had leadership qualities right from childhood. He started keeping public Ganesh in our area in Barsi. He also made us do the entertainment programs in the evenings.

\* In the pendal erected just in front of our house, he had put one curtain on

the back of Ganesh idol & had fixed a colourful rotating wheel (with a handle on backside behind the curtain) just behind the head & crown portion of the idol. Whenever any visitors used to come to see, he would make one of us to go behind the curtain & manually keep the wheel rotating, as there was no auto rotation POSSIBLE.\*

When I was in 4th grade & my sister in 7th, our two maternal uncles had come with wedding proposals. My father felt that rejection will be like insulting them. Here Dada told them that both the sisters are going to go for higher education so no thought of early marriage.

In college, once mathematics professor Bhat thought that Dada was not attentive. So he asked to explain the problem on the blackboard, that was being solved. Dada went to the dias, completely wiped the board & rewrote everything! From that time Prof Bhat had special favour for him & other students used to call him Bh Ja ( Bhatancha Jawai- Bhat's son in law).

He worked with Dr Vikram Sarabhai in PRL, Ahamedabad. For his post, he was interviewed in Delhi. He had his return ticket booked. During the interview, he answered all the questions well but in the later part, he was looking at the watch & started saying ' I don't know' . Dr Sarabhai told, ' young man, I know that you know'. don't worry about your return journey. Dada used to work for late hours in PRL. One day Dr Sarabhai went to his lab at 3 a.m. & showed his appreciation.

Once my 2 brothers & I had gone to Ahamedabad & visited PRL. We were very keen to meet Dr. Sarabhai but Dada felt it would be too formal to take us to his cabin to get introduced. Instead, he thought of an idea. Dr. Sarabhai had very definite timing schedule. He used to leave his room on 1st floor at 12.40 noon to go for lunch, climb downtown & proceed home. So, in order to meet him, we started climbing up the stairs along with Dada at 12.40 and met Dr Sarabhai, as if by chance, at the landing.

Dada was active in extracurricular activities also. He was general secretary in

Pune University when he was studying for Masters, secretary for Marathi mandal in Ahamedabad.

When I wanted to continue studies for Ph. D., my mother was a bit worried about the future problems to get a suitable match. But he convinced her. With the encouragement from him & my mother, we all could complete our highest degrees.

Royal in spending money, used to take us to best hotels & good movies during the 1st week of month after getting Ph. D. fellowship amount.

I remember, once he had taken me to watch the movie 'Gone with the wind, in West end theatre in Pune camp area. He made me take bus from Deccan gymkhana to camp & get down at West end bus stop where he would come by bicycle & wait for me. At West end there were 2 bus stops, 1 before & 1 after. He didn't know where I would get down, so he kept shunting on bicycle between the two stops, without grumbling, till I arrived! That time, there were no mobile phones like today to contact!\*

\*Dada had a very good sense of humour & always kept atmosphere around him light by telling some past incidences in life or some jokes. When he was doing research for Ph. D., we were staying in NCL quarters. Once he purchased pair of chappals in a shop at Deccan gymkhana. After coming home & opening the box, we realized that the salesman by mistake had packed both the chappals of left foot. Immediately we went to the shop to get the pair exchanged. After entering the shop, instead of going to the owner first asking for the exchange of the pair, he called that salesman & asked him, ' show me your feet!' \*

My sister in law Dr. Sucharita was also equally enthusiastic in supporting the family, be it for cause or financial aspects. She was a good friend for me. They formed a very good pair & lived as lovely & loving couple. She supported him whole heartedly. The credit of family welfare goes to her too!

Whatever I am today, it's because of the enthusiasm, active support & encouragement from him & my mother.

**- Rajani Bennur**

---

# Dada - The Big Brother for Our family and Beyond

---

Dada has done a lot for Dhere family and also helped a number of others such as colleagues, friends, students and many others. He worked hard to support the family right from the beginning. Dada's story won't be complete without mention of Aai and Vahini. Aai sacrificed a lot for our education. She sold the land she had inherited from her parents without giving it a second thought. After their marriage, Vahini made sure the family support continued. Dada and Aai laid the foundation for the family by helping with our education. Dada and Vahini completed the building afterwards. We were blessed to have him in the family and be able to share him with the rest of the world!

My memories about Dada go back to very young days. He had gone to Pune for higher studies by the time I entered second grade. He would visit home during vacations. Because he used to be well dressed and well groomed, and at 5' 8" height plus stout built, he would stand out in the crowd. For me, it was like some big shot officer coming and staying with us. He took the lead in taking every one of us to Pune for higher studies.

Later on, when I finished high school and came to Pune for college education, he was finishing his Ph.D. We stayed at NCL quarters in the beginning and later moved to the area closer to the M.E.S. College (currently Garware college). Dada started working for P.R.L. under Dr. Sarabhai in Ahmedabad. He always supported the family from the beginning. He was not just the elder brother, but the rock

support for the family.

I recall one incident when we were renting the ground floor in Devi Krupa near Paud Phata. This was a new house and the wiring in the living room was messed up. The electricians could not fix it easily. Dada was visiting and when he saw what was going on, he took it on himself to fix it. He drew a wiring diagram and removed the existing wiring. Then one by one, he finished connecting the lights and plugs. And at the end, by golly, he had every unit working like it was supposed to. It was in my first year of engineering and I was really impressed. He inherited his passion for cleanliness and methodical approach from our mother. This was partly the key to his success in the field of ultra-high vacuum technology as well as thin-films study.

He later got married and decided to go to Brazil around the same time. I was in my third year of engineering when he left for Brazil. After finishing engineering, I started working in Lonavla first and in Navsari later. Dada and Vahini were visiting India in 1974. During their visit, I expressed my interest in going to Brazil. They approached an agency working for European migration which accepted me as a candidate based on my background. This was an exciting period for me. I got married and went to Brazil. We lived with Dada and Vahini during our stay in Brazil. They both were very helpful and supportive. I studied for my masters at Instituto Militar de Engenharia in Rio in the same department where

Dada was working.

During my stay, I got sick with symptoms of awful coughing. Doctors could not easily detect the problem. Vahini researched and took me to several experts. She made sure that there was no unnecessary testing or treatment given to me. Finally, she found an expert in tropical diseases who ran the tests to determine that it was a case of tropical eosinophilia. Somehow, this was not a common disease in Rio, the reason many doctors could not easily conclude what was going on. It was Vahini's relentless efforts that helped cure me.

Our daughter, Tanvi, was born in Rio in 1977. She grew up in the home with Dada and Vahini around until we were there. On weekends, there used to be a children's TV show by entertainer Sylvio Santos. This was a colorful show with characters dressed in animal costumes singing and dancing. Tanvi used to get very excited as soon as the show started. She would dance and yell all over the living room. Her favorite Kaka would join in the dance in front of the TV. I can still remember them holding both hands and dancing for a long time. Tanvi was loved and protected by both Dada and Vahini. During the get-togethers at Indian homes or at our place, there were other kids. Tanvi being the youngest, she needed to be protected from other kids. Dada was her shield!

When it was time for us to leave Rio for the US, most of the Indians in the town came to the airport to see us off. Then we were going through the final checkpoint and Tanvi realized we were parting from Dada and Vahini. She was two and half years old then. She started screaming Kaka, Kaka and tried to run out towards Dada. This reminded me of little Narayan Rao Peshawa crying कका कका मला वाचवा we had learned in the history books. Both Dada and Tanvi were throwing their arms at each other and almost ran towards each other. This went on for a while. We finally got inside, but poor Tanvi kept on crying and I am sure Dada-Vahini did the same on the outside. There was a fellow Indian on the plane traveling with us. He asked Parineeta, "Why are you taking their daughter?" He was surprised when we told him Tanvi was our daughter. Such was the love

between Tanvi and Dada.

I joined the graduate program at University of Kentucky under Prof. De Angelis. Dada came up with a scholarship from Brazil for me that helped a great deal during my Ph.D. years. After finishing my Ph.D., I worked as a postdoctoral. I spent some time at ORNL followed by my career with DuPont. Our son Neelesh was born in Knoxville while I was at ORNL. Dada and Vahini relocated to the US, initially in Denver, CO and then in Florida. Kids had fun visiting Florida, especially receiving big gifts. Beaches as well as other attractions were a bonus. Dada was always busy at work with projects, conferences, students and other activities. Yet both of them found time for family members and friends. There was hardly a time when they did not have someone visiting them, staying with them or traveling with them.

In 1998, after Aai went through a few of her health issues, Parineeta suggested all brothers and sisters should get together for Diwali. Everyone loved the idea. We all got together in Pune almost after over twenty three years. Dada was attending a meeting in Japan and arrived in Pune in time for Diwali. I still remember when he entered the home, the first thing he did was he hugged Aai. Aai's face was lit up like a christmas tree. The love between the two of them was unparalleled. Aai was always extremely proud of this son, and rightfully so! On Bhau Beej day, Ramesh and I gave our gifts. Then it was Dada's turn. When both Tai and Raju opened their envelopes, they were completely surprised. Aai said "माझ्या मुलाचा हात सर्वात मोठा!" She always remained proud of Dada for his accomplishments and treatment of others. During her final days in 2000, Dada decided to go to Pune to be with her. He managed his work from there by regularly communicating with his students and colleagues. Aai passed away on Feb. 17th of 2000. Dada was with her during her final days. He also performed all of the final services. Everything went according to Aai's wishes. Afterall, she had her most favorite son with her. What more could she ask for?

Dada always remained busy with work and professional activities. Vahini



always gave him unconditional company and support. Later during Vahini's illness, Tanvi and Vahini got closer once again. Tanvi had completed her MD and did her residency at Emory University's Medical facility. Both of them being doctors, they had a lot to share. After Vahini passed away in 2008, Dada stayed busy with work. He visited us more frequently. His life had certainly changed. Afterwards, when he started having seizures, Tanvi arranged for a thorough check up at Emory campus. Dada would tell everyone very proudly about the royal treatment he received. Every doctor he met during this period would say, "So, you are Dr. Tanvi Dhere's uncle!" She had established herself in the university.

Later on, Dada had his prostate surgery at UCLA clinic in 2017 performed by Dr. Mihir Desai. Dr. Desai is among world's leading experts in prostate surgery. We were pleased to learn that Dr. Desai's mother and Vahini were not only just classmates, but also lab partners in the B.J. Medical School in Pune. I accompanied him during his surgery and follow-up. His surgery went very well and he recovered following the surgery. Dada's close friend, a fellow Barshikar and his associate at NCL, Dr. Vijay Deokar, helped us during this period since we were out-of-towners. There was an unfortunate incident around the same time when my brother-in-law Dr. Madhu Jigjinni passed away while on a trip abroad. We visited his family in Orange county following Dada's recovery.

During the following years, the dementia started affecting Dada, especially after he completely retired from FSEC. We started noticing the change. He spent his time between our place, with Ramesh and at his Florida home, someone always accompanying him. As he became more dependent, we decided to move him to Pune where it was easier to get full time personalized help.

After he caught the Covid infection and he was hospitalized in the ICU, Tai told us to come to Pune ASAP. Raju and I left within a couple of days. There was some delay due to travel restrictions in the tests required. After reaching Pune, we saw him in the hospital where he was not responding much. Family decided to move him to a nursing home facility to avoid more involved treatments.

The facility, Palash, was really nice and we had great hopes. However, after about ten days there, we received the dreadful call to come immediately. All brothers and sisters were with him during his final days! This was a great consolation for us. His final services were performed according to his wishes.

The week following Dada's passing away, there was a flood of visitors, phone calls, and messages, we hardly had any time to mourn. All his friends, relatives, students, colleagues from all over the world connected with us to convey their thoughts and fond memories of both Dada and Vahini. He lived a full life the way he wanted, helping others while being at the top of his profession!

दादांनी ढेरे कुटुंबासाठी खूप काही केले आहे आणि इतर अनेक जणांना जसे की सहकारी, मित्र, विद्यार्थी आणि इतर अनेकांना मदत केली आहे. त्यांनी सुरुवातीपासूनच कुटुंबाला उदरनिर्वाह करण्यासाठी कष्ट केले. आई आणि वहिनीचा उल्लेख केल्याशिवाय दादांची कथा पूर्ण होणार नाही. आमच्या शिक्षणासाठी आईने खूप त्याग केला. तिने तिच्या आई-वडिलांकडून वारसा मिळालेली जमीन दुसरा विचार न करता विकली. त्यांच्या विवाहानंतर, वहिनीने खात्री केली की कुटुंबाचा पाठिंबा कायम राहील. दादा आणि आई यांनी शिक्षणाची सुरुवात करून कुटुंबाचा पाया घातला. दादा आणि वहिनी यांनी नंतर इमारत पूर्ण केली.

दादांविषयीच्या माझ्या आठवणी अगदी लहानपणापासूनच्या आहेत. मी दुसऱ्या वर्गात प्रवेश करेपर्यंत तो उच्च शिक्षणासाठी पुण्याला गेला होता. उन्हाळ्यात किंवा दिवाळीच्या सुट्टीत तो घरी जायचा. कारण तो चांगल्या पोशाखात आणि सुशोभित असायचा, आणि ५'८ उंचीमुळे आणि वाढीव बांध्यामुळे तो गर्दीत उभा राहिला की उठून दिसायचा. माझ्यासाठी हे मोठे बिग शॉट ऑफिसर आल्यासारखे होते आणि आमच्यासोबत राहिले. आपल्या प्रत्येकाला उच्च शिक्षणासाठी पुण्याला नेण्यात त्यांनी पुढाकार घेतला.

नंतर, जेव्हा मी हायस्कूल पूर्ण केले आणि महाविद्यालयीन शिक्षणासाठी पुण्यात आलो, तेव्हा तो पीएचडी पूर्ण करत होता. आम्ही सुरुवातीला NCL क्वार्टरमध्ये राहिलो आणि नंतर M.E.S. कॉलेजच्या (सध्या गरवारे कॉलेज) जवळच्या भागात गेलो. दादांनी P.R.L साठी काम करायला सुरुवात केली. अहमदाबादमध्ये डॉ. साराभाई यांच्या अंतर्गत. त्यांनी सुरुवातीपासूनच कुटुंबाला नेहमीच साथ दिली. तो फक्त मोठा भाऊ नव्हता, परंतु कुटुंबासाठी खडकाचा आधार होता.

पौड फाट्याजवळ देवीकृपामध्ये तळमजला भाड्याने घेत असताना मला एक प्रसंग आठवला. हे नवीन घर होते आणि दिवाणखान्यातील वायरिंग गोंधळलेले होते. इलेक्ट्रीशियन ते सहजपणे ठीक करू

शकले नाहीत. दादा भेट देत होते आणि काय चालले आहे ते पाहिल्यावर त्यांनी ते स्वतःच बरोबर केले. त्याने एक वायरिंग आकृती काढली आणि विद्यमान वायरिंग काढली. मग एक एक करून त्याने दिवे आणि पुग जोडणे पूर्ण केले आणि शेवटी, गॅलीने, त्याच्याकडे प्रत्येक युनिटला पाहिजे तसे काम केले. मी माझ्या अभियांत्रिकीच्या पहिल्या वर्षाला होते आणि यामुळे मला आश्चर्य वाटले. स्वच्छता आणि पद्धतशीर दृष्टिकोन त्याच्या रक्तात होता, आमच्या आईची काळजी घेणे. अल्ट्रा-हाय व्हॅक्यूम टेक्रॉलॉजीच्या क्षेत्रात तसेच पातळ-फिल्म अभ्यासाच्या क्षेत्रातही त्याच्या यशाची गुरुकिल्ली होती.

नंतर त्याने लग्न केले आणि त्याच वेळी ब्राझीलला जाण्याचा निर्णय घेतला. मी माझ्या इंजिनीअरिंगच्या तिसऱ्या वर्षाला होते तेव्हा तो ब्राझीलला गेला. अभियांत्रिकी पूर्ण केल्यानंतर मी प्रथम लोणावळा आणि नंतर नवसारी येथे काम करण्यास सुरुवात केली. १९७५ मध्ये दादा आणि वहिनी भारत दौऱ्यावर आले होते. त्यांच्या भेटीदरम्यान, मी ब्राझीलला जाण्यात स्वारस्य व्यक्त केले. त्यांनी युरोपियन स्थलांतरासाठी काम करणाऱ्या एजन्सीशी संपर्क साधला, ज्याने मला माझ्या पार्श्वभूमीवर उमेदवार म्हणून स्वीकारले. हा माझ्यासाठी रोमांचक काळ होता. मी लग्न केले आणि आम्ही ब्राझीलला गेलो. ब्राझीलमध्ये मुक्काम करताना आम्ही दादा आणि वहिनीसोबत राहत होतो. ते दोघेही खूप उपयुक्त आणि सहाय्यक होते. मी माझ्या मास्टर्ससाठी रिओ मधील इन्स्टिट्यूटो मिलिटार डी एन्जेनहारिया येथे त्याच विभागात जिथे दादा कार्यरत होते तिथे अभ्यास केला.

माझ्या मुक्कामादरम्यान, मी भयंकर खोकल्याच्या लक्षणांनी आजारी पडले. डॉक्टर सहजपणे समस्या शोधू शकले नाहीत. वहिनीने संशोधन केले आणि मला अनेक तज्ञांकडे नेले. तिने खात्री केली की मला कोणतीही अनावश्यक चाचणी किंवा उपचार दिले गेले नाहीत. शेवटी, तिला उष्णकटिबंधीय रोगांचे तज्ञ सापडले ज्यांनी ते उष्णकटिबंधीय इओसिनोफिलियाचे प्रकरण असल्याचे निर्धारित करण्यासाठी चाचण्या केल्या. दुर्दैवाने, हे रिओमध्ये सामान्य नव्हते, कारण बरेच डॉक्टर काय चालले आहे याचा सहज निष्कर्ष काढू शकले नाहीत. वहिनीच्या अथक प्रयत्नांनीच मला बरे करण्यास मदत केली.

आमची मुलगी तन्वीचा जन्म १९७७ मध्ये रिओमध्ये झाला. ती तिथे दादा आणि वहिनी यांच्यासोबत घरात वाढली. शनिवारी, मनोरंजन करणारा सिल्व्हिओ सॅटोसचा मुलांचा टीव्ही शो असायचा. हा एक रंगीबेरंगी कार्यक्रम होता ज्यात प्राण्यांच्या पोशाखात गाणारी आणि नाचणारी पात्रे होती. शो सुरू होताच तन्वी खूप उत्साहित व्हायची. ती सर्व खोलीत नाचत आणि ओरडत असे. तिचे आवडते काका टीव्हीसमोर नृत्यात सामील व्हायचे. मी अजूनही त्यांना दोन्ही हात धरून आणि बराच काळ नाचताना आठवत आहे. तन्वीवर दादा आणि वहिनी दोघांचे प्रेम आणि संरक्षण होते. भारतीय घरे किंवा आमच्या ठिकाणी गेट-टुगेदर दरम्यान, इतर मुले होती. तन्वी सर्वात लहान असल्याने तिला इतर मुलांपासून संरक्षित करणे आवश्यक होते. दादा तिची ढाल होती!

जेव्हा आमच्यासाठी अमेरिकेसाठी रिओ सोडण्याची वेळ आली, तेव्हा शहरातील बहुतेक भारतीय आम्हाला पाहण्यासाठी विमानतळावर आले. मग आम्ही अंतिम चौकीतून जात होतो आणि तन्वीला समजले की आम्ही दादा आणि वहिनीपासून विभक्त आहोत. तेव्हा ती अडीच वर्षांची होती. तिने काका, काका किंचाळण्यास सुरुवात केली आणि दादांच्या दिशेने पळून जाण्याचा प्रयत्न केला. याची तुलना फक्त लहान नारायण राव पेशवा रडणाऱ्या काका काका माला वाचवाशी होऊ शकते. मी इतिहासाच्या पुस्तकांमध्ये शिकलो. ते दोघे एकमेकांवर हात फेकत होते आणि जवळजवळ एकमेकांच्या दिशेने पळत होते. हे काही काळ चालले. शेवटी आम्ही आत गेलो, पण बिचारी तन्वी रडत राहिली आणि मला खात्री आहे की दादांनी दुसऱ्या बाजूलाही असेच केले. आमच्या सोबत प्रवास करणाऱ्या विमानात एक सहकारी भारतीय होता. त्याने परिणीताला विचारले, तू त्यांची मुलगी का घेत आहेस? तन्वी आमची मुलगी असल्याचे जेव्हा आम्ही त्याला सांगितले तेव्हा त्याला आश्चर्य वाटले. तन्वी आणि दादा मधील प्रेम असेच होते.

मी प्रोफेसर डी एंजेलिस अंतर्गत केंटकी विद्यापीठात पदवीधर कार्यक्रमात सामील झालो. दादा माझ्यासाठी ब्राझीलमधून शिष्यवृत्ती घेऊन आले ज्याने माझ्या पीएचडीच्या वर्षामध्ये खूप मदत केली. पीएचडी पूर्ण केल्यानंतर पोस्ट डॉक्टरल म्हणून काही काळ, मी ओआरएनएलमध्ये काही वेळ घालवला आणि त्यानंतर ड्यूपॉन्टसह माझी कारकीर्द. दादा आणि वहिनी अमेरिकेत स्थलांतरित झाले, सुरुवातीला डेन्व्हर, सीओ आणि नंतर फ्लोरिडामध्ये. मुलांना फ्लोरिडाला भेट देताना मजा आली, विशेषतः जेव्हा त्यांना मोठ्या भेटवस्तू मिळाल्या. समुद्रकिनारे तसेच इतर आकर्षणे हा बोनस होता. दादा नेहमी प्रोजेक्ट, कॉन्फरन्स, विद्यार्थी आणि इतर कामांमध्ये व्यस्त होते. तरीही दोघांनाही कुटुंबातील सदस्य आणि मित्रांसाठी वेळ मिळाला. क्वचितच एक काळ असा होता जेव्हा त्यांच्याकडे कोणीही त्यांना भेटायला, त्यांच्यासोबत राहण्यासाठी किंवा त्यांच्यासोबत प्रवास करत नसत.

१९९८ मध्ये, आईने तिच्या काही आरोग्यविषयक समस्यांमधून गेल्यानंतर परिणीताने सर्व भावा-बहिणींना दिवाळीसाठी एकत्र येण्याचे सुचवले. प्रत्येकाला ही कल्पना आवडली. जवळजवळ तेवीस वर्षांनंतर आम्ही सर्व पुण्यात एकत्र आलो. दादा जपानमध्ये एका सभेला उपस्थित होते आणि दिवाळीच्या वेळी पुण्यात आले. मला अजूनही आठवतं की जेव्हा त्याने घरात प्रवेश केला तेव्हा त्याने पहिली गोष्ट केली की त्याने आईला मिठी मारली. आईचा चेहरा लाख दिव्यांसारखा उजळला होता. त्या दोघांमधील प्रेम अतुलनीय होते. आईला या मुलाचा नेहमीच अत्यंत अभिमान होता, आणि बरोबर. रमेश आणि मी भाऊ बीजे साठी भेटवस्तू दिल्यानंतर, दादांची पाळी होती. जेव्हा ताई आणि राजू दोघांनी त्यांचे लिफाफे उघडले तेव्हा ते पूर्णपणे आश्चर्यचकित झाले. आई म्हणाली मुलांचा हात सर्वात मोठा! दादाच्या कर्तृत्वाबद्दल आणि इतरांशी केलेल्या वागणुकीबद्दल तिला नेहमीच अभिमान वाटला. २००० मध्ये तिच्या शेवटच्या दिवसांमध्ये, दादाने तिच्यासोबत राहण्यासाठी पुण्याला जाण्याचा निर्णय घेतला. त्याने

तेथून आपले विद्यार्थी आणि सहकाऱ्यांशी नियमित संवाद साधून आपले काम सांभाळले. १७ फेब्रुवारी रोजी आईचे निधन झाले. तिच्या शेवटच्या क्षणांमध्ये दादा तिच्यासोबत होते. त्याने अंतिम सेवा देखील केली. सर्व काही तिच्या इच्छेनुसार चालले. तिच्यासोबत तिचा सर्वात आवडता मुलगा होता. ती आणखी काय विचारू शकते?

दादा नेहमी कामात आणि व्यावसायिक कामांमध्ये व्यस्त राहिले. वहिनीने त्याला नेहमी बिनशर्त सहवास आणि पाठिंबा दिला. नंतर वहिनीच्या आजारादरम्यान, तन्वी आणि वहिनी पुन्हा एकदा जवळ आले. तन्वीने आपले एमडी पूर्ण केले आणि एमोरी विद्यापीठाच्या वैद्यकीय सुविधेत तिचे निवासस्थान केले. दोघेही डॉक्टर असल्याने त्यांच्याकडे खूप काही सामायिक होते. २००८ मध्ये वहिनीचे निधन झाल्यानंतर दादा कामात व्यस्त राहिले. त्याने आम्हाला वारंवार भेट दिली. त्याचे आयुष्य नक्कीच बदलले होते. मग जेव्हा त्याला दौरे येऊ लागले, तन्वीने एमोरी कॅम्पसमध्ये कसून तपासणीची व्यवस्था केली. दादा प्रत्येकाला त्याला मिळालेल्या शाही वागणुकीबद्दल खूप अभिमानाने सांगायचे. या काळात त्याला भेटलेले प्रत्येक डॉक्टर म्हणायचे, तर, तुम्ही डॉ तन्वी ढेरेचे काका आहात! तिने विद्यापीठात स्वतःला प्रस्थापित केले होते.

नंतर, दादांनी डॉ मिहीर देसाई यांनी केलेल्या यूसीएलए क्लिनिकमध्ये प्रोस्टेट शस्त्रक्रिया केली. देसाई हे प्रोस्टेट शस्त्रक्रियेतील जगातील अव्वल तज्ञ आहेत. डॉ. देसाई यांची आई आणि वहिनी केवळ वर्गमित्रच नाहीत तर पुण्यातील बी.जे. मेडिकल स्कूलमध्ये लॅब पार्टनर आहेत हे जाणून आम्हाला आनंद झाला. त्याच्या शस्त्रक्रियेदरम्यान आणि पाठपुरावा करताना मी त्याच्यासोबत होतो. त्याची शस्त्रक्रिया खूप चांगली झाली आणि शस्त्रक्रियेनंतर तो बरा झाला. दादांचे जवळचे मित्र, सहकारी बार्शीकर आणि एनसीएलमधील त्यांचे सहकारी, डॉ. विजय देवकर यांनी आम्ही शहराबाहेर असल्याने या काळात आम्हाला मदत केली. एक दुर्दैवी घटना घडली जिथे माझे मेहुणे डॉ मधु जिजिनी यांचे

परदेश दौऱ्यावर असताना निधन झाले. दादांच्या बरे झाल्यानंतर आम्ही ऑरेंज काउंटीमधील त्यांच्या कुटुंबाला भेट दिली.

पुढील वर्षांमध्ये, स्मृतिभ्रंश त्याच्यावर परिणाम करू लागला, विशेषतः जेव्हा तो एफएसईसीमधून पूर्णपणे निवृत्त झाला. आम्ही बदल लक्षात घेऊ लागलो. त्याने आमच्या ठिकाणादरम्यान, रमेशसोबत आणि त्याच्या पत्नोरिडाच्या घरी आमच्यासोबत त्याच्यासोबत वेळ घालवला. तो अधिक आश्रित झाला म्हणून, आम्ही त्याला भारतात नेले जिथे पूर्ण वेळ वैयक्तिक मदत मिळवणे सोपे होते.

कोविड संसर्गानंतर, जेव्हा त्याला आयसीयूमध्ये रुग्णालयात दाखल करण्यात आले, ताईने आम्हाला लवकरात लवकर पुण्यात यायला सांगितले. राजू आणि मी काही दिवसातच निघालो. प्रवास प्रतिबंध आणि आवश्यक चाचण्यांमुळे थोडा विलंब झाला. पुण्याला पोहोचल्यावर आम्ही त्याला हॉस्पिटलमध्ये पाहिले जेथे तो जास्त प्रतिसाद देत नव्हता. अधिक उपचार टाळण्यासाठी कुटुंबाने त्याला नर्सिंग होम सुविधेत हलवण्याचा निर्णय घेतला. सुविधा, पलाश, खरोखर छान होती आणि आम्हाला खूप आशा होत्या. मात्र, तिथे सुमारे दहा दिवसांनी आम्हाला लगेच येण्याचा फोन आला. त्याच्या शेवटच्या दिवसांमध्ये सर्व भाऊ आणि बहिणी त्याच्यासोबत होते! आमच्यासाठी हा एक मोठा दिलासा होता. त्याच्या अंतिम सेवा त्याच्या इच्छेनुसार केल्या गेल्या.

दादांच्या निधनानंतरच्या आठवड्यात, आम्हाला इतके अभ्यागत, फोन कॉल आणि संदेश प्राप्त झाले, आम्हाला शोक करायला क्वचितच वेळ मिळाला. त्याचे सर्व मित्र, नातेवाईक, विद्यार्थी, जगभरातील सहकारी दादा आणि वहिनी या दोघांचे विचार आणि प्रेमळ आठवणी सांगण्यासाठी आमच्याशी जोडलेले आहेत. त्याने त्याच्या इच्छेप्रमाणे पूर्ण आयुष्य जगले, त्याच्या व्यवसायाच्या शीर्षस्थानी असताना इतरांना मदत केली!

- अशोक ढेरे



# रजनीगंधा जीवनी या बहुरनी आली

माझी धाकटी बहीण रजनी ऊर्फ बेबी, माझ्यापेक्षा आठ वर्षांनी लहान त्यामुळे तिचे दुपट्यांत गुंडाळलेले बाळरूपही मला आठवते आहे. गोरीपान, लाल ओठ व कपाळावर लाल डाग असलेले बाळरूप, अशी जन्मताच खूण असेल तर ती कोणाच्यातरी पुनर्जन्माची खूण मानली जायची, पण काही दिवसांनी आपोआप ही खूण नाहीशी झाली.

आम्हा सहा बहिणीतील सर्वांत लहान म्हणून तिला बेबी म्हणू लागले. तिचे रजनी हे नाव घरातील माणसांना जणू माहीतच नव्हते. ती डॉक्टर झाली. रत्नागिरीच्या सिव्हील हॉस्पिटलमध्ये डॉक्टर म्हणून काम करू लागली व काकांनी सर्वांना बजावले की तिला आता रजनी म्हणा. त्यानंतर प्रयत्नपूर्वक रजनी हे नाव रूढ केले गेले.

इंटर सायन्सला असताना रत्नागिरीला गोगटे कॉलेजला ती आली. त्यावेळी तिचा सहवास वर्षभर मिळाला त्यामुळे तिचा प्रेमळ स्वभाव, संकोची वृत्ती, दुसऱ्याच्या उपयोगी पडणे स्वतःसाठी मात्र कसलीच अपेक्षा न ठेवणे ह्या स्वभावातील अंगभूत गोष्टी प्रकर्षाने जाणवल्या आणि त्याचवेळी आम्हा दोघींमधील प्रेमाचे नाते घट्ट होऊ लागले.

माझी मुलगी वर्षा त्यावेळी लहान म्हणजे ४-५ महिन्यांची होती. कॉलेजमधून आल्यावर हातपाय धुवून ती वर्षाला घेऊन फिरवीत असे. त्यावेळी ती मला सांगायची की, मालूताई तू अभ्यास कर. तिला मी तासभर सांभाळते. माझे लग्न झाले तेव्हा मी S.S.C. झालेली होते. लग्नानंतर एक वर्षाने GCD ची परीक्षा बाहेरून अभ्यास करून दिलेली होती. ती पास झाल्यावर तू आता बाहेरून अभ्यास करून B.Com डिग्रीही मिळवशील असा रजनीचा आग्रह व पाठिंबा होता. बाहेरून अभ्यास करून B.Com होणे मला अवघड वाटत होते. पण मालूताई तू अभ्यास कर तू पास होशील असे प्रोत्साहन रजनी देई. तिच्याकडून होईल ती मदत करण्याची तिची तयारी असे. माझ्या B.Com च्या शेवटच्या वर्षी ती B.J.Medical ला होती. लेडीज हॉस्टेलला राहात होती. त्या हॉस्टेलच्या रेक्टर बाईची तिने परवानगी

काढली व शेवटचे २० दिवस तिच्या खोलीत राहून केवळ अभ्यास करावयास मिळाल्याने मी B.Com पहिल्या फटक्यात पास झाले. तिच्यामुळेच मी डिग्री मिळवू शकले. हे तिचे ऋण कायमच राहिले आहे. मी तिला ते कधी बोलून दाखविले की नाही हे ही आठवत नाही. काळाचा पट्टा धावत असतो बघता बघता त्या पट्ट्याबरोबर ती दृष्टिआड झाली व मनची गोष्ट मनातच राहून गेली.

मी B.Com झाले त्याचे दुसरे वर्षी रजनी M.B.B.S. झाली व ती रत्नागिरी सिव्हील हॉस्पिटलमध्ये काम करू लागली. मी रत्नागिरीला होते म्हणूनच रत्नागिरी तिने निवडली. त्या वर्षी आम्ही घर बांधले व शिकें हायस्कूलजवळ राहावयास गेलो होतो. तिथेच जन्मलेला श्रीरंग त्यावेळी लहान होता. त्याचवेळी शिकें हायस्कूल मधील B.Com टीचर B.Ed करण्याकरिता गेले होते. त्यामुळे त्यांना वर्षासाठी कॉमर्स शिकविण्यासाठी दहावी व अकरावीसाठी शिक्षक हवा होता व रोज दोनच तास घ्यावयाचे होते. त्यासाठी मी शाळेत शिकविण्याचे काम करीन का म्हणून मुख्याध्यापक व संस्थापक रावबहादूर शिकें आमच्या घरी विचारावयास आले होते. माझा मुलगा श्रीरंग लहान होता म्हणून मी जवळ जवळ नाही म्हणणार होते पण रजनी म्हणाली अगं तुला घरी येऊन विचारीत आहेत तू नाही म्हणू नकोस. हाही एक अनुभव असतो. एक वर्ष केव्हाच निघून जाईल. मी ते कबूल केले आणि ते वर्ष खूपच आनंदाचे गेले. शाळेतील मुलांबरोबर संवाद जमला. दहावीच्या मुलानी तर एक दिवसाची ट्रिप काढली जवळच पानवलला. पण ट्रिपच्या आठवणी अजूनही त्यावेळचे विद्यार्थी भेटले की काढतात. हा सुखद आनंद रजनी केवळ तुझ्यामुळे मिळाला. त्याबद्दल मी कित्येक वेळा मनातल्या मनात तुझे आभार मानले आहेत. कारण व्यक्त करावयास तू येथे होतीस कुठे? सातासमुद्रापलीकडे जाऊन राहिलीस गं.

कारण १९६९ साली तुझा विवाह डॉ. निळकंठ ढेरे यांच्याबरोबर झाला व त्यानंतर तू त्यांच्याबरोबर दक्षिण अमेरिकेत रिओ दी जानेरोला गेलीस. ते इतके दूर होते की, मला तुझे काहीच करता आले नाही. कारण ३-४ वर्षांनी भेट व्हावयाची ते ८-१० दिवस इतके गडबडीत जावयचे की, मनातल्या भावना

मनातच राहून गेल्या. पण तुझ्याकडून मात्र मी खूपच करून घेतले. १९८१ साली तू ब्राझिलला असताना अमेरिका हिंडून शेवटी ब्राझिलला मी व माझी बहीण शालूताई तुझ्याकडे गेलो, तेथे तू आमचे किती लाड केलेस सीमा नाही, दोन महिने राहून आम्ही माघारपण घेतले. रोज तू आम्हाला कुठे कुठे नेत होतीस. काय, काय दाखवत होतीस. ब्राझिलचा राष्ट्रीय खेळ फूटबॉल तर त्याची मॅचची तिकीटे काढली होतीस. ब्राझिल मधील टॉप सिंगरचे गाण्याचे कार्यक्रमांला गेलो होतो. थिएटरला चांगला पिकचर पाहिला. तिथला झू बघितला. तेथील टेकडीवरील येशू ख्रिस्त पाहिला. जवळच असलेले सुड्टीत पर्यटनाला जातात ते बेट जसेच्या तसे राखलेले पाहिले. तिथल्या सुंदर बिचेसना भेटी दिल्या. ब्राझिलिया हे राजधानीचे शहर पाहिले. सानपावलो शहर बघितले. इग्वासू फॉल्स हे अति सुंदर ठिकाण पाहिले. हे सारे पर्यटक बघत असतील.

पण तिने रिओला सोशलवर्क करणाऱ्या मूळच्या फ्रेंच असलेल्या पण मुखर्जी नावाच्या इंडियन माणसाशी लग्न करून रिओला गेलेल्या व तिथेच स्थायिक झालेल्या बाईकडे नेले. त्या वृद्ध बाई त्यांचे यजमान गेलेले पण एकट्या त्यांची स्मृती जपत राहत होती. १९४७ नंतर तिथे येणाऱ्या भारतीय लोकांचा त्या आधार होता. सर्वांना सर्वतोपरी त्या मदत करित असत. त्या बाईना भेटून मला धन्य वाटले. घराची सजावट इंडियन वस्तूंनी केली होती. आम्हाला इंडियन पदार्थ बटाटेवडा खाऊ घातला. माझ्या मुलीचे लग्न जमले आहे हे कळल्यावर स्वतः केलेली मण्यांची कमळे तिला gift म्हणून दिली. आज तीस वर्षांनंतर त्या बाईची आठवण झाली की, सुखद आनंदच होतो. त्या बाई ताकद होती तोवर तेथल्या स्लममध्ये (झोपडपट्ट्यांत) राहणाऱ्या लोकांना आरोग्यसेवा देत होती. खरोखर त्यांची कहाणी ऐकून व त्यांना पाहून धन्य झाले.

रिओला रहाणारे भारतीय त्यांच्या घरी दर रविवारी पार्टीला ती घेऊन जात होती. त्यांच्याशी ओळख करून देत होती.

तिच्या सहवासातले ते दोन महिने सर्वांत आयुष्यातील सोनेरी दिवस होते. खरोखर ह्या गुणी मुलीने भरपूर प्रेम दिले न्ह हळुवारपणे भावना सांभाळल्या. माझ्याबरोबर माझ्या नवऱ्यावर, माझ्या मुलांवर पुरेपूर

प्रेम केले. माझे आयुष्य समृद्ध केले. प्रेमाचा, अगत्याचा, आपुलकीचा वस्तुपाठ रजनीने मला शिकवला. वयाने लहान पण मायेने महान असलेल्या बेबीचा मला माझ्या मुलीसारखाच लळा लागला होता.

लग्नानंतर रिओला डॉक्टरांबरोबर ती गेली तिथे ती पोर्तुगीज भाषा शिकली व तिने स्कीन डिजीजचा कोर्स केला. त्यानंतर काही वर्षे सोशल वर्क म्हणूनच एका सेंटरवरती ती काम करित होती. ती M.B.B.S. होती पण इंडियन डिग्री असल्यामुळे पूर्णवेळ नोकरी मिळाली नाही. डॉक्टर ढेरे ह्यांनाही पूर्णवेळ तिने काम करणे पसंत नसावे. परंतु त्यांच्या P.A. चे आजारपणात अखेपर्यंत ती प्रेमाने करित होती. डॉक्टरांवरही तिने खूप प्रेमच केले. ती दोघे अगदी एक विचाराने रहात होती ह्याचा प्रत्यय खूप वेळा आला. माझ्या धाकट्या भावाचे अकाली अपघाती निधन झाले. रजनी अत्यंत हळवी व प्रेमळ होती त्यामुळे तिला बसलेला धक्का खूपच होता. त्याचा आघात तिला खूपच झाला. सारखे डोळे पाण्याने भरलेले. भावाच्या मुलांवर तिने मनापासून खूपच प्रेम केले. त्यांनी दुःख विसरावे म्हणून ती त्यांना ट्रिपला घेऊन गेली. त्यांच्या पुढील शिक्षण, लग्नकार्य ह्यातही तिने मनापासून भाग घेतला एवढेच काय पण भावाच्या नावाने कॉलेज सुरू झाले त्याला तिच्या सासूबाईच्या नावाने भरघोस देणगी देऊन दोन्ही कुळांचा उद्धार केला. तिचा सासरचा गोतावळा, तिच्या मैत्रिणी, तिची माहेरची माणसे ह्या सर्वांवर डॉक्टर नीळकंठ यांनीही तेवढेच प्रेम केले. तिच्याबरोबर शाळेत शिकलेले विष्णु खरे पुढे आमचे कुटुंबाचे गुरुजी झाले. त्यांना ती गुहागरला आल्यावर भेटत असे व अमेरिकेत काही धार्मिक गोष्टी करी त्यांची दक्षिणा पाकिटांत घालून ती देत होती. त्यांना नमस्कार करत होती. ते गुरुजीही तिला आराम पडावा म्हणून मनापासून शंकरावर अभिषेक करित होते. डॉ. नीळकंठ हे रजनी गेल्यानंतर गुहागरला आले होते. तेथे त्यांनी धार्मिक विधी, देवदर्शन तर केलीच पण गुरुजींच्या घरी जाऊन त्यांचे पायावर डोके ठेवून त्यांना पाच हजार रुपयाचे पाकीट दिले ह्याचे मला अप्रूप वाटले. तसेच आमच्या माहेरचे घर सांभाळणारे सद्दू, बाबू, तांबे, गिरिजा ह्यांनाही अशीच पाकीटे देऊन नमस्कार केले. ते पाहून मी धन्य झाले. खरोखर ते दोघे एकमेकांसाठी अनुरूप होते. त्यांनी तिला नक्कीच प्रेमच दिले.

- प्रमिला वैद्य, रत्नागिरी



---

# Memories of Rajani and Dada

---

- Towards the end of Zoom meeting organized to pay homage to the soul of Neelkanth, Ramesh made a request to participants to share their memories about Dada for a compilation he is planning to bring out. At that time I thought that I had so little contact with Dada, that I would not be able to contribute much. Last fortnight I had the fortune to go through a piece written by Milind, sharing his memories. A sentence in that article to the effect that “Atya and Kaka (Dada) were inseparable” got me thinking. Of course I could write something about my memories of Atya, Sucharita - Rajani for us. That would be memories of Dada too.

- I left Guhagar to shape my career in 1953, Rajani was at that time hardly ten or eleven. There after it was only once a year that I would be home. So I had only fleeting moments with the family. I was present for wedding of Rajani and Dada in 1970. In fact, self and Meena performed the religious rights of the marriage including “Kanyadaan”. That’s the first time I met Dada, a scientist as I had come to know. Then I was off to Dehradun where I was posted then. Rajani and Dada left for Brazil in that year I think, not sure. Of course, I was not there to see them off. But having read Milind’s account I can vividly imagine the scene.

- There after the contact was only through letters exchanged, and trust me the letters really were long. I think it was in 1974 that Rajani and Dada returned home for a brief visit. I was at one of the god-forsaken places in the North but I

had to get to Pune even if only briefly to meet them. I could manage a few days leave to come to meet them in Pune. Going back in time was really trying. Late George Fernandes had declared all India rail strike which was fairly effective but I managed to return in time somehow.

- Then was the most tragic event in the family, untimely demise of Taty, younger brother. Rajani and Taty had spent all their childhood together in Guhagar so they were very attached to each other. Milind describes the time very well when he went to convey the sad news to his Atya. I can imagine how shattered she must have been. She was very emotional and much involved with the family. Passing away of Taty was very disturbing to all of us. He was an example of how a person should maintain family bonds with love and concern for all. His involvement with family members was beyond description. Here I would like to point out one instance. In 1992 or was it 1993, he purchased a car Premier Padmini (Fiat as old people like me still recall). I was a bit surprised as a car was most unsuited for his work and environment, I mean Konkan with best of roads then. We never got to talk about it but my take is it was due to a scheduled visit of Rajani and Dada, so they could have a car with a driver to move around. Unfortunately, the scheduled visit could not take place. I am certain that my conjecture is correct as such was Taty’s concern and love for members of the family.



- Now that takes me to the wedding of Milind in US. Dec of 1995. I had gone to attend the wedding. Rajani and Dada were present and that's when I really got to know Dada and bonding of Dada and Rajani. After the wedding we travelled together by road from New Jersey to Florida. Dada driving all the way and Rajani sitting in front with maps and guiding. And of course, we were gossiping all the way. We had a halt at Ashok's place and one more in Washington DC. It was a very enjoyable trip which I shall never forget. I was also amused to get to know about subtle humour of Dada. Self and Rajani were in the area of White House strolling on the road and comes Dada from behind calling " Any sawari for memorial " . Firstly he had completely surprised us and it was very funny to hear the call.

- Two weeks that I spent with them were very enjoyable. Dada was busy in his work but me and Rajani spent gala time. Two of us went to visit Disney Land.

I had recently started a plastic manufacturing unit in Pune and just mentioned in passing that I would like to see a plastic small-scale unit. That got Rajani moving and she really started seriously fixing a visit. We went there at the appointed time and a funny thing happened. When we reached there the unit was closed and the owner had not yet reached. Rajani got really upset thinking that we may have to return without seeing the inside of the factory. She started scouting around and unknowingly started an alarm and we were in a fix as we could not stop it. But we were lucky as just then the owner came and switched off the alarm.

- I didn't get to enjoy the cocktails and the shrimps that Milind describes as both of them were off alcohol and non-veg.

- The next time was when I went to US in 2007. From Milind's place I went to Florida in Dec 2007. I had planned to stay for two weeks. This time was also enjoyable. We visited the neighbours. Rajani and Dada had excellent relations with all families around. I realised it was mainly on account of their loving, helping and caring nature. I am not sure if Rajani used her medical knowledge in advising. But if she had, it definitely would have contributed greatly in inter personal relations. It was at this time that she thoughtfully invited Vaidyas, a connection with Guhagar dating back to 1952-53. She was so concerned about giving quality time to others as far as possible even going out of the way. Invitation to Vaidyas was one such example. Actually I knew Mr. Vaidya fairly well. Rajani not so much because of age difference.

- Rajani did shopping extensively but it was seldom for her person. It was mainly for collecting gifts for family members back home. But she did collect good number of gift points and she was very particular about encashing the points. Some of the gift boxes were laying unopened. One such box contained a fruit juicer and I opened it. Then we both went and shopped for oranges and I made orange juice using the juicer. Both Rajani and Dada were thrilled to drink the juice. At that time Rajani was not all that in good health. But sadly, I was not aware that her end was not very far. In a way it was a good thing, ignorance is bliss.

- So that was Rajani and Dada for me, only sweet and endearing memories.

**Col. Sham Khare**



---

# Shri Dada (Dr. Neelkanth Dhere) A Unique Person

---

I am using a watch for about 25 years. It gives perfect timing. I feel happy to wear it. It serves the purpose of a time machine. It was given by Dada. It reminds me of the happy time I spent with him in USA and India also. This includes his wife, Dr Sucharita, who was his inseparable companion. They were a wonderful couple. We used to address her as Vahini. I have seen how much each cared for the other and also adored. She was a doctor (M.D.). She was his caretaker - cum-

secretary in his work. In short Dada was her “life Guard” who himself was under her ‘protective custody’.

For me, he will always be in our hearts.

We pray the almighty that the souls of dada and Mrs. Vahini be united and rest in peace in his kingdom forever.

- Appa Jiginni



---

# My dear Dada-Mama and Sucharita Mami

---

As I sit here to jot down a few points about Dada Mama, the rising sun cast a rosy hue and I feel the golden rays of sunlight pouring light and warmth through my windows. I feel my Mama's presence around me. I smile as I think of the numerous hours I spent with him trying to get some technology working – be it trying to train Dragon Naturally speaking to dictate His publications or emails, or trying to figure out some quirks on a Windows 98 application that collected data from the solar sensors and imported it into a spreadsheet. I remember my beloved Sucharita Mami telling him, but she is not your support person and he innocently looking at her and then me, “But she is, aren't you?”. Yes Mama, I am, and I will cherish the quiet moments we spent troubleshooting throughout my life.

I digress. This has been our whole family's state of mind since Dada Mama left us from his physical presence on earth. Every moment reminds us of him and mami, and all the memories come rushing by. When someone drops a rock into a still pond, ripples spread out in all directions, and this is just how life energies work. This is the way in which everyone touches those they know and meet, in small, subtle ways. The closer you are to the rock when it hits the water, the bigger the impact of the waves. Dada Mama, you spread waves of kindness and love to everyone around you. Your impact on all those you met was like the ripples when the stone hits the water. As far as people in this world are concerned, you were the big stone, sending out the ripples in all directions.

As I was staring at what to write, I remembered the Sanskrit verse that describes the Sun and I figured, this is probably the best way I can describe my Mama.

- Om Mitrav Namah  
(The friend of all)
- Om Ravaye Namah  
(All shining and radiant)
- Om Suryaya Namah  
(Who dispels the darkness)
- Om Bhanave Namah  
(The bestower of warmth)
- Om Khagaya Namah  
(Mover through the sky)
- Om Pushne Namah  
(The nourisher of all)
- Om Hiranyagarbhaya Namah  
(The golden source of energy)
- Om Marichaye Namah  
(The source of rays and vibration)
- Om Adityaya Namah  
(The son of Aditya - the divine mother)

- Om Savitre Namah  
(The stimulator and purifier)

- Om Arkaya Namah  
(The very essence of vitality)

- Om Bhaskaraya Namah  
(The illuminator of cosmic wisdom)

For me personally, I remember as a child whenever we visited Pune, he would make sure he called or wrote a letter to let my Aiji know to take us for ice cream and make sure there was a fun project. In Brazil, I remember the dolls that they got for me that I carried around everywhere. I was waiting for Santa Claus and so he waited until the last minute to put the gift under the tree and was up to see my reaction! He talked about it all the time.

As a teen, he has been one of the biggest influencers of my life. In the eighties in a small town in Dharwad, he gifted me and my brother a PC XT. We learned basic and when he visited us at that time, he told me, you should go into Computer Science. And my parents got me into a class in Basic and there hasn't been looking back. He was the biggest influencer in terms of the line of work I chose, and I am forever grateful to him.

As a young adult, I got to spend a lot of time with Dada Mama and Sucharita Mami. My memories of Dada Mama as a child were always glamorous – loads of gifts, loads of fleeting visits where he would be busy presenting about Solar Energy

or pursuing social causes and lots of parties with families and friends. When I was doing my Masters in Orlando, I got to see him and Mami in a completely different light. They both embodied simple living, great thinking. He always came back home and had evening chai with Mami and never skipped that when he was home. Every single day, they'd sit together and have their evening tea. The love they both had for each other is legendary. Unconditional. He also had a very good sense of humor and especially when he was around family, he'd tell stories about their travels making all of us laugh hysterically. I remember during a cruise we went to with family, he had so much fun on New Year's Eve – whistling loudly in the crowds as we welcomed the new year! Mihika and Ruhika had so much fun with their Florida Ajjaree. They still talk about their numerous visits to meet family either at their home or one of our other Mama-Mami's homes. They fondly cherish their visit to Mexico on a cruise. We cherish his generosity and larger than life presence – always lifting anyone he came in touch with.

Dada Mama was dedicated to his family, his research, his students and what I saw in him was an embodiment of sincerity, love, kindness, generosity and service. As such, I see him more as a stone skipping on the water creating ripples that each became a stone to create its own ripples. Thus, he spread positive energy wherever he went.

As another firstborn, and as mama's niece, I have an amazing example that I can follow and continue his legacy.

**- Harsha Bennur**



---

# To my Dearest Sucharita Aunty and Neelkanth Uncle

---

Sucharita Auntie and Neelkanth Uncle were two of the kindest people one could have the pleasure of knowing. They were always warm, welcoming, and giving. My fondest memories from childhood were during their visits. Their smiles and laughs during their storytelling would always light up the room. They were also so gracious to bring some of my most cherished toys including Crystal Barbie with her Corvette and a Nintendo. I loved the many shirts that they would bring

me from their travels. They also made sure everyone in the family was looked after and had the opportunity for a good education.

They will forever be in my heart and memories. To my dearest Sucharita Auntie and Neelkanth Uncle, you lived together in happiness, now may you rest together in peace.

- **Tanvi Dhere**



---

# Dada uncle – Catalyst of Advancement

---

Rarely does an individual create a wake so large they pull forward their family, friends, colleagues, and an entire field of academia forward. That was my Dada uncle. He lived a life with such force the world changed around him. Every story I have ever heard about my uncle is another instance of the loving, selfless, and driven man that blessed each of our lives.

When I tell the story of how my family came to the US it always starts with Dada uncle. From the time he could not afford his own textbooks and had to copy them by hand, to the days he pushed and supported my father (and all the Dhere siblings) to achieve their own doctoral degrees, my uncle always had a vision. His prescience is the reason my brother, my cousins, and I have been given a chance to create successful lives for ourselves.

He was equally committed to his family; after completing his own PhD he would not settle until every one of his brothers and sisters also gained doctoral degrees (with a Guinness Book of World Records certificate to commemorate his efforts). It is truly remarkable that a single person could fundamentally transform everything in his vicinity.

However, academic achievements do not do justice to the impact Dada uncle and Sucharita aunty have had in our lives. One of my earliest memories was visiting Florida each summer and staying with my aunt and uncle. Each visit we would go to Cocoa Beach, visit NASA, pick fruits from their trees, and squeeze our fresh orange juice each morning. Even for winter break our whole family would come together at their home in Florida and these are some of my fondest memories.

I wish I could have been older when Sucharita aunty passed. To this day, I remember her as the shining light in my uncle's eye. They never thought of themselves and lived the humblest of lives. They loved to shower those around them with gifts rather than spending on themselves. I always imagined this generosity was directed to our family, but I was naïve. After hearing the great number of stories at Dada uncles' memorial service, I gained a small appreciation for the countless lives they both touched.

There are countless stories of his compassion, dedication, leadership, and love. All I can say is I am forever grateful to have lived a life in his wake.

- Vishal Dhere



---

# Memories of my Kaka and Atya

---

My aunt (I always called her Raju Atya since my childhood even though she went by Sucharita after she got married) was the closest relative I had when I came to the United States in August 1987. She and Neelkanth Kaka were inseparable in my mind - their devotion to each other which I experienced in spades from Aug 1987 and Kaka's devotion to her memories after she passed away was so touching to see and experience. In many ways I don't think he ever recovered completely from her passing - he was never the same again the several times I met him over the years.

My first real memory of the two of them if memory serves me correct was in 1970 at Santacruz Airport in 1970. I was 8 and was at the airport to see the 2 of them off as they left for Brazil. It all sounded so exotic to me back then - the 2 of them were going to be the first people I knew that did not live in India and that thought just blew my mind. I remember them walking on the airport tarmac and then climbing up the steps to the plane late one evening (no jet bridges back then!) and the rest of the family waving them good bye from the visitor gallery.

My aunt then started writing us letters (she wrote long ones!) about once every 3 or 4 months - I would wait eagerly for those letters as a small kid and marvel at the life she would describe in Brazil - there is a photo of the 2 of them

on a beach in Rio (both of them so young and poised) that I think she sent in one of the letters that still remains etched in my mind. I think that was the first time I'd seen a color photograph and it's vibrant colors left a deep impact in my mind.

After I came to the United States in 1987 for grad school, I remember the 4 or 5 weeks in the summer of 1988 that I spent in Golden CO with the 2 of them. Ramesh was in Boulder as well during that time and would come by on some evenings. Atya and I would see Neelkanth go off to work at 9 AM - he was not a morning person so it was always a challenge for him to get up, get ready, and go off to work but he compensated for leaving later in the morning by working late into the evening and on most nights he would continue to work after dinner. This was the first time I got to experience Caipirinha with the two of them in Boulder - Kaka would come home in the evening and ask tongue-in-cheek if we were all ready to drink like the Brazilians - Atya would cut the lime and then he would pour Cachaca and then muddle the lime with sugar and we'd all have a cocktail to start the evening. And then after a cocktail the stories of the times they had in Brazil would start to flow - the stories would be endearing of how Brazilians liked to party, of their enormous zest for food, their attitude (or lack thereof) towards work, and how much they cared about spending quality family time. I could see in those stories that both of them missed Brazil terribly and if it were

not for the economic/political circumstances in that country that had them move to the United States they probably would have continued to stay in Brazil for the rest of their lives. They missed the strong social bonds and friends they had in Brazil and I don't think they ever made up for those in the United States.

Kaka loved his laptops and he would tinker with his PC constantly - he was always trying to improve his productivity and eagerly sought software programs that he thought would help him in this regard. He was one of the first users I had seen of "Dragon Naturally Speaking" and he spent a lot of time training that software so that the program would convert speech to text for him. I don't know that he was ever satisfied with how that program worked for him but he had infinite patience for it. I also remember talking to him when he had to buy a new laptop every 3 or 4 years - discussing the merits of one machine over the other (I had started working at Intel in 1995 so he thought I obviously must know a lot about Intel chips!) and which Intel chip to buy in his laptop. One cycle I think the choice was between a Sony PC and an HP or Compaq PC and I think the Sony won that face-off.

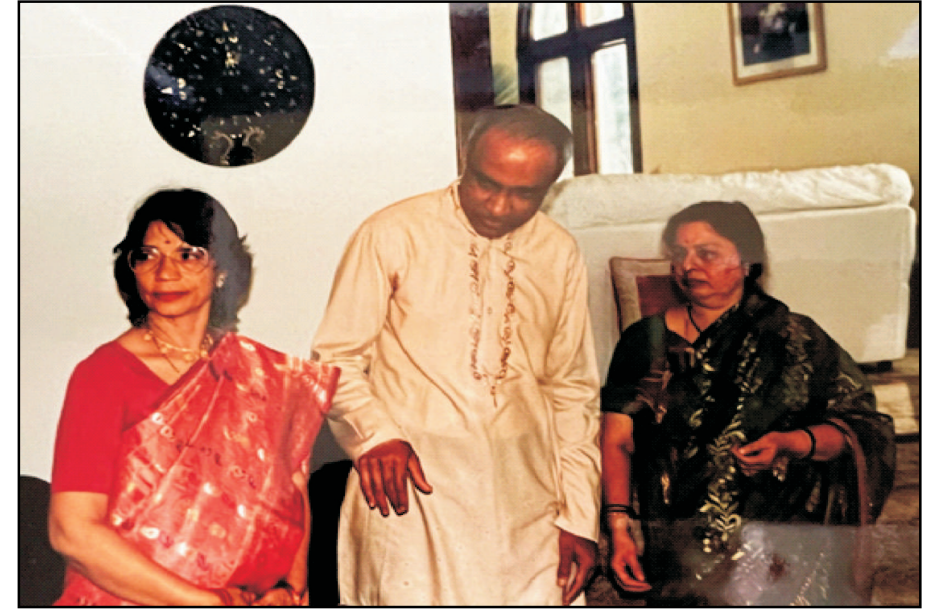
In those early years in the United States they both loved parties, loved to have a good time, were gregarious and enjoyed food - I remember shrimp stroganoff being one of Kaka's favorites. My aunt would prepare it that summer I was in Boulder and we'd all enjoy it with rice after the Caipirinhas. The years rolled by and I had a regular Saturday morning phone call from my atya without fail every week. We would chat for about 30 min or so and sometimes if Kaka was around and not working he'd join the conversation as well.

In 1993 I saw a remarkable transformation in both of them. That was the year when we had a family tragedy on the Khare side of the family - my uncle (my atya's younger brother) and my uncle's wife both passed away in an incomprehensible and violent act. This impacted my aunt (but Neelkanth Kaka as well) very deeply and they spent years afterwards until my aunt passed away in 2008 doing every thing they could to care for my cousins who were all relatively

young when they lost their parents. They both gave up alcohol and non-vegetarian food - I still remember the discussion with both of them in Merritt Island when they told me of their decision and the remarkable commitment they showed - Kaka who liked his chicken, shrimp, and caipirinhas then never touched meat or alcohol again. I remember flying to Merritt island from New Jersey where I lived back then to deliver the news of my uncle and aunt passing away to her in person. She was very close to her younger brother. I was given the task to deliver this news to her and when I called to talk to Neelkanth hoping he would be there and realizing that she was alone at home and Neelkanth was in Brazil on a business trip. I took the first flight that afternoon and then spent the next 3 days with her until Neelkanth Kaka made his way back from Brazil were some of the saddest of my life - my aunt was inconsolable and almost catatonic. There was nothing I could do to give her comfort until Kaka arrived.

There are so many memories of them - of the time they loaned me money for a down payment of my house, to the times that Neelkanth kaka and I would spend hours talking (with my aunt hovering in the background as she would get very nervous when Kaka had "work problems") about the people issues he was having at work with the "management" and the bureaucracy. He did not tolerate fools well and would be very forthright (and correct in his trenchant observations I might add) in calling "management" to the carpet but would then get unjustly a reputation of "not being easy to work with" which he and I would spend time strategizing on how to fix. These conversations started to happen about once every year once I got my MBA in 1995 at which point he assumed that I "knew" something about how to work with "management" since I must have learned something in my MBA and would seek my "expert" counsel - these talks demonstrated a core quality in him - if he realized he did not know something he was not bashful about seeking help even if that "help" was from a nephew 30 years his junior who had barely seen much of corporate America at that point. It did not matter to him - he was never haughty about being one of the top scientists





in PV and he was secure in himself to admit what he did not do well and sought help from anyone he thought could offer it. He was devoted to his work and really he did not need any outside hobbies - work and being married to my aunt fulfilled him completely.

His devotion to his siblings and his mother was something to behold - I recall the elaborate planning my aunt describe to me of the Kashi trip that the two of them took “Dhere aji” on - it was on Dhere aji’s bucket list and there was nothing Neekanth kaka would not do for his mother.

They were a perfect pair - made for each other - they took so much care of each other and complemented each other well. They never had children of their own (my aunt once described this to me as something they did not think about much in their 30’s/40’s but both decided in their 50s that it was too late to adopt) but poured all their love and devotion to their respective siblings and the larger extended family of nephews and nieces.

I am an atheist at heart but for their sake I hope there is life after death and that they are now finally together with each other. I miss them both terribly.

- **Milind Khare**



# श्रद्धांजली

ऑगस्ट २०२१ मध्ये ढेरे काकांचे निधन झाले आणि त्याबरोबर ढेरे काका आणि रजू आत्या हा माझ्या आयुष्यातला एक आनंदाचा, प्रेमाचा व मायेचा ठेवा संपला. पण त्यांच्या आठवणींची स्मृतीचित्रे पुढील वाटचालीत प्रेरणा देत राहतील.

रजू आत्या व ढेरे काका यांच्या निधनानंतर सुखद भूतकाळाला जोडणारी एक साखळी तुटली आहे असेच वाटते. त्यांच्या पिढीतील कुटुंबातली माणसे आता हाताच्या बोटार मोजण्याइतकी राहिली आहेत. ह्या सर्वांनी सन १९९३ मध्ये आमच्या आई-वडिलांच्या अकस्मात निधनानंतर आम्हा तीनही भावंडांवर मायेची पाखर घातली. कित्येकांनी आपापल्या संसारात तडजोडी करून आमच्या शिक्षणाची व आम्हाला आमच्या पायावर उभे करण्याची जबाबदारी आनंदाने उचलली. आयुष्याच्या प्रत्येक टप्प्यावर, वळणावर ही माणसे सतत हात धरून बरोबर राहिली व अजूनही आहेत. ह्या सर्वांमध्ये रजू आत्या व ढेरे काका ह्यांचे माझ्या उच्च शिक्षणात अतिशय मोलाचे योगदान आहे. किंबहुना केवळ शिक्षणाच्या जोरावरच कुठल्याही परिस्थितीला सामोरे जाता येते हे संस्कार ढेरे काका व रजू आत्याने केले.

रजू आत्याची सर्वांत जुनी आठवण- तिने अमेरिकेतून भारतात येताना आणलेले कपडे, खेळणी, कुटुंबातल्या प्रत्येकासाठी एक तरी वस्तू, कपडा ती आणायची. ह्या सर्व वस्तूंना एक वेगळाच मन प्रसन्न करणारा सुगंध यायचा, तो आजही मनात दरवळतो. प्रत्येक भेटवस्तूला एक स्कॉचटोपचे लेबल व त्यावर नाव असायचे. भारतात यायच्या आधी काही महिने तिचे एक पत्र यायचे. त्यात कुणाला काय पाहिजे ह्याची विचारणा असायची. मग बाबा पत्राच्या उत्तरात आमची यादी पाठवायचे व त्याप्रमाणे सर्व गोष्टी ती न चुकता आणत असे. मी एकदा तिला रिमोट कंट्रोलवर चालणारी कार व एक विमान मागितले होते. पुढे अमेरिकेत शिक्षणासाठी गेल्यावर माझा हा बालहट्ट पुरवण्यासाठी तिला कित्येक दुकाने पालथी घालवी लागली हे तिने हसत हसत सांगितले. अशा अनेक सुखद आठवणींचा खजिना तिने सढळ हस्ते वाटला. शेवटी समृद्ध आयुष्य म्हणजे अशा चिरंतन आठवणी, अनुभव, क्षण ह्यांचे

एक गाठोडेच म्हणावे लागेल. पण अशी दुसऱ्यांचे आयुष्य समृद्ध करणारी मागील पिढीतील माणसे आता नाहीत याची हुरहुर मनाला लागते.

१९९७ साली इंजिनिअरींगला असताना मी अमेरिकेत एम. एस. करायचे ठरविले व तशी तयारी सुरू केली. त्यावेळी आत्याला आनंदही झाला, पण मला जमेल की नाही अशी किंचित शंकाही तिला होती. त्यावेळी ढेरे काकांनी मात्र उत्साहाने सर्व प्रकारे मार्गदर्शन सुरू केले. त्यांच्याच सल्ल्याने मी गुहागरजवळ सुरू असलेल्या एन्ॉन प्रकल्पात समर इंटरनॅशनल केली. जेणेकरून त्याचा एम.एस. च्या प्रवेशासाठी व शिष्यवृत्तीसाठी उपयोग होईल. योगायोगाने मला फ्लोरिडातल्या यू.सी.एफ. मध्ये शिष्यवृत्तीसकट प्रवेश मिळाला व तेथील ३ वर्षांत रजू आत्या व ढेरे काकांचा अतिशय जवळचा सहवास मला मिळाला.

१९९९ ते २००२ ह्या ३ वर्षांत बरेचसे शनिवार-रविवार मी त्यांच्या मेरिट आयलॅण्डच्या घरी जात असे. सुरुवातीला माझ्याकडे ड्रायव्हिंग लायसेन्स नव्हते. तेव्हा मला आत्या शुक्रवारी संध्याकाळी ऑरलॅण्डोला आणायला येत असे व रविवारी परत सोडत असे. परत सोडताना पोळी-भाजीचा डबाही देई. नंतर तिनेच मला गाडी चालवायला शिकविले. पण रस्त्यावर लेन बदलताना आधी मागे वळून कुठली एखादी गाडी ब्लॉईड स्पॉटमध्ये नाही ना हे पाहण्याची सवय मात्र ढेरे काकांमुळे लागली ती आजतागायत टिकून आहे.

शनिवारी सकाळी मला त्यांच्या बागेत काम करायला आवडायचे. मग समोर राहणाऱ्या नेल बाईही बागकामातले सल्ले घायला यायच्या. फ्लोरिडात बऱ्यापैकी ऊन असायचे. मी उन्हात काम करू लागलो की, काका आत्याला सांगायचे तू त्याला बागकामाचे काही सांगू नकोस नाहीतर तो आपल्याकडे यायचा नाही. त्यांना दुसरी एक मजेशीर काळजी म्हणजे माझा मुळचा सावळा रंग जर अजूनच गडद झाला तर मला चांगली 'सुबक टेंगणी' कशी मिळेल? ह्यात 'सुबक टेंगणी' हा पु. लं. च्या 'म्हैस' ह्या कथेतील संदर्भ असे.

आत्याचे सर्व शेजाऱ्यांबरोबर छान संबंध होते. घरासमोर एक सॅम व मेरी हे वयस्कर जोडपे होते. एकदा आत्याने मला त्यांच्याकडे नेले व मग आम्ही सॅमकडून सेकंड वर्ल्ड वॉर मधील त्यांचे अनुभव ऐकले. सॅम हे यु. एस. एअर फोर्सचे पायलट होते. युद्धात त्यांचे विमान नाझी सैन्याने पाडले. सॅम मात्र पॅराशूटने सुखरूप जमिनीवर आले. नंतर मात्र नाझी सैन्याने त्यांना अटक केले. हा सर्व अविस्मरणीय अनुभव आत्यामुळे घेता आला.

रॉन हे एक दुसरे यु. एस. एअर फोर्सचे पायलट त्यांचे शेजारी होते. त्यांचे एक छोटे विमानही होते. एकदा रॉन म्हणाले की, मी तुला विमानातून राईड करवून आणतो. मला खूपच नवल व आनंद झाला. पण ढेरे काका मात्र काळजीत पडले. न जाणो काय झाले तर ही त्यांची रास्त काळजी. पण मग आत्याने त्यांची समजूत काढल्यावर मी रॉनच्या विमानातून अनेक वैमानिक कसरतींचा (Aerobatic Maneuvers) थरार अनुभवला.

ढेरे काका त्यांच्या संशोधनात अखंड बुडलेले असत. त्यामुळे आत्याच सर्व कुटुंबियांचे, घरी येणाऱ्या पाहुण्यांचे आदरातिथ्य हौसेने व प्रेमाने करी. आत्या दरवर्षी फ्लोरिडातील आंबे, संत्री, अमेरिकेतील नातेवाईक व स्नेह्यांना आवर्जून पाठवित असे. मुंबई, पुणे व इतर ठिकाणी स्थायिक झालेल्या नातेवाईकांना दरवर्षी मे महिन्यात आंब्याच्या पेट्या पाठविण्याची पूर्वी गुहागरला पद्धत होती. रजू आत्याने हा माहेरचा वारसा अमेरिकेत मोठ्या हौसेने चालविला.

ढेरे काका दरवर्षी डिसेंबर महिन्यात त्यांच्या साऱ्या कुटुंबियांना, जगभर पसरलेल्या स्नेह्यांना व संशोधनातल्या सहकाऱ्यांना एक पत्र पाठवित असत. त्या पत्रात सरलेल्या वर्षातील व्यक्तिगत व संशोधनातील विशेष घडामोडी यांचा आढावा असे व त्याबरोबर येणाऱ्या नववर्षासाठीच्या शुभेच्छा

असत. अशी शेकडो पत्रे ते मराठी, इंग्रजी व पोर्तुगीज भाषेतून पाठवित. मला वाटते हा एक पब्लिक रिलेशनचा उत्तम दाखला आहे. त्यातून त्यांची माणसे जोडण्याची तळमळच दिसून येते. मराठीत कौटुंबिक पत्रांचा शेवट मोठ्यांना नमस्कार आणि लहानांना आशीर्वाद (थोडक्यात मो.न.ल.आ.) असा करतात. पण ढेरे काका मात्र घरातील रांगणारी मुले ते काठी टेकून चालणारे वयस्कर या सर्वांचा योग्य त्या सॅल्यूटेशनने नावानिशी उल्लेख करीत. मला वाटते हाडाचा संशोधक असल्याने व्यक्तिगत आयुष्यातही लेखनातील कोटेकोरपणा त्यांनी जपला.

ढेरे काकांनी अतिशय प्रतिकूल परिस्थितीत स्वतःचे व सर्व भावंडांचे शिक्षण पुरे केले. त्या जोरावर कुटुंबाचे व पुढे अनेक विद्यार्थ्यांचे आयुष्य समृद्ध केले. शिक्षणाच्या तळमळीतून त्यांनी गुहागर येथील कॉलेज व देवखेरकी (दोन्ही जिल्हा रत्नागिरी) येथील शाळेला सढळ हस्ते मदत केली. ह्या दोन्ही ठिकाणी सामाजिक व आर्थिकदृष्ट्या मागासलेल्या शेकडो मुलांचे उज्वल भविष्य आज घडत आहे.

ढेरे काका व रजू आत्या या दोघांनी आयुष्यभर त्यांच्या संपर्कात आलेल्यांना भरभरून दिले. अनेक संस्कार केवळ आपल्या आचरणातून केले. त्यांचे देणे देखील असे की, उजव्या हाताने दिलेले डाव्या हाताला कळू नये. “**देणाऱ्याने देत जावे घेणाऱ्याने घेत जावे, घेता घेता देणाऱ्याचे हात (म्हणजे दातृत्व) घ्यावे**” असे म्हणतात. आज ढेरे काका व रजू आत्या दोघेही नाहीत. पण त्यांच्या आयुष्याने नातेवाईक, परिचित, शेकडो विद्यार्थी यांचे आयुष्य उजळून निघाले. त्यांनी स्वतः घेतलेला व अनेकांना दिलेला शिक्षणाचा वसा समाजात सर्वदूर पोहचविता आला तर त्यांना नक्कीच आनंद होईल व तीच खरी श्रध्दांजली ठरेल.

- मकरंद खरे



---

# Dr. Neelkanth Dhere : A Tribute to a Respected Scientist, Technical Leader and a Friend- A Focus on the 1980s and Life and Solar PV in Brazil

---

It was in 1983 that I first had the opportunity to meet Neelkanth. In this period, there was a collaboration between the U.S. American Vacuum Society (AVS) and the Brazil counterpart, *Sociedade Brasileiro de Vacuo*. John Thornton, an early thin-film PV pioneer in the U.S. had been President of the AVS—and was an invited speaker as part of the US-Brazil collaboration at the 1982 “Congresso.” John, a colleague in PV research while I was at the early stages of the U.S. Solar Energy Research Institute (later becoming NREL in 1991), asked if I could visit Brazil, participate in the next-year 1983 meeting and spend some time with the PV research group headed by Neelkanth at the Instituto Militar de Engenharia (IME) in Rio de Janeiro. It was a great opportunity for me—and started a collaboration that extended over the next almost 4 decades. Let me stress that this note focuses on my personal experiences in that early period in Brazil, but Neelkanth was a world leader in photovoltaics, materials science, and education.

Neelkanth was just the model host. He made the hotel arrangements, met us at the airport, provided us with recommendations for restaurants and tourist visits, made sure we understood security and hosted us many times at his home with his wife Sucharita. In this first visit, I was supported through the Organization of American States (OAS)—all arranged by Neelkanth himself. He was just tireless in his research and in his collaborations. During my subsequent visits, Neelkanth hosted prestigious scientists and AVS presidents including Dr. Ted Madey, Dr.

Rey Whetten and Dr. John Colburn. Neelkanth had great stories about them all! And all respected Neelkanth, who was an international leader in research and professional societies (the IUVSTA in addition to the SBV, AVS, IEEE, MRS, SPV . . .)

In that first visit, I gave a couple talks at the Brazilian conference and gave some lectures at a solar cell course designed by Neelkanth. The AVS president could not schedule the visit to Brazil that year—and I ended up representing the Society. But this was the model for the next 3 visits I made to be with Neelkanth over the coming 3 year: Congresso, course, work with him and the group in his laboratories at IME, and a great deal of food/alcohol consumed on Copacabana!

Neelkanth put together an incredibly productive and expert research group—shown in Fig. 1 without an important member, his brother Ramesh Dhere (who took the photo). Neelkanth was way ahead of his time, with almost half of his research staff women scientists. Figure 2 shows two lab leaders, Maria Cristina Lourenço and Leila Rosa de Oliveira Cruz (*why do Brazilian women have so many names, while males playing “futebol” typically have one—Neymar, Ronaldinho, Hulk, Fred?*). Cristina later got her Doctorate in Biophysics, and Leila in Material—and is the current Director of the Laboratory at IME that Neelkanth founded. They are picture in Photo 2—a photo taken in about 1984, and with Neelkanth and this author in Photo 3! I know that Neelkanth and his family are in the Guinness



Book of Records. But they should have recognized him for one additional one: Neelkanth managed the last significant world research program on  $\text{Cu}_2\text{S}/\text{CdS}$  solar cells! It was marvelous—and attracted the attention of many who wanted to give this technology a chance (Dr. Werner Bloss and Dr. Hans Schock from Germany, Dr. Karl Böer from IEC in the U.S., and Dr. Kazmerski . . . ). His laboratory soon switched to other PV technologies, becoming leaders in CIGS, InP, and CdTe thin films. His career is highlighted by many contributions to PV materials, devices, reliability, and education.

Neelkanth was impressed with my interest in running—and he himself started



**Photo 1.** Neelkanth and his research group in 1984 in one of his IME labs in Rio. Left to right: Neelkanth, Maria Cristina, Kaz, Carlos, Leila, Helio (Vasco!), Rosangela, Iraní and graduate research student, Camillo. Notice the vacuum systems for CdS and InP deposition in the background! Leila, Carlos, and Iraní are still at IME, and Dr. Leila heads the PV research now, having been mentored by the guru himself, Neelkanth! Photo was taken by Ramesh!



**Photo 2.** Neelkanth's "Researchers," Cristina and Leila in 1983, thinking of  $\text{Cu}_2\text{S}$  and  $\text{SnO}_2$ !



**Photo.** Neelkanth (with liquid!) on right hosting the "Researchers" and the intruder (1984).

this pursuit and participated in both IEEE PVSC and AVS runs in the U.S. But in my third visit to Brazil, I told him that I wanted to run the 1/2 marathon, "Niterói até Rio", across the magnificent bridge that spanned the harbor. Before my visit, Neelkanth entered me in the race, made me part of a team with a special shirt, and entered me as part of a training run a week before the "big race". I managed to aggravate the race director for that training event (Photo. 4a) by taking two



**Photo 4.** Neelkanth arranged for the author to compete in this 9 Km training run prior to the “Meia Maratona de Niterói até Rio” in 1985. Photo by Neelkanth at the start in Leme of author still looking happy.



**Figure 5.** This photo has a world-class runner, and it isn't Neelkanth, Tim Coutts, Sucharita, or Lawrence Kazmerski. She was the wife of the sports writer for “Jornal do Brasil”—and he took this photo. (Notice the twin elegant ties sported Tim and me!)

waters at the 5 Km point, when only one was allowed. (The heat and humidity were a bit uncomfortable in Rio at 2 pm!) I can still hear him significantly “increasing my português vocabulary” as I ran away! Neelkanth took a photo of me at the starting point (Photo. 4b), still looking happy. But the story does not end with that. The next evening, Neelkanth for some ungodly reason arranged a dinner for Tim Coutts, who I dragged from SERI to be part of the technical activities. (*Tim, I found out was an expert in alcohol fuels, particularly in the consumption of ones brewed by Antarctica and Brahma! Something that Neelkanth fostered!*). I was shocked that Neelkanth also invited the sports writer for “Jornal do Brasil” and his wife, who was a world-class runner. I think they expected to meet some accomplished U.S. athlete, but instead were introduced to me Photo. 5)! Worse yet, this was the same person who admonished me so loudly and colorfully for taking that extra water! He asked if he had met me before . . .

The half-marathon went well (except Helio Moutinho and his parents invited Neelkanth, Sucharita, Tim, and me to their home for a special Brazilian feast the day before the big run. I can attest that “feijoada completa” is not conducive to exercise of any kind! And Neelkanth did want to capture my accomplishment. While coming to almost the middle of that very long bridge, I was curious that

there was no traffic coming in the opposite direction. The blowing of horns, though common in Rio, was a bit more noticeable than usual. Ahead, I saw the reason. There was Neelkanth, standing on the top of his car with a camera—waiting for me to appear and not worried at all about blocking all that traffic and creating all the noise. I tried to position myself in a small group of runners so that hopefully no one would associate me with this rather crazy Indian, smiling as he aimed his camera aimed at me and yelled “Kaz, Kaz, Kaz”! This was just typical Neelkanth!

He was also an avid “futebol” fan. We made several memorial visits to Maracanã, a stadium at that time that could seat 200,000 fans. Photo 6 shows the Rio cup qualification between Fluminense and Vasco (Helio’s and my team!). Neelkanth was “Botafogo”, a team that was not very good at that time and had uniforms that looked like prisoners. But he was loyal.



Neelkanth was a colleague and a friend. He spent a sabbatical at SERI before he took a position at the Florida Solar Energy Center (FSEC). SERI and NREL benefitted from the Neelkanth collaborations. Both Leila and Cristiana spent research visits to the Laboratory, and the Laboratory (SERI/NREL) stole two key scientists (actually, Neelkanth mentored and graciously facilitated their professional development): Ramesh Dhere (who was a major part of NREL building a U.S. CdTe PV technology) and Helio Moutinho, who still heads several materials characterization operations at NREL! And Dr. Leila has been a part of



**Photo 6.** One Neelkanth outing to Maracanã to experience Rio futebol! The violence has already started only 16:58 into the Rio Cup semifinal between Fluminense and Vasco. Vasco won, but the star player, Roberto, was given a red card near the end of the game. With this, he could not participate in the final! A scandal. But without Roberto, the crowd size and the revenue would be decreased significantly. So there was a decree (I think from the Pope) midweek to reinstate him. Vasco won the cup, just as Helio and I predicted—and Neelkanth said “Botafogo next year”.



**Photo 7.** Neelkanth and Sucharita in one of their favorite activities—hosting international visitors to introduce them to his co-workers and students—and Brazil. So many in the world community have memories of working with Neelkanth and benefiting from his and Sucharita’s extraordinary hospitality and friendship.

my recent research projects in Brazil. During all the time I was privileged to know, work with, *and play* with Neelkanth, he was a serious and respected scientist who really wanted PV to be part of our world energy scheme—and more important, he was always a respected *gentleman*. The final photo (Photo. 7) shows Neelkanth, Sucharita, and me at one of his many hosted parties. He loved to have fun. He and Sucharita always had time to make sure you were happy. All of us miss both of them, but they both influenced us and their memories are imbedded permanently in our minds.

Thank you, Neelkanth.  
- Kaz (Lawrence L. Kazmerski)

---

# In Memoriam : My friend who always strived to make life better for those who knew him

---

I met Dr. Dhere in 1966 at IIT Bombay in Powai. He was my next-door neighbor at Hostel # 1. He was a Post-Doc and I was studying for my M.Tech. We became good friends.

Dr. Dhere left IIT Bombay to join Dr. Vikram Sarabhai's Physical Research Laboratory (PRL) in Ahmedabad later that year. I was in the process of finishing my M.Tech thesis. He got in touch with me and recommended that I apply to PRL for a job as an Electronics Engineer.

I did. And I got the job which was to change my career forever.

Dr. Dhere arranged for me to share an apartment with him and another PRL colleague. We were roommates for about two years.

During my stay at PRL, he was a friend and mentor, always available to discuss technical and career issues. He was in charge of the Techniques Lab and built an impressive system for evaporation and sputtering of various thin films.

I was in charge of the Electronics Lab which supported maintenance, repair, test and calibration of various electronic equipments.

We attended many meetings together, and met distinguished visitors such as Nobel Laureate Sir C.V. Raman and Dr. Abdul Kalam who later became India's President.

I left PRL in 1969 to join Drexel Institute of Technology (now Drexel University) in Philadelphia, USA, for my Ph.D. studies. Dr. Dhere left for Brazil

in 1970. He was a professor at the Military Institute of Engineering in Rio de Janeiro for many years until he moved to the U.S. in 1986.

We kept in touch over the years. He visited me in Philadelphia in the 1970s. He and his wife Sucharita visited my wife Linda and me at our home in Pennsylvania from Brazil in 1984. Once he moved to the U.S. in 1986, Linda and



L to R – Neelkanth, Sucharita with Marc, Linda with Jay and Suhash



I visited them in Colorado with our two sons. He and Sucharita then moved to Florida after he joined the Florida Solar Energy Center (FSEC) in 1990. FSEC was a part of the University of Central Florida (UCF). We met them in Orlando several times when we visited Disneyworld. I also remember driving to Merritt Island to visit them at their home when I was in Florida for a conference.

He also liked to write to us about his career and personal life. Three UCF students were completing their M.S. with him in 1991; He would be teaching post-graduate courses on Materials Science and Diffusion of Solids; He had completed a book chapter to be published in “Physics of Thin Films” in 1992; He and Sucharita had started jogging 10km three to five times a week; They got their Green Cards in November 1992, and planned to visit their families in India in May of 1993...

I took great pride in his accomplishments at UCF over the years. He mentored many M.S and Ph.D. students. I remember how pleased he was to see his students end up working for semiconductor industry leaders like Intel and Applied Materials.

His expertise in thin films and especially photovoltaic cells was without parallel.

He was invited to speak at many conferences all over the world. I remember finding a postcard from him from Yugoslavia in a box of old mail.

I used to organize and chair semiconductor-related conferences in Silicon Valley (CA) during the 1990s. I took advantage of our long friendship to invite him to give a talk. It was so well received that some German attendees wanted to meet with him later that evening for more discussions.

He continued to thrive at UCF and was busy with many projects and speaking engagements. We kept in touch by phone over the years.

The last time I saw him in person was in 2014 when he called me one Sunday morning and invited me to lunch with him and his relatives at an Indian restaurant outside Philadelphia. He was in town to celebrate a relative’s graduation.

His passing leaves a deep void in my heart. He was such a caring person with empathy and understanding. His background and education made him a natural leader and teacher. He enriched many lives and his legacy will be remembered by all those who knew him.

**- Dr. Subash Khadpe**  
Slatington, PA



---

# Memories of Neelkanth Dhere

---

I knew Neelkanth as a friend, coworker, and an eminent scientist, over several years in Brazil and United States. He has had a pivotal influence in my scientific career in applying my background in nuclear physics to characterization of materials in the near-surface region. It resulted in many collaborative research publications with Neelkanth.

He pioneered research in thin films at the Institute of Military Engineering in Rio de Janeiro. During his years of work in Brazil, he was the founder-president of the Brazilian Vacuum Society, and organized courses and symposia in Materials research and Vacuum Technology, annually. He also took the initiative in publishing the Brazilian Journal of Applications of Vacuum, as the first editor.

Neelkanth is well known for his research contributions in the field of Photovoltaics, presenting his work in several international conferences. He has supervised many graduate students, including students in U.S. from Brazil and India, towards obtaining their Master's and Doctoral degree. It is the work that he enjoyed, which also provided an outlet to spend his time, especially after cancer took away the person whom he loved the most – his wife Sucharita.

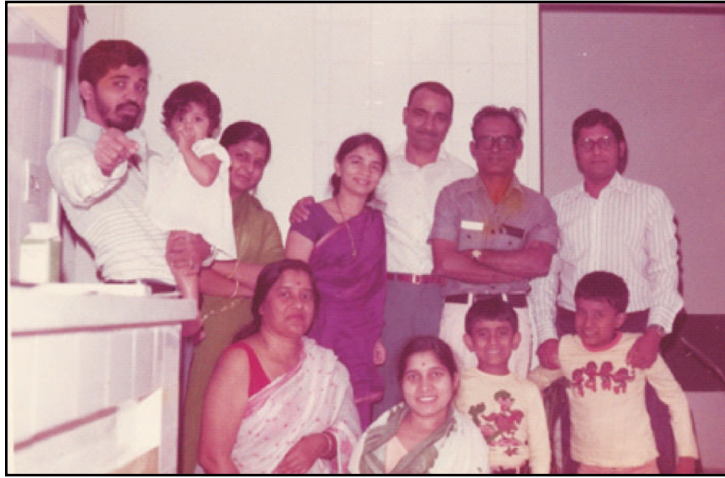
The following paragraphs provide a glimpse of his personality through some of the interactions I had with him.

In one annual congress of the Brazilian Vacuum Society, the chief invited speaker was the President of the American Vacuum Society. On Sunday, the day

before the conference, as he boarded his flight, he was surprised to learn of a rule change that required him to obtain a visa to enter Brazil. As I was the local coordinator of the congress, he called to inform me of his predicament. Neelkanth was staying with me as he was attending the conference. He did all the legwork, made innumerable calls to Brasilia for the Brazilian ministry of external affairs to issue a visa and contacted the airline at Miami airport to allow the distinguished guest to board for Rio. We needed to have him attend the conference the next day, and it was a feat made possible due to Neelkanth's great tenacity!

On another occasion, after attending a conference in Japan, he came back inspired, and excitedly proposed an innovative line of work where he could produce samples in his thin films lab, while their analysis could be carried out in the accelerator lab where I worked. I remember the two of us, with great enthusiasm, feverishly working out the simulation of the trajectory of ions incident on a sample and exiting after being scattered. The simulations were done with a new pocket-calculator, at Neelkanth's apartment on a weekend, while Sucharita provided delicious lunch.

One fine day, Neelkanth and Sucharita stopped by at our apartment in Rio. He showed me an advertisement of a residential building launched for construction, and wanted me and my wife, Geeti, to go to the site and have a look. He literally dragged us to the car to go there. So we all went, and got the



the knowledge of the National Interest category of visa, Neelkanth and Sucharita informed me about it, and urged me to apply. It proved successful, thanks to the helping attitude of at least three kind souls.

The last time I saw him was in Denver, Colorado, at the wedding of Vishal and Erin, and I am glad I could go and see him. After a lifetime dedicated to work in the frontiers of science and technology, a leader in training a generation of graduate students, a very dear friend who has helped me so much personally, Neelkanth Dhere will be long remembered among his friends, family, and coworkers. My prayers are for his soul to rest in peace.



details, payment schedule etc. We came back to our apartment, and I argued that it was beyond what I could afford or qualify for. He convinced me that it would work out just fine, and to go forward with the purchase agreement. Looking back, I thank Neelkanth for the 'little' push that he gave, without which I would not have a roof over my head as my own. I also appreciate the help from his brother Ashok who pitched in.

Neelkanth has been a true friend to me, going above and beyond during critical moments. After coming to the U.S, I was at an impasse in trying to apply for a permanent visa. Again, at the suggestion of his brother Ramesh who had

**- Bijoy Patnaik**

---

# A Person Who Guided and Molded My Life

---

I first met Dr. Neelkanth Dhere 52 years ago, in September 1969, at the Physical Research Laboratory in Ahmedabad founded by Dr. Vikram Sarabhai. Dr. Dhere had come back to the lab at 9 p.m. after taking his dinner. I'd been visiting a friend who worked at the prestigious research institute and I was just as impressed by Dr. Dhere's dedication of working late at night as I was by the lab itself.

At the time, I was two years past the completion of a master of science degree in physics and was working as a lecturer at a local college – though, truthfully, I wanted to do something different. Dr. Dhere took a few moments of his time that night and chatted with me. I told him about my teaching position, my studies and experience, and expressed an interest in doing something different. That night, he invited me to come further chat with him again sometime in the future. I grabbed the opportunity the very next morning and presented myself back early at PRL where Dr. Dhere showed me his 'thin film' lab and the microelectronics deposition equipment built by his team. I did not know much about microelectronics manufacturing but was impressed by his lab and his enthusiasm. I tried to mirror his enthusiasm and expressed an interest in joining his team.

After an official screening process lasting several very long weeks, I was offered and accepted a job at PRL in Dr. Dhere's lab. It was very challenging but also a very rewarding experience, working some 12 hours a day. I enjoyed it tremendously

and learned a lot. At that time PRL, under Dr. Sarabhai, was making great scientific progress – a point of national pride, and becoming recognized internationally. The job, with its challenges and prestige, was like a dream.

One day, some months after I got acclimated and started contributing to the team's scientific research, Dr. Dhere informed our group that he has been invited by the government of Brasil to join their space research institute (Centro Nacional de Pesquisas Especias) in Sao Jose dos Campos. We were all shocked but happy for his advancement. He was a dreamer and an enthusiast. Before leaving for Brasil, Dr. Dhere brought and introduced Sucharita bhen to Ahmedabad, and introduced the group to her. She was very kind to each of us.

A couple of months after his arrival in Brasil, he called me and asked if I would be interested in joining him if he could convince the Brazilian government to hire me. Without giving it a second thought and with close to no knowledge of Brasil, I right away said yes. I was eager to work with Dr. Dhere again and to explore new challenges. I had so much confidence in him as a scientist, leader, and person, that I knew working with him would help advance my career.

Not more than six months after he and Sucharita bhen arrived in Brasil, I received a job offer from the Brazilian government. He personally made a condition/request that I get married prior to departing India and that I bring my wife with me to Sao Jose as soon as possible. He wrote that the institute would pay for our

airfare and expenses, a difficult hurdle as I had not thought of this seriously. I could not say no and started looking for a better half. Luckily, I found her.

Anjana Bhatt and I got married on Feb. 28, 1971, and embarked on our journey to Brasil on June 10, 1971. Dr. Dhare met us at Sao Paulo airport and drove us to his home in Sao Jose dos Campos. We stayed with him until he found a place for us to live. Sucharita bhen taught Anju cooking, shopping, and some Portuguese phrases to get by on. This was the first time either Anju or I had independently ventured beyond the sheltered lives, we had led our entire lives in Ahmedabad. There was much to learn about Brasil and ourselves, but with the help of Sucharita bhen and Neelkanth-ji we learned and enjoyed beginning a new life. We still today remember how helpful they were in taking care of us and have always modeled them in doing the same for others. Relatives and friends from Ahmedabad could not, in later visits, believe the changes they perceived in us after we left India.

After working in Sao Jose with Dr. Dhare for a few months, one day he told us that he had received an offer of a better position with an institute in Rio de Janeiro and would be leaving in a few months. He assured me that he would bring me as soon as he got settled. And within a few months, I got an offer from Instituto Militar de Engenharia (IME) to join him - which I did on January 1<sup>st</sup>, 1972. Again, they hosted us until we found a place to live. The transition was very smooth and productive, scientifically and socially. I worked with him for almost 8 more years, learned to engage in scientific research, published several papers together, presented our work at conferences. I give him full credit in preparing me to be an independent researcher. Anju and I enjoyed Rio, made good friends, explored new cultures and places, and were warmed by a new, tight and expansive, community. During this time we also started a family of our own – our son, Anand, and daughter, Vedangee, were born during this magical time. Dr. Dhare and Sucharita bhen were there at each, important point of our new life, guiding and supporting us as if we were their own family.

During these years, I saw Dr. Dhare's drive in many ways. Aside from our scientific exploits, was his effort with my application to gain Brazilian permanent residency. Dr. Dhare facilitated and guided me through the maze of Brasil's bureaucracy and laws, in the 1970s, without a lawyer and with our limited knowledge of Portuguese. He checked each box and took each step one by one, and finally met an official who was in charge of granting this status. At the meeting, the official was showing him that several things were not in order - probably he was looking for a bribe. Dr. Dhare and I spent an hour convincing him in broken Portuguese and finally the official gave up and granted us permanent residence status.

I would not and could not have done this on my own. When we left India we were naive about the world and sheltered by our insular community. We had hardly been exposed about how to live an independent life, how to make basic and complex decisions, how to interact with people outside our extended native community, how to survive and attempt to thrive in uncharted waters, how to persevere. It was thrilling. We continued and continue to explore with fascination the beautiful world beyond our sights after Dr. Dhare and Sucharita bhen brought us out of our nest.

The 1972 Rio de Janeiro Carnival Parade was also no match for Dr. Dhare's perseverance to thrive. As you may know, the four nights of Carnival are the biggest event in Brasil - millions come to celebrate, and watch and participate in the famous parade of samba school dance floats. It was impossible to get tickets to watch the parade in those years. Regardless, Dr. Dhare decided we must try. He and I went and stood in line for several hours ... only to learn that all the tickets were gone. Instead of giving up, he wove through the crowds to meet the people in charge. Surely, they had some tickets only for VIPs. He talked to the person in charge for hour and that person realized that this man is not going away without getting any tickets. He finally gave us the tickets we wanted. I remember how happy he was that night. We went each of the four nights to watch the

parade and we enjoyed ourselves thoroughly. I learned again that day that to achieve, even pleasures in life, you may have to be persistent, struggle, and not to give up.

After working with him for eight years and forming an incredible, comfortable, new life and nest, Dr. Dhere gently pushed me to go for further study to advance my career. To once again leave a nest and challenge myself, push my drive, meet my potential, and explore the world of possibilities. With his guidance, I applied for and was accepted into a Canadian material science Ph.D. program in 1979 and started anew, again. Sucharita bhen and Dr. Dhere continued to stay in contact with me at each stop – from my appointment to a faculty position in the mid-1980s with the University of North Carolina at Chapel Hill to sending us

marvelous, fresh oranges mid-winter from groves near their Florida home decades later.

Neelkanth and Sucharitaben were like our elder brother and elder sister. They took care of us, nurtured us, mentored us and grew into adults two simple, naive people. We owe much of what we have explored and accomplished in our lives to early lessons we learned from them.

Thank you, Neelkanth-ji and Sucharita bhen. We wish that both your souls rest in peace, that your family is warmed by our thoughts and these memories, and that we all continue to emulate the lessons learned from you.

**- Nalin and Anju Parikh**  
Chapel Hill, NC.



---

# OBRIGADO PROFESSOR DHERE

---

Meu nome é Helio Moutinho. Sou um cientista sênior no National Renewable Energy Laboratory (NREL), em Golden, Colorado, Estados Unidos da América.

Em 1979, me formei em física e ingressei no grupo do professor Dhere, no Instituto Militar de Engenharia (IME), no Rio de Janeiro, Brasil, para fazer mestrado em Ciência dos Materiais.

O professor Dhere foi meu orientador por muitos anos, sempre muito competente e atencioso com os seus alunos. Uma coisa que me impressionava muito era o seu conhecimento na área de semicondutores e a sua capacidade em escrever projetos. Nessa época, ele conseguiu um grande projeto para a fabricação de células solares. Além de proporcionar a aquisição de vários equipamentos, o projeto permitiu a contratação de vários profissionais e mais que dobrou o tamanho do grupo. Eu fui um dos contratados e passei de aluno para pesquisador. Depois de defender minha tese, fui promovido a professor. Portanto, o professor Dhere diretamente afetou o meu futuro de uma forma muito positiva.

Algum tempo depois, sempre com o seu comando seguro e competente, o professor Dhere começou um projeto de intercâmbio com um importante cientista americano, doutor Lawrence Kazmerski. Nas vezes em que o doutor Kazmerski visitou o nosso laboratório, sempre interagimos em pesquisas. Devido a esse trabalho, o doutor Kazmerski me convidou para vir para os Estados Unidos fazer o meu doutorado no NREL. Depois de alguns anos, fui contratado pelo NREL,

aonde trabalho há mais de trinta anos. Mais uma vez, um projeto criado pelo professor Dhere alterou a minha vida significativamente.

Além de sua decisiva participação na minha vida profissional como orientador e chefe, o professor Dhere foi um grande amigo, juntamente com sua esposa, dona Sucharita, uma pessoa muito agradável e especialista na culinária indiana.



Jantar na casa de nosso amigo Mowafak. Da direita para a esquerda: Lucia, Denise, Eduardo, Isabelle, Asmita, Sucharita, Neelkanth. Embaixo: Helio e Mowafak.

Além disso, eu e minha esposa, Lucia, nos tornamos amigos de seu irmão, Ramesh, e cunhada, Asmita, com os quais mantemos laços de amizade até hoje. Durante os meus anos no IME, visitamos a casa do professor Dhere várias vezes, aonde fui introduzido à cozinha indiana, da qual me tornei um apreciador.

Já nos Estados Unidos, colaborei com o professor Dhere por muitos anos. Além disso, a nossa amizade continuou forte e nos encontrávamos frequentemente

em jantares e festas.

Mesmo depois que ele se mudou para a Flórida, a nossa amizade e colaboração continuou e ainda fizemos muitos trabalhos juntos.

A sua morte foi uma perda muito grande para nós, pois ele foi um grande amigo, que diretamente afetou a minha vida e de minha família de uma forma muito positiva.

**- Helio Moutinho**





---

# Tribute to Prof. Dhere

---

A morte do Prof. Dhere representa uma grande perda para todos os seus ex-alunos e aqueles que trabalharam com ele. Ele foi muito importante em minha trajetória profissional e na de muitos que foram formados por ele. Penso que eu nunca teria alcançado minha posição no Instituto Militar de Engenharia (IME) sem sua orientação.

Meu primeiro contato com o Prof. Dhere foi em janeiro de 1982, quando fui recebida por ele em uma entrevista para ingressar no Programa de Pós-graduação em Ciência dos Materiais do IME. Ele era o líder do grupo e chefe do “Laboratório de Células Solares e Microeletrônica” e me apresentou com muito entusiasmo os trabalhos desenvolvidos por ele. Felizmente, ele aceitou me orientar e, após ser aprovada no processo seletivo, ingressei no grupo de pesquisa do Prof. Dhere para iniciar o mestrado.

O Prof. Dhere era um verdadeiro líder de pesquisa e envolvia todos os seus alunos em todas as atividades acadêmicas. Devo a ele muito do que aprendi. Foi com ele que aprendi a organizar eventos e cursos, redigir relatórios, prestar contas de projetos de pesquisa e escrever artigos. O Prof. Dhere também conseguia financiamentos de vários órgãos do Brasil e do exterior e financiava a inscrição e a estadia de seus orientados nos Congressos mais importantes do Brasil. Através dele, pude estabelecer contatos com outras Universidades, no Brasil e no exterior, por ex., com o Instituto de Física da UNICAMP e com o Solar Energy Research Institute (hoje, National Renewable Energy Laboratory). Esses contatos foram importantes na minha carreira profissional e permanecem até hoje. Minhas

memórias como aluna do Prof. Dhere também incluem a sua esposa, Sucharita, que recebia a todos nós, alunos e pesquisadores, com muito carinho e atenção.

Além de orientar, o Prof. Dhere também se preocupava muito com o futuro profissional de seus alunos. No meu caso, após terminar o mestrado, ele me recomendou para o Laboratório Van de Graaff do Instituto de Física da Pontifícia Universidade Católica do Rio de Janeiro. Mais tarde, em 1985, ele me convidou para retornar ao IME, onde fiz minha carreira acadêmica.

Quando o Prof. Dhere deixou o Brasil, eu e os colegas do IME formados por ele assumimos o laboratório e as pesquisas em células solares. Foi uma honra e um desafio para nós receber essa responsabilidade. Sou muito grata a ele pela confiança depositada em mim.

O Prof. Dhere continuou colaborando conosco durante toda a sua carreira, recebendo alunos e professores do IME no Florida Solar Energy Center. Durante os anos de 2013 a 2015, ele esteve como Visiting Professor no IME e sua visita foi muito importante para a excelente avaliação que o nosso curso de pós-graduação recebeu do Ministério da Educação. Nós devemos isso a ele.

Eu e os colegas do IME que convivemos com o Prof. Dhere estamos muito tristes e lamentamos profundamente essa perda. Mas nos conforta saber que seus ensinamentos permanecerão e serão transmitidos para outras gerações, com o mesmo entusiasmo, seriedade e dedicação.

**- Prof. Leila Rosa de Oliveira Cruz**

Message Homenagme

---

# A Linha invisível que nos conecta

---

Quando me falaram sobre escrever um texto sobre o Prof Dhere, me veio a mente uma teoria que vi em um filme, levei um tempo procurando, mas não encontrei nada a respeito. Essa teoria diz que existe uma linha invisível que liga os caminhos e portanto a vida das pessoas. Assim todas as pessoas que conhecemos estão conectadas por esta linha que nunca se embarça. Conheci o Prof Dhere via a SBV e dela participei ainda quando era aluna de Mestrado do Prof Losch na UFRJ. Mas, o Prof. Dhere e Sucharita foram amigos queridos e muito gentis. Prof. Dhere me auxiliou profissionalmente e como pessoa em um momento de muita dificuldade, mostrando toda a sua generosidade como ser humano. Ele

também era uma pessoa bastante pragmática e objetiva. Uma vez quando falei que a minha filha queria pegar um gatinho para criar ele me disse: Você tem idéia do que isso significa, ter gatos para cuidar? Ele tinha razão, eu não tinha mesmo. Ele se referia ao trabalho adicional que eu teria. Em termos profissionais o estudo de células solares até hoje tem o significado de futuro, o que mostra que ele sempre teve a clara a perspectiva científica de renovação energética. A vida é um ciclo interminável de trocas de energia, assim como o fóton excita o elétron gerando uma corrente elétrica que por sua vez pode gerar fótons, nossa energia se transmuta no universo. Boa viagem Prof Dhere !

- Ivani Bott

---

# One Day in India – January 2010

---

Dr. Neelkanth Dhere was a kind, courageous, intelligent man with a great sense of humour. Although I could recount several stories, this particular experience was part of a life-changing trip to India. That trip was made possible by Dr. Neelkanth Dhere and the education foundation that was set-up in his wife's honour.

My colleague, Penny Hall and I had been in India for about two weeks. We had conducted two teacher workshops, visited many historic and religious landmarks, such as the Taj Mahal and Shri Saibaba's Samadhi Temple, toured the solar covered rooftop and kitchen of the dining facility there, got a henna tattoo, dipped our toes in the Arabian Sea, tasted the most delicious food, enjoyed a daily cup of hot masala chai tea, dined with Dr. Dhere's extended family, who also toured us through beautiful natural areas and so much more. We were doing our best to absorb everything that we could from the first moment we arrived.

Dr. Dhere had done an incredible job of packing our trip full of experiences. He was also intent on organizing a third workshop for teachers. After talking with a colleague, it was arranged for another workshop to be held at Ferguson College. Additionally, he persuaded his colleague to have some engineering students available to help. We met with the engineering students in advance of the workshop and assigned roles for everyone.

It was a beautiful, clear sunny day – perfect for the workshop. Unfortunately

Penny was not feeling well, but still helped facilitate some of the background activities in the classroom. Then the teachers were led up the stairs to the roof where the laboratory activities were to happen. At each station, one or two engineering students were there to help translate and facilitate the hands-on experiments that involved photovoltaics, solar thermal technology and hydrogen fuel cells. The teachers dispersed to different areas to explore the various technologies. I assisted where needed and made sure things were running as planned. Dr. Dhere started in another area and went from one station to the next, listening, asking questions, and getting teachers to think about how the various renewable energy technologies worked and how to bring that information to



Teachers experimenting with 3  
Volt photovoltaic panels.  
**Dr. Dhere in the blue shirt  
and gray slacks.**

(Photo Credit – Penny Hall, FSEC ERC)



Susan Schleith in  
the blue shirt.

(Photo Credit – Penny Hall, FSEC ERC)

their students.

Everything was progressing nicely. After some time, Penny made her way to the rooftop despite still not feeling well. She took a few photos before Dr. Dhere

indicated it was time to go back to the classroom. The teachers were so engaged in the experiments that Dr. Dhere could not get their full attention. Discussions were happening all across that rooftop – this was a great success! We extended our time on the roof a bit longer. Then Dr. Dhere realizing it was getting late, announced that it was time to finish up and head back downstairs. The college students were really enjoying themselves and were so engrossed in the activities that they didn't hear him. A few teachers headed toward the door, but all the rest were paying more attention to the college students and continued experimenting with the lab materials, even making up new activities, as teachers do.

Drastic measures were needed. I reverted to my elementary teaching bag of tricks. To get everyone's attention, I placed two fingers to my mouth and whistled as loud as I could. The piercing sound stopped everyone in their tracks. I whistled again. Everyone, including Dr. Dhere was staring at me in disbelief. I was a bit taken aback and a little embarrassed at how surprised everyone looked, but then Dr. Dhere laughed, gave me a big smile and nodded his head from side to side, which I knew was a sign of approval. Dr. Dhere now could speak and be heard by everyone. We all headed back to the classroom.

**- Susan Schleith**



---

# Dr. Neelkanth G. Dhere : Hardworking Scientist

---

Dr. Neelkanth G. Dhere was one of the five siblings of the Dhere family. He was born in Barsi, Maharashtra, India. The three brothers and one sister were all Ph.Ds. and one sister was a medical doctor. For this remarkable accomplishment, the Dhere Family was included in the Guinness Book of World Record. It so happened, I knew all three brothers at various stages of my life. I knew the middle brother Ashok in Graduate School at the University of Kentucky, Lexington, KY, Ramesh was my colleague at SERI/NREL and Neelkanth was my Subcontractor.

Dr. Dhere completed his Ph.D. from Poona University (now Pune University). After working in India for a few years he moved to Rio, Brazil where he spent a significant amount of his professional career working in the area of solar cells and other devices. In 1986 he came to the U.S. and joined SERI, Golden, CO. He worked in SERI for about 4 years in the area of thin solar cells and indium phosphide cells.

In 1990, he then joined FSEC, Cocoa, FL as a research scientist. He built the first thin CIGS lab from scratch at FSEC. He built all the necessary equipment for the fabrication of thin film CIGS solar cells. As a Subcontractor to SERI/DOE (later on NREL) he was awarded several subcontracts to perform high quality research and testing. One of Dr. Dhere's major contributions was the mentoring

of Graduate Students doing their M.S. and Ph.D. degrees in the area of thin film CIGS solar cells and outdoor reliability testing. As his Technical Program Manager, I had the pleasure of visiting his facilities at FSEC and was impressed with the high quality of scientific work being done in the lab.

Dr. Dhere was also an active member of the National Thin Film CIGS Team. He was always an active member of the Team. With the help of his students, they made major contributions to the National Team activities. As Chair of the National Team, I appreciated all his commitment, dedication and hard work. In the process, he instilled these qualities in his Graduate Students too. I would like to characterize Dr. Dhere as a workholic. Several of his students are very successful scientists, engineers and managers in the technical field. Dr. Dhere was gracious enough to host the National Team Meeting at FSEC, FL. With the help of his wife Sucharita, they would host dinner in the evening for all the Team Members.

Dr. Dhere also organized and attended several professional Conferences in PV and other areas in Asia, Europe, U.S. and South America. He was always very aggressive and asked tough questions to the speakers. He has numerous technical papers and presentations worldwide in his professional career.

I have personally known Dr. Dhere for a few decades. He was always very caring, humble, kind and had a smile on his face. I have never seen him complain about anything. Every time he attended a Conference, I would get a call from

him to make sure he had all the facts and figures correct, especially the efficiency of thin film solar cells and modules.

The Indian Community of Colorado used to fondly call him “Dada” (elder brother). They had a lot of love and respect for him. He was always willing to

give a helping hand to members of his family. We will miss Dada. May his soul rest in eternal peace. Om Shanti!

**- Dr. Harin Ullal**



---

# Warmth, Devotion and Work : A Journey through many Lands

---

It is with a heavy heart that I write these few lines for the memoir of Neelkanth Dhere who was a close friend and colleague for almost 34 years. We first met in 1987 at the Solar Energy Research Institute (SERI) when Neelkanth had begun to do research in the area of high temperature superconducting oxides, a new field that had captivated many solid-state physicists. He used his expertise on thin-film growth to grow and study Bi-Sr-Ca-Cu-O thin film superconductors and in just four years published several scientific publications in this field. What was quite unusual was that he did all the growth and measurements himself and was the first author on all these publications. He was very thorough and did not ride on other's efforts. At that time a colleague at SERI told me he was asked to review a paper that Neelkanth had just written and was shocked to find that the 4 page paper had 150 references! I learned that Neelkanth belonged to a breed of talented Indian scientists who were trained by the famous Indian space scientist Vikram Sarabhai at the Physical Research Labs in Ahmedabad. This style of work was what distinguished Neelkanth from others in the field. He would build all his equipments from scratch, never opting for pre-built equipment that could be purchased at significantly higher costs. At that time when personal computers just became available, Neelkanth got one built locally rather than buying the popular ready-made but much more expensive IBM PC. Neelkanth moved as a faculty member to the Florida Solar Energy Center (FSEC) in the early nineties. Yet over

the years we would meet annually when he came to Golden Colorado for the Photovoltaic R&D meetings. He would always stop by to say hello, which I recall would be followed by many wonderful evenings with him at the home of his brother Ramesh. Neelkanth was never opinionated and so it was always a pleasure to discuss issues with him that ranged from the state of research in general, the field of thin-film photovoltaics, and of course India, and Brazil where he had



spent a long time. I will always remember his chuckle, his anecdotes and his gentle sense of humour. Neelkanth had a style of simplicity and humility that is unique. I had got to know his wife Sucharita when I visited his home in Golden and immediately saw how she most beautifully complemented Neelkanth. Over a decade later I had the chance of visiting them both at his home in Florida. Neelkanth showed me his lab at FSEC and I was shocked. Unlike at NREL, everything in his labs was hand built by Neelkanth and his graduate students. A testament to this is that all the numerous students that he graduated were all placed in the best semiconductor technology companies such as Intel, Applied Materials etc. His beloved wife Sucharita passed away 14 years ago. There was not a single Christmas prior to that when I did not receive a Christmas card from them. After that Neelkanth devoted himself even more to his research and his students at FSEC. It was always a pleasure to meet him when he would visit Golden for NREL Meetings. Despite almost 25 years he had not slowed down in his work. It is what meant the most to him. He gave whole heartedly to this and

to the generation of students that he trained. He finally retired from FSEC in his late seventies. Yet when we got a chance to meet he was still the same wonderful person I had always known. But a few years ago his health started to fail. Just about two years ago I recall going out to have lunch at Panera Bread with Neelkanth, his brother Ramesh, and Satyen Deb who had headed the Basic Sciences Center at NREL. Satyen was visiting Golden from New York and wanted to meet Neelkanth. Attached below is a photo at that meeting that shows the affection between them. That was Satyen's last meeting with him as soon after that Neelkanth moved to Pune, India. In the course of a life in science one comes across numerous researchers, each with individual and varied personalities. In my own career I can say that this world was a better place because of Neelkanth. A fitting way to end is with this quote from Max Mueller. "I know well there is no comfort for this pain of parting. The wound always remains, but one learns to bear the pain, and learns to thank God for what he gave. For the beautiful memories of the past, and the yet more beautiful hope for the future."

**- Dr. Angelo Mascarenhas**





---

# Dr. Neelkanth Dhere was well respected by the highest authority in space sciences, Dr. Vikram Sarabhai

---

Dr. Neelkanth's help changed my life from a Technician to a Scientist

I had completed by B.Sc. in physics and studying one more year for B.Sc. Honors from Ferguson College in Pune.

I joined Radio engineering Course in Wadia College in the afternoon from 12 to 4 'o clock. In the morning from 8 'o clock, I used to work as a demonstrator in the Department Physics for students up to 2<sup>nd</sup> year for their degree.

After completion of course D.E.R.E., I happened to know that new institute in research in physics is opening in Ahmedabad and they need engineers and technicians in electronics. I sent an application, in reply was asked to join the institute known as Physical Research Laboratory – PRL informing that during interview they will decide my position and payment.

I was already married, living with sister, mother in own house. I decided to go to Ahmedabad in Gujarat state. Everybody was against me. I took a bag myself and my wife took trains from Pune, Bombay to Ahmedabad.

MY one of the acquaintances had seen apartments etc. We rented one room, which I was able to offer from my monthly earning. Used to go to PRL by bike.

Started life, I was given \$ 20 more because I was B.Sc. (hon), in addition to D.E.RE.. I was asked to join the group of Prof. Neelkanth Dhere. Production of thin films required in the project of conversion of sun light energy to light to electrical energy.

Soon, Prof. Dhere realized I have radio engineering diploma. He therefore introduced me to Prof. R.V. Bhosale, who had returned from CAL TECH. to initiate Solar Radio Astronomy group.

I learnt to make solar observations with solar spectroscope in PRL itself and other instruments at the place of present ISRO's station.

By the way, I happen to know that Gujrat University was situated just behind PRL. They offered M.Sc. degree in Electronics, and if I were to pass their entrance examination, I could join it.

Prof. Bhosale was kind enough to inform me that "You can try but must get First class to work with me". I prepared and gave exam, for me knowing electronics earlier exam was just a simple one. I passed it with high percentage.

I went to university office to fill the form, the Clerk at the table informed that the University did not recognize B.Sc. Honors Course of Poona University.

I was so nervous so I spoke with Prof. Bhosale, he suggested me to talk with Prof. Dhere, since he was more in contact with Director Prof. Vikram Sarabhai, who initiating space research center at Thumba.

I went to Prof. Dhere's cabin and told him story of admission to M.Sc. to Gujarat University. He just said let us go and meet Dr. Vikram Sarabhai. I was really surprised.

We went to director's office after waiting, he attended us. Prof. Dhere informed

him about my B.Sc. Honors Course was not recognized by council of university yet.

He just talked with me asked with whom now I am working, I told him I was working in Radio Astronomy group. He said that is good, we need more radio astronomers. He told he will do best whatever he can do and will let you know tomorrow. So, we left office. So, nothing. Next morning around 10 o'clock, clerk from the University came to our apartment personally to inform me that I should go and pay the fees to university for M.Sc. in Electronics course in Gujarat University.

Then we happened to know that Dr. Vikram Sarabhai was highest authority

in Gujarat University. In his capacity, he approved the B.Sc. Honors course of Poona University and also resolved my case. That is the reason clerk of the university came personally to my house.

This shows how Neelkanth was respected by the highest authority in space sciences. Today we know Thumba is the space center of India, fulfilling Vikram Sarabhai's dream.

Prof. Dhere changed my life from a technician to one of the well accomplished scientist, having first publication in prestigious journal "Nature". It publishes only the select papers with new discoveries.

**- Hanumant Sawant**



# पाठीराखा

निळूदादा आजारी आहे आणि मी भारतात परत येत आहे असा रजनीचा मेसेज आला आणि त्याच क्षणी निळूदादा आणि बार्शीच्या जुन्या आठवणी एकदम तळातून उसळून आल्या. निळू दादाची आणि माझी भेट कित्येक वर्षांपूर्वी झालेली. आमचा तो लीडर. गणपती उत्सव, गल्लीतली मुले बरोबर घेऊन वर्गणी जमा करायची, हे सगळे तो अगदी सहज करत असे. थोडासा सावळा, उंच, अगदी दाट भुवया, आणि विलक्षण आवाज. त्याच्या आवाजाला एकप्रकारची धार होती. डोळे पाणीदार, माया असलेले, तरी सुद्धा धाक वाटेल असे होते. मुलांनी खूप शिकावे, मोठे व्हावे अशी निळूदादाच्या आईची फार इच्छा होती. त्यासाठी कुठलाही त्याग करण्यास तिने मागे पुढे वाहिले नाही. निळूदादापुण्याला शिकायला गेला आणि नंतर त्याने मागे वळून पाहिलेच नाही! तो मोठा आणि मोठाच होतगोला. यशाची नवीन शिखरे त्याला सदैव खुणावत होती आणि तो ती अगदी सहज पार करत गेला.

आम्ही वाढत गेलो, आमच्या व्यापात गुंतत गेलो. त्याची भावंडे ताई, रजनी आणि मी काहीसे समवयस्क, तर अशोक प्रकाश बरोबरचा. प्रत्येकाची वाट वेगळी. हे अंतर वाढत गेले आणि अचानक इतक्या वर्षांनी परत आता सगळ्यांची गाठ पडली.

रजनीची आणि माझी भेट अनेक अनेक वर्षांनंतरची! मधली ५० वर्षे, भिन्न दिशांना आमची वाटचाल सुरु होती, काहीही संपर्क नव्हता.

निळूदादा, ताई, रजनी, अशोक, आणि रमेश ही आमची लहानपणची अगदी जवळची, एकत्र खेळलेली, लगतची घरे असलेली अशी. ही सगळी काळाच्या ओघात कुठे कशी, कधी आणि केव्हा दुरावली हे कळले सुद्धा नाही. आम्ही सगळे काळाच्या प्रवाहात वहात होतो आणि कुठे तरी एकमेकांपासून दूर अडकून राहिलो होतो. यथावकाश मोठे झालो, संसाराला लागलो, आता संसाराचा खेळ आटोपता घ्यायची वेळ येत असताना, अचानक पुन्हा सगळ्यांची भेट झाली. जुन्या आठवणींना उजाळा मिळाला. पण या सगळ्या भेटीला दुःखाची किनार होती, हळहळ होती, भावना होती, कृतज्ञता होती कारण

निळूदादा निरोप घेऊन निघून गेला होता. रजनीचा मला मेसेज आला, त्याच्या जाण्याचे अतिशय वाईट वाटले. तशी त्याची माझी गाठ पडून खूप वर्षे झाली होती, एकदा फोन वर बराच वेळ बोलणे झाले होते, तो आता आपल्यात नाही ही जाणीव फार अस्वस्थ करणारी होती. खुपदा आपले मित्र. आप्त आपल्याला वर्षानुवर्षे भेटत नाहीत पण ते आहेत ही भावनाच फार दिलासादायक असते. निळूदादा जाण्याचे दुःख असे मनातल्या मनात पाझरत राहिले.

ही सगळी भावंडे विलक्षण बुद्धिमत्तेची! निवृत्ती, ज्ञानदेव, सोपान, मुक्ताबाई यांची आठवण व्हावी अशी. अनंत कष्ट, आर्थिक ओढाताण, आईवडिलांची काळजी हेच भांडवल. पण या सर्वांवर मात करणारी दुर्दम्य इच्छाशक्ती, जिद्द, चिकाटी त्याला लागणारी बुद्धिमत्तेची जोड, त्यामुळे ही सगळी भावंडे एका वेगळ्या उंचीवर जाऊन पोहोचली. या सर्वांचं नेतृत्व अर्थात निळूदादाकडे. वयाने तो मोठा होताच, पण भावंडाची जबाबदारी पेलण्याचे मजबूत खांदे त्याला लाभले होते. तो स्वतः एमेस्सी झाला. पी. एच. डी. झाला. ब्राझील, अमेरिकेत संशोधनात मोठे कार्य केले, आंतरराष्ट्रीय पातळीवर त्याच्या मोठा गौरव झाला, मान्यता मिळाली. अमेरिकेत स्थायिक झाला. निळूदादाला अगदी तशीच सहधर्मचारिणी मिळाली, धाकट्या दिरावर प्रेम करणारी, सगळ्यांना सांभाळून घेणारी. ती स्वतः उच्च विद्याविभूषित होती.

पण इतके असून तो स्वस्थ बसला तर तो निळूदादा कसला? ताई डॉक्टर झाली, पाठोपाठ रजनी एमेस्सी, पी. एच. डी. झाली. अशोक इंजिनीअर झाला, पी. एच. डी. झाला, रमेश इंजिनीअर झाला. दोघे अमेरिकेत सेटल झाले. अश्या रीतीने ताई पुण्यात, रजनी धारवाड आणि तीन भाऊ अमेरिकेत. या सर्वांचा दीपस्तंभ निळूदादा! तो त्यांचा मार्गदर्शक, प्रेरणादायी, यशाकडे खेचून नेणारा, आधार देणारा, सांभाळणारा आणि प्रेम करणारा. या सगळ्या भावंडांचे एकमेकांवर अतिशय प्रेम. निळूदादाने त्यांना मदत केली पण परावलंबी केले नाही, त्यांना स्वतःच्या पायावर उभे केले, यशाचा मार्ग दाखविला. या सगळ्यांचे यश पाहून निळूदादा कृतकृत्य झाला असेल. आता हे सगळे संसारात सुखी आहेत, त्यांची

मुले मोठी झाली आहेत, लक्ष्मी आणि सरस्वतीचा वरदहस्त आहे. ही निळूदादाची पाखरमाया. वयपरत्वे निळूदादा थकला, त्यात त्याची सुखदुःखाची जोडीदार अगोदरच त्याला सोडून गेली होती. अमेरिकेतील काम चालू होते, सहकारी शिकून तयार झाले होते. या निवृत्तीला आता निवृत्तीचे वेध लागले होते. वय झाले होते. आजारी पडला, त्यात कोरोनाची भर पडली. शेवटच्या दिवसात ताई, रजनी, अशोक, रमेश सगळे जमले होतेच. या सगळ्यांचे स्थिरावलेले, फुलणारे संसार निळूदादाने पहिले होते, करायचे आता काही शिल्लक नव्हते. समाधानी होता. याज साठी केला होता अड्डाहास, शेवटचा दिवस गोड व्हावा. असे तुकाराम महाराज म्हणून गेले आहेत.

निळूदादाचा शेवटचा दिवस गोड झाला.

Rajani was returning to India since her brother Niludada wasn't keeping well and was confined to bed. The moment I heard this from Rajani herself, all our childhood memories came flooding back. Niludada, who lived right next door in that modest alley of ours. Eldest amongst us, he was our natural leader. Always optimistic, with a firm temperament. Affectionate with his kind eyes and kept himself fit and energetic always.

In Maharashtra, a state in western India, Ganesh festival is a great ritual. Those ten days were full of entertainment. Our little alley was no exception. Niludada was our leader. The festivities needed collecting modest amount of money from the neighborhood, collective effort for decoration, Ganapati idol, and the works. Niludada was our undisputed leader. We looked up to him as he carried the responsibility with ease. Under his leadership, all the functions were executed effortlessly

Niludada, Snehlata, Rajani, Ashok and Ramesh. Amongst all the siblings, Tai (Shehlata) and Rajani were almost the same age as me. Ashok was contemporary of my brother (Prakash) and Ramesh was the youngest. The family matriarch, the mother of these children was truly great! She sacrificed everything for the better education of her children. It was her only wish, that everybody should be outstanding with notable education. A great lady!

In the course of time Niludada went to Pune for higher education. These were the days of his struggle, difficult times. But he persisted and completed his

M.Sc. in Physics and then he never looked back. He took challenges in his stride and progressed, kept moving forward. He completed Ph.D. in physics with "Thin Film" as his area of expertise. But he wasn't to stop there. It was natural for Tai, Rajani, Ashok and Ramesh to follow him. The younger siblings, fortunate with Niludada's guidance and support, higher and higher they went following his path. As if being elements from the same family of metals, every one of them went on to become either doctorate or doctor. He made his siblings independent, supported them, showed them path. He was elder brother, a guide and a philosopher. He had the great and distinct honour to work with Dr. Vikram Sarabhai.

Destiny, unpredictable as always hatched a peculiar plan. His talent and achievements took him to Brazil. But with dwindling economy of Brazil, he somehow ended up in USA. The United States was meant to be his destination. Florida Research Centre became his "Karmbhoomi".

Sucharita, Niludada's wife and doctor by profession took really good care of him. She had made a name for herself in her field. She equally loved all of his siblings in the family. Unfortunately, she passed and left him when she was needed the most. For it is the days of retirement where you truly enjoy your life with your life partner. I think her untimely demise left Niludada a bit lonely, but then this is life.

Rajani was in Pune and so was I with my wife. We met after a prolonged gap of almost 50 years. All of us - Tai, Rajani, Ashok and myself with all the nostalgia. But the backdrop of this meeting was very sad. Niludada was missing. He had left us. Corona and old age had taken its toll. We all were very miserable. We talked, shared memories, but in the midst, memories of Niludada kept surfacing again and again. It was as if we sat in a time machine and kept going back in time.

Tai, now Dr. Snehlata in Pune. Dr. Rajani, a Ph.D in Dharwad. Ashok and Ramesh are in USA with engineering post graduate degrees. Niludada in Florida. A family tree, with all of its members esteemed and illustrious in their own right.

With all the siblings and their families doing well for themselves, it was all

Niludada must have asked for. He had a place of his own in Pune. A house for all his brothers and sisters.

Niludada was finally in Pune. Perhaps he anticipated, it's a time to say goodbye. Through his mind, perhaps he revisited struggles of his past, days in Brazil, USA, the prosperity of his siblings, memories of his beloved wife, moments of joy and sorrow.

All his near and dear ones were with him as their guide, friend, affectionate to the core was leaving them forever. He had a content smile on his face.

Somewhere in the brightness of it all, his wife was waiting for him, waving at him, that I am here! Arm around the shoulder of his beloved, Niludada was on his way for the eternal journey.

- रमेश करमरकर



---

# Dr. Dhere treated us like a family

---

In 2006, since the first day we moved down to Florida, Neelkanth and Sucharita have always treated us like family. We had the opportunity to learn about each other's cultures, exchange meals and meet families. The amazing accomplishments Dr. Neelkanth and Dr. Sucharita achieved throughout their lifetime has been

inspiring to see. We are truly saddened by the passing of Dr. Neelkanth and wish the best to the entire family during this period of time.

Love from the Saad family

**- Suheir Saad**

# आमचे परमपूज्य दादा नीलकंठ ढेरे यांना श्रद्धांजली

अतिशय कष्टमय जीवनातून ज्ञानप्राप्ती करून घेवून अनेक विद्यार्थ्यांना ज्ञानदीप दाखवून त्यांना तेजस्वी वाटचाल घडविणारे डॉ. नीलकंठ ढेरे म्हणजेच आमचे परमपूज्य दादा यांना त्रिवार वंदन. त्यांच्या निधनाची अत्यंत दुःखद बातमी समजल्यावर खूप वाईट वाटले आणि डोळ्यासमोर एक चलन चित्रपट आला.

ही गोष्ट आहे एप्रिल १९६५ मधली.

गरवारे कॉलेजमध्ये आम्हा आठ मैत्रिणींचा छान ग्रुप जमला होता. बी.एस्.सी.चा शेवटचा पेपर संपल्यानंतर आम्ही सर्व मैत्रिणींनी मिळून एक बेत आखला. परीक्षेचा निकाल लागल्यानंतर सर्वजणी वेगवेगळ्या वाटेने जाणार, पुढे कधी भेटणार याची काहीच कल्पना नव्हती म्हणून सर्वांच्या घरी एक एक दिवस खाणपिणं, गप्पा अशी मौजमजा करायचे ठरविले. माझी मैत्रिण रजनी ढेरे ही तिच्या भावाबरोबर एन्. सी. एल्. च्या परिसरात रहात होती. एके दिवशी तिच्या घरी जाऊन जेवण आटोपून दादा च्या सल्ल्यानुसार आम्ही सर्व मैत्रिणी मिळून एन्. सी. एल्. पहायला गेलो. गेटवर दादाचे नाव सांगताच आत जाण्याची परवानगी दिली गेली. दादा फिजिकल केमिस्ट्री विभागात डॉ गोस्वामी यांच्या मार्गदर्शनाखाली संशोधन करत होते. त्यांनी आमचे आनंदाने स्वागत केले. ते त्यांच्या कामासाठी इलेक्ट्रॉन डिफ्रॅक्शन मायक्रोस्कोप या यंत्रांचा वापर करीत होते. त्यांनी आम्हाला त्याविषयी माहिती देऊन नंतर एक एक करून इतर सर्व प्रभागाची सफर करवून सर्व माहिती सांगितली. एन्. सी. एल्. ची आंतरराष्ट्रीय दर्जाच्या कामाची जाणीव झाली. पण आमच्या या वाटाड्याला सर्व माहिती मुखोद्गत होती. स्वच्छ आणि स्पष्ट मराठी भाषेत त्यांनी केलेले विवरण अजूनही माझ्या पूर्ण स्मरणात आहे.

फिरून फिरून पाय दुखायला लागले. एन्. सी. एल्. कॅन्टीनमध्ये गरम गरम चहा घेऊन बरे वाटले. नंतर दादाने आम्हा सर्वांच्या भविष्यातील योजनांबद्दल विचारले. आमच्यापैकी काहीजणींनी उच्च शिक्षण घेण्याचा विचार असल्याचे सांगितले. काहीजणींना शिक्षक व्यवसाय पाहिजे होता. मी व विजया

नातूने घरच्या परिस्थितीमुळे नोकरी करण्याची गरज असल्याचे सांगितले. आमच्या घरात मीच पहिली पदवीधर महिला असल्याने घरातून काही मार्गदर्शन मिळण्याची शक्यता नव्हती. त्या वेळी दादा खंबीरपणे आमच्या मागे उभे राहिले. एन्. सी. एल्. मधील रिकाम्या असलेल्या जागेसाठी त्यांनीच ऑफिसमधून अर्ज भरून आमच्या सहा करवून ताबडतोब ऑफिसमध्ये जाऊन दिले. एन्. सी. एल्. मध्ये त्या वेळी बी. एस्. सी. (केमिस्ट्री) लॅब असिस्टंटच्या जागेसाठी उमेदवारांची आवश्यकता होती हे नंतर कळले. या दर्जेदार संख्येमध्ये मुलाखतीसाठी बोलावणे येणे खूप कठीण आहे तसेच त्यांचे मुख्य कार्यालय दिल्लीत असल्याने या सर्व उपद्व्यापाला बराच वेळ लागणार असे सर्वांचे मत होते. त्यामुळे आम्ही अगदी निवांत होतो. परंतु दादाच्या हाताचे यश आणि धाकट्या बहिणीवर, माझ्यावर असलेली जबरदस्त माया यामुळे आम्हाला लवकरच मुलाखतीसाठी पत्र आले. ताजे ताजे ज्ञान असल्याने ८-१० जणांनी तावून घेतलेल्या मुलाखती मध्ये आम्ही दोघीही सिलेक्ट झालो. दादाना हे ऐकून इतका आनंद झाला की विचारू नका

अगदी निर्भेळ आनंद, निर्मळ मन, माझ्यामुळे झाले असा अहंकार नाही की गर्व नाही. त्यांच्यामध्ये पितृतुल्य मायेचा अविष्कार घडला. आम्ही दोघी २७ ऑगस्टला नोकरीवर रुजू झालो.

त्यानंतर माझ्या जीवनाला जी कलाटणी मिळाली ती अगदी आश्चर्याचा धक्का बसण्यासारखी आणि अविश्वसनीय आहे. अतिशय उच्च दर्जाच्या वातावरणात नोकरी करत करत शिकण्याची संधी मिळाली. Cream of the society अशा सहकाऱ्यांबरोबर आयुष्यभर बरेच काही शिकायला मिळाले. आवडीचे काम मिळाल्याचे समाधान लाभले.

मुख्य म्हणजे या एन्. सी. एल्. मध्येच माझे जीवनसाथी श्री. विनायक भालेराव यांची भेट झाली आणि मला सुसंपन्न वैवाहिक जीवनाचा लाभ झाला. आम्ही एन्. सी. एल्. च्या परिसरातच रहात होतो. तेथे मुलांना बुद्धीला पोषक असे वातावरण मिळाले. तीनही मुले १० वी व १२वी मध्ये अत्युच्च दर्जाने

उत्तीर्ण झाली. त्यामुळे त्यांच्या पुढील शिक्षणाचा मार्ग सुकर झाला- Red Carpet Welcome. मोठी मुलगी पुण्याच्या बी जे मेडिकल कॉलेजमधून स्त्रीरोगतज्ञ झाली तर मुलगा आणि धाकटी मुलगी पुण्याच्या सी. ई. पी. मधून अनुक्रमे मेकॅनिकल आणि इलेक्ट्रॉनिक इंजिनियर झाले. हे दोघेही अमेरिकन विद्यापीठात शिष्यवृत्ती मिळवून एम् एस् झाले. मीही एन्. सी. एल्. मध्ये ४० वर्ष यशस्वी रीतीने नोकरी पार पाडून २००४ साली सेवानिवृत्त झाले. नोकरी करत एम्. एस्. सी. आणि पी. एच्. डी. या उच्च दर्जाच्या पदव्याही प्राप्त केल्या.

अशा रीतीने माझ्या जीवनाची डौलदार इमारत दादानी घातलेल्या पायावर भरभक्कम उभी राहिली आहे. ह्या सफलतेचे श्रेय त्यांनाच जाते.



त्यांनी अनेक विद्यार्थी तयार करून हा विद्येचा महायज्ञ पूर्ण केला आहे. माझी खात्री आहे की त्यांचे शिष्यही हा वारसा पुढे चालवतील.

इवलेसे रोप लावल्या द्वारी

तयाचा वेलू गेला गगनावरी

दादा त्यांचे ज्ञान, वात्सल्य आणि सहिष्णु वृत्तीच्या रूपात सदैव आपल्यातच राहतील.

‘मरावे परी कीर्ती रूपे उरावे’ या उक्ती प्रमाणे दादा अमर आहेत.

- डॉ. सौ नलिनी विनायक भालेराव  
(पूर्वाश्रमीची नलिनी बाळकृष्ण पारखी)



---

# Tribute to Dr. Dhere - Our Dada

---

Getting the sad news about passing away of Dada on 27th August, took me down the lane to the year 1965, a very important year of my life!

We were 8 girls studying final B. Sc. class in MES college, Pune & had decided to visit every one's house before dispersing. My friend Rajani Dhere was staying in NCL campus with her brother Neelkanth who was doing Ph. D. in physical chemistry division of NCL. After having delicious food at Rajani's place, Dada suggested that all of us, being chemistry students, should visit NCL. Most of us were unaware of this Internationally well-known laboratory till then!!

Beautiful garden, big attractive buildings impressed us at the first sight. Afterwards we met Dr. Dhere in his laboratory. He was working on Electron Microscope. He then took us around to all the departments. I still remember different smells in various divisions. There were horrible odours except Essential Oils Division where we were welcome by sandalwood perfume.

Finally we were so tired after visiting the big laboratory that the canteen refreshing tea was a must. Then Dr. Dhere casually asked all of us about our future plans. Some of us were to continue further education. I was eager to take up some job because of family background. Dr. Dhere was surprised to hear this as he was aware of some vacancies for senior lab assistant's post. He immediately went to the office and got the forms. I & my friend Vijaya Natu filled the forms & he himself immediately submitted the forms!

I was never serious about getting interview call for such Internationally

recognised big Institute! However Dr. Dhere, my Dada's hands had some magic - his affection for me like his younger sister, brought success!! After tough interview by 10-12 well known scientists, I was selected for the post & joined my 'Karmbhoomi' NCL, on AUGUST 27, NCL has given me everything which I had never ever imagined!!

I owe so much to my dear Dada, Dr. Dhere! He has educated so many students in India & abroad and held many prestigious posts all over. But, for me he was an ANGEL sent by Great God! I served in NCL, for 40 years successfully. I got my loving life partner in NCL. My three children rose up in NCL campus. & all three of them are doing extremely well in their respective fields. My eldest daughter is a successful Gynecologist. My second daughter & youngest son did their M. S. degrees in USA on scholarships. In 40 years of my service, I achieved M. Sc. & Ph. D. degree in Organic chemistry with my sincere work that was assigned to me.

I always remember my loving brother Dada who is instrumental in my life's Success!

He will be always there along with us through his good nature, intelligence & unassuming personality!

'Trivar Vandan' to him. I am sure, all his students will continue his teachings & carry forward his legacy!

**- Dr. Mrs. Nalini Vinayak Bhalerao**  
(Former Ms. Nalini Balkrushna Parkhi)

---

# A Tribute to Our Friend Neelkanth Dhere

---

It has been a privilege to have known Dr. Neelkanth Dhere.

We first met Neelkanth, when he was in Rio de Janeiro in 1975. We were new comers to Brazil and met Neelkanth and Sucharitra at a Deepawali function. We found him very kind, compassionate, and a true gentleman. He was like an elder brother to us.

Whenever we needed guidance he was always there. We always admired how he never judged or forced his opinions on anyone, but offered valuable and truthful



advice and help that we will surely miss.

When I lost my very first job in a private company I was very depressed, as it was a sudden shock. He was kind enough to immediately arrange a job for me in his department as an assistant professor. Although I stayed on that position only for a few days because of a better opportunity elsewhere yet we still appreciate and remember his kindness and timely help.

Sucharitra and Neelkanth, immigrated to USA and we to Canada but we always had long chats on the phone and they visited us a couple of times.

When we were in Canada my wife needed a document from an American school in Rio where she had taught. Neelkanth played a major role in obtaining this document from the school through his colleague in Rio de Janeiro. This helped my wife to get her teaching experience recognized by Ontario College of Teachers quickly.

It's difficult to say farewell to Neelkanth, he has left us with so many wonderful

memories. We will cherish them forever.

When we love people it's so comforting to know that they will always be with us in our hearts.

Your friendship was a blessing and we will miss you Dr. Neelkanth Dhere!

**- Amarjit & Harmhinder Luthra**

Ontario, Canada



# मला भावलेले डॉ. निळकंठ ढेरे (काका)

डॉ. निळकंठ ढेरे... एक विनम्र, उत्तुंग व्यक्तिमत्त्व, अभ्यासू, सृजनशील संशोधक, उपक्रमशील म्हणून नेहमीच स्मरणात राहातील. ज्या ज्या वेळी त्यांच्याशी भेट झाली, त्या त्या वेळी भेटीतील त्यांचे गुण, त्यांच्याजवळील संवाद, विद्यार्थी व कर्मचारी यांच्याजवळील हितगूज कायमस्वरूपी आठवणीत राहतील.

देवखेरकी, ता. चिपळूण, जि. रत्नागिरी (महाराष्ट्र, भारत) या छोट्याशा गावात डॉ. तात्यासाहेब नातू स्मृती प्रतिष्ठान मार्गताम्हाने या संस्थेने ६ जून १९९६ रोजी माध्यमिक शाळा सुरू केली. सुरुवातीला भाड्याच्या एका घरात शाळा चालविली. नंतर शाळेसाठी जमीन खरेदी करून त्या जागेवर शाळेच्या इमारतीचे बांधकाम पूर्ण केले.

३ जानेवारी २०१० रोजी इमारतीचा उद्घाटन व नामकरण सोहळा पार पाडला. डॉ. सौ. सुचरिता निळकंठ ढेरे माध्यमिक विद्यालय देवखेरकी असे विद्यालयाचे नामकरण झाले. संपूर्ण ढेरे कुटुंबीय, मान्यवरांच्या उपस्थितीत व हजारोंच्या संख्येत सोहळा पार पडला. स्वतः डॉ. निळकंठ ढेरे, यांनी देखील उपस्थितांना संबोधित केले.

४ जानेवारी २०१० रोजी चिपळूण व गुहागर तालुक्यातील जवळपास १२० माध्यमिक शिक्षकांसाठी सौर ऊर्जेवरील कार्यशाळा डॉ. निळकंठ ढेरे व त्यांच्या फ्लोरिडा विद्यापीठातील दोन सहकाऱ्यांनी नेटक्या नियोजनाने घेतली. कार्यशाळेत प्रात्यक्षिकांवर अधिक भर होता. कार्यशाळेत प्रशिक्षणार्थी शिक्षकांचा उत्तम प्रतिसाद होता. प्रत्येक सहभागी शिक्षकाला कार्यशाळेची C.D. देण्यात आलेली होती.

डॉ. निळकंठ ढेरे यांनी ज्या ज्या वेळी विद्यालयाला भेट दिली, त्या त्या वेळी त्यांचा विद्यार्थी, शिक्षक व आम्हा सर्वांजवळ झालेला संवाद यातून त्यांच्यातील विनम्रपणा, साधेपणा व अभ्यासू व्यक्तिमत्त्वाची झलक पहावयास मिळाली. विद्यालयाला दिलेल्या सदिच्छा भेटीतून विद्यालयाच्या गरजांबद्दल चर्चा व्हायची व त्यांची पूर्तता देखील व्हायची. डॉ. सौ. सुचरिता ढेरे वहिनी यांना अवकाश निरीक्षणाचा व्यासंग होता. म्हणूनच डॉ. निळकंठ ढेरे यांनी त्यांचे बंधू रमेश ढेरे यांना विद्यालयासाठी दुर्बीण भेट देण्याची इच्छा व्यक्त केली व रमेश ढेरे कुटुंबियांकडून विद्यालयाला मोठी दुर्बीण भेट मिळाली. पुणे विद्यापीठात दुर्बीणीबाबतचे प्रशिक्षणही शिक्षकांना देण्यात आले. विद्यार्थ्यांनी अवकाश निरीक्षणाचा आनंद लुटला. विद्यालयातील विद्यार्थी अवकाश निरीक्षणाचा आस्वाद घेत आहेत. दुर्बीण विद्यालयाला उपयोगी ठरत आहे.

अशा पद्धतीने शाळेच्या उभारणीत, वाटचालीत डॉ. निळकंठ ढेरे व कुटुंबीय यांचे यागदोन फार महत्त्वाचे आहे.

डॉ. निळकंठ ढेरे यांना विनम्र अभिवादन...

- श्री. डी. एस. साळवी

मुख्याध्यापक

- डॉ. सौ. सुचरिता निळकंठ ढेरे

माध्यमिक विद्यालय, देवखेरकी, ता. चिपळूण, जि. रत्नागिरी

---

# Memories of My Guru - Dr. Neelkanth G Dhere

---

Aug 27, 2021 was a very emotional day for me. It was the day when I got to know the demise of my thesis advisor and mentor Dr. Neelkanth G. Dhere. I can't even begin to describe how much of an impact he has made in my life! Spending 7 years from 2002 to 2009 under his guidance helped to shape my intellectual life and also life in general. The relationship was just more than professional. All the students addressed his wife Dr. Sucharita Dhere as aunty. He and aunty were most caring and advising people for all the students in the lab. They were very humble and a very down to earth couple. They treated all students in the lab as family members.

Dr. Dhere was one of the pioneers in the field of Photovoltaic module development, reliability and durability. His contributions to the field are a testimony. The contributions do not stop with him. Majority of his students have landed jobs post-graduation in well know semi-conductor industries. They continue to contribute to the field with all the knowledge they acquired working under Dr. Dhere at FSEC PV Mat Lab.

There are a lot of instances worth mentioning about my experience with Dr. Dhere and aunty.

Dr. Dhere supported all his students with 100% funding from the beginning of their M.S. degree. Sometimes he went beyond to support the students economically. In 2002 July-Aug Dr. Dhere requested 2 of the newest students in

the lab to look for research assistantship with other faculties in UCF from Fall 2002 semester due to some funding cuts. I was one of the students. I got appointments to meet couple of professors in the next 1-2 weeks. However, Dr. Dhere managed to get funding arranged from me in the next 2 days and he asked me to continue working for him. Thanks to his continuous support. All his students had 100% funding support throughout their education at UCF.

Dr. Dhere always encouraged his students to trouble shoot and fix all the equipments in the lab to get hands on experience. He would also join the students in fixing the equipments. In fact, all the equipments in the lab and the outdoor test facilities were designed and built by students. Dr. Dhere would proudly mention this fact to all the people visiting the lab.

Dr. Dhere signed me up as a volunteer for the 2006 4<sup>th</sup> World Conference on Photovoltaic Energy Conference at Hawaii. I got a chance to visit the beautiful Hawaii. He was also passionate about spreading the knowledge about photovoltaic module reliability and durability. He taught a full day session at the conference and we recorded the lectures so that they can be used later to teach new students in the lab as and when needed.

I feel Dr. Dhere was ahead of the time in using new technology. He was very comfortable with the Toshiba branded laptops and always saw him buying the same brand until I graduated. In 2004-05 time frame he had a Toshiba laptop

with touchscreen and stylus pen. He found it easy to write all the notes rather than typing. Later, to make it simpler he adopted couple of software that would help him to dictate all the notes and let them convert to a word/text file. He used to meet a lot of researchers and scientists across the world and get their visiting cards. Sometimes he lost track of the cards. To avoid this, he purchased a visiting card reader which would automatically add the information from the card to his contact list. He really liked the idea of digital photo frames when they were launched. Dr. Dhere gifted them to lot of his family members and friends.

Aunty gave advice about taking over the counter medications couple of time when I fell sick. She would also follow up to check on our health. They would invite all the students to dinner during the holiday season every year and after a student's graduation. Aunty would cook all food and be ready when the students

reach home. During one such party we were talking about haircut. Aunty said, "the barber should charge Dr. Dhere double the price". We asked why? She said, "he has to find hair to cut". This was one of the funny instances that I remember.

Dr. Dhere was a task master at work. My journey in the lab was not completely smooth. I made mistakes during the graduate studies. Dr. Dhere still continued to support, guide and let me complete my doctorate degree. I will forever remain indebted to him for instilling strong work ethic and providing a strong foundation for my career. **THANK YOU!!**

You will be missed by so many!

May your soul Rest in Peace...

**- Dr. Vinaykumar Hadagali**

Ph.D. in Material Science and Engineering



---

# Down the memory lane with Dr. Neelkanth Dhere - A legend

---

My name is Shantinath Ghongadi and I was a student of Dr. Dhere from 1999 to 2001 at FSEC. I worked under his guidance on several projects to enable CIGS thin film solar cells. I would like to share my most cherished memories of Dr. Dhere with you. These stories will give you a glimpse into his strong character, brilliance, as well it is a tale of how he has touched and enriched the lives of many. He has helped shape me into being a better human being, a proud son, a loving husband and brother, a responsible father and a loyal friend.

My initial days at FSEC involved running experiments and buying lab materials such as chemicals, pumps, flanges, measurement devices and more. While the experiments were being run properly. Dr. Dhere noticed I was buying materials at their face value price without a bargain. He sat me down to explain how research funds are limited and how challenging it is to secure them. He stressed the need to use the funds wisely and stretch every dollar. With this wisdom and direction from Dr. Dhere, my goal from there onwards was to purchase all lab materials at a discount. Bargaining with vendors was at times hard, tedious and frustrating. But after a few months I got good at it. I worked hard for customizing my pitch on the research we were doing at FSEC to better connect with the audience. Soon I became very good at getting discounts and explaining the importance of the research being done. I noticed & understood some patterns for successful negotiations. Calling on a Friday right after lunch was the best time to get good

discounts- Happy Friday indeed!

After starting my job in the semiconductor industry, I realized the importance of this experience from Dr. Dhere. It served as a valuable lesson for connecting with people, communicating well and changing the pitch based on the audience. It taught me grit, to have a winning attitude and a sharp focus on the goals. Dr. Dhere not only helped me in getting a graduate degree but most importantly he gave me life skills. Skills that are important for professional and personal success. He gave me an opportunity to build thin film deposition systems from scratch that costed millions of dollars. These experiences laid a foundation for successful careers for all of his students.

Dr. Dhere set a great example for his students outside of work as well. He listened to everyone with great attention making them feel that they are special. He loved and respected his wife- they were a strong team. He cherished his friends. He loved his students as if they were his kids. He kept himself healthy by exercising daily and watching his diet. He often said sweet and spice have a fixed amount or quota in one's life, either you eat all at once without control or you can be wise by eating them in moderation for your entire life. The choice is yours.

Today Dr. Dhere's students work for renowned companies like Intel, Applied Materials, Lam Research and more. They help produce semiconductor chips with the skills learnt from Dr. Dhere at FSEC. These chips are used in cars, iPhones,



iPads, laptops, computers, servers, medical equipments etc. So next time when you see or buy these devices for yourself, family and friends let it serve as a reminder that Dr. Dhere and his students are helping to build them. Dr. Dhere produced outstanding leaders and researchers at FSEC who are now enabling these devices. Dr. Dhere's legacy lives in not only the thin film solar cells but also in every electronic device out in the market.



Dr. Dhere had a wonderful & impactful life. He was a trailblazer and a visionary who wrote the story of his life. It is my privilege that his brilliance touched and embraced me. He may not be present with us today, but his legacy and memories will stay forever with us. I believe he is born somewhere in this world and will continue enriching lives. Thank you,

**- Shantinath Ghongadi**  
Senior Director, Lam Research





---

# Memories of Dr. Dhere and Aunty

---

May the soul of Dr. Dhere and aunty rest in peace.

Dr. Dhere will be always remembered as the most loving mentor that I had in my life. The relationship was always more than just professional. Both Dr. Dhere and aunty were like parents to me while I was pursuing my career in USA. I am sure this sentiment is shared by all his students. I came as a master's student and was planning to get a job or return back to India, but Dr. Dhere convinced me to do a Ph.D. It has been 15 years since completion of Ph.D. and looking back I realize that was one of the most important decision of my life.

There are couple of occasions worth mentioning where it clearly exemplifies how they were integral part of our family and how they took care of us.

During the last few months of my Ph.D. work, me and my wife moved closer to the lab, I remember both Dr. Dhere and aunty visited our place and just like family provided all the support to us to settle down comfortably in the new locality. Every weekend aunty used to call my wife to ensure we are ok, the moral support really helped me because my wife was alone and I had to spend most of my time in completing the thesis.

Later when we moved back to India, I remember he had come to IIT Bombay as a guest lecturer on solar project. We were privileged to host him for dinner.

From our earlier days we knew he liked eggplant and hence my wife cooked brinjals which he mentioned he would like to have it again during his next visit, which unfortunately never happened.

My parents also have fond memories of meeting him in Nashik (my hometown) where he had come to offer prayers for Mrs. Dhere. They remember him as a very humble and down to earth person.

One thing that I will remember for ever from my days in the lab is – On his way back home from office he would stop by at the lab on a Friday evening and he would wish all of us “have a good weekend” and following that sentence was the most interesting part, he would say “I will see you tomorrow, lets discuss the data” and all that excitement from his earlier sentence use to die out. He always challenges us to do our best to come up with world class result. There were so many things we learned during those Ph.D. days apart from studies that really shaped our future. I will always be indebted to him for giving me this career.

May his soul rest in peace.....

– **Ankur Kadam and Family**

Ankur Kadam is working as Director,  
Process Engineering at Applied Materials India



---

# Remembering the unforgettable Dr. Dhere

---

---

I would like to imagine that Dr. Dhere and Sucharita aunty are watching us all proudly from their heavenly abode today.

During his lifetime, Dr. Dhere was well known and absolutely adored by his students. I am certain that everyone who worked with him has plenty of stories to recount from their days at the Florida Solar Energy Center.

I had interacted with Dr. Dhere over email before I arrived in Orlando in 2002 and found him to be very humble, considering how highly educated and well traveled he was. Besides sending me tips on preparing for my arrival in USA, he had strongly urged me to learn how to drive before going to the US - something that I would not have pursued seriously otherwise.

I had the privilege of working for 2.5 years at the Florida Solar Energy Center with Dr. Dhere and his research assistants. I was one of the few electrical engineering students among material science students at that time. He made sure that newcomers were comfortably adjusting to the environment and no one felt excluded. He would organize Diwali get-togethers and lunch at Woodlands in Orlando for all students to celebrate milestones. He was a great example of how someone could imbibe integrity and excellent work ethics in the US while not losing sight of Eastern culture. He always had some amusing stories to tell us about his own past experiences.

During the years I worked at FSEC, Dr. Dhere assigned me some very interesting and challenging tasks which involved LABVIEW automation of the

deposition process for solar cells and measurement of characteristics of solar cells. We would all gather around the laboratory set-up and be super excited to measure the efficiency of solar cells with our in-house equipment. Dr. Dhere would encourage us to try out new experiments and it was always a great learning experience. I would travel 70 miles at least 4 days of the week but never felt exhausted as I would be always excited and looking forward to meet Dr. Dhere and my PV Matlab friends. He gave me the opportunity to create slides and help edit or co-author articles for the group.

Dr. Dhere took keen interest in the personal development of each student and was well aware of their family background and circumstances. He would always be delighted to see his students transformed into smart, professional, confident and independent individuals.

He stayed in touch with his students even after they graduated and spoke over the phone with his students about their progress. He would be prompt and supportive if anyone needed a recommendation letter. We had gatherings in the Bay Area few times and I had been looking forward to many more such occasions. He knew that I had a tendency to ignore my health and persuaded me to pay more attention to fitness. Fortunately I still have his voicemail from 2016 in my phone - I still listen to it when I need motivation from Dr. Dhere to live purposefully and meaningfully.

**- Jyoti Shirolikar**

---

# My Idol Dr. Dhere - My Polaris

---

It was summer of 2004, when back-to-back hurricanes affected normal life in Orlando, Florida and I was just starting my Ph.D. That experience is still in my memory, however, that year gave me more than just hurricane experience. That year gave me some good friends and with them a true idol, Dr. Dhere. Like me and many students who came from India and were away from parents, we needed someone whom we can consider as our gold standard for life values, like a Polaris star in northern sky. My friends introduced me to Dr. Dhere, as a person who could fix their furnace control system broken due to hurricane in FSEC. When I met him, first time at FSEC, he said: "Hello, Dhaval, how are you?" with somewhat familiar accent that reminded me my family back home. With that greeting voice, I knew, I found my idol, the guide star.

There are just too many experiences with him that showed how simple, hardworking, kind and true believer of human being, he was. I have seen him going for exercise early on Saturday and coming to FSEC to check on us doing experiments. I remember him having daily schedule for coming to lab asking what is going and giving directions. I remember him giving party to everyone for

any small/big achievement. I remember him, inviting new students and their families at home party. I remember him working on touch computer and learning about computer with enthusiasm of a kid. I remember him helping student whom he believed can do good and checking on them regularly. He made me present classes to improve my presentation skills and speech. He was tough at times and gentle at times like a father figure. He in fact, called me back when I needed Green Card support letter and check with me how my family and kids are doing.

All of the time, when I have seen him, I always wonder how he could do care for all of us and with such dedication to research, science and education. It must take great deal of commitment for anyone. However, to me, all of his acts look natural like a great artist, who has not only perfected his work but it has become part of him, a habit, and a life truly lived with meaning. To me that is why he will remain my idol, my Polaris. I really, thank God that He gave me the experience to work with Dr. Dhere in life, whose values can stand like rock even in middle of hurricane, and give us direction and support.

**- Dhaval Shah**



---

# My Idol Dr. Dhere

---

*कबीरा जब हम पैदा हुए, जग हँसे, हम रोये ।  
ऐसी करनी कर चलो, हम हँसे, जग रोये ॥*

Sant Kabir says, “When we are born, we are crying loudly, while the world surrounding us is celebrating and happy. We should do such deeds in life that when we die, we will be laughing while the world surrounding us cry in distress and loss.”

Dr. Neelkanth Dhere’s life and deeds match word to word with Sant Kabir’s this doha. He transformed life of so many people and mine is one of them. He had profound influence in shaping my character and people surrounding me. I finished my MS and PhD under Dr. Dhere between 2000-2005. I was the first PhD student graduated under Dr. Dhere. He was a real mentor. Not only guiding with the actual grad studies, but also guided as a godfather with any kind of

problems. Me and my wife Shruti Jahagirdar, looked upto Dr. Dhere and Mrs. Dr. Dhere (that’s what we all used to call Sucharita aunty) as parents here far off from our motherland. Both were father/mother figures for all of us. Dr. Dhere, was a man of principles, man of discipline. Believed in doing the Karma in a right way, facing any kind of situation with a positive attitude. That’s what we as his students learnt which helped us immensely.

An era of principles, an era of discipline, era of helping so many students and an era of brilliance ended. Truly, truly honored. For sure we did some good Karma in our previous janma, that we got to be part of that amazing soul. Learnt so much from him. He transformed/shaped so many of our lives.

OM Shanti...

**- Anant Jahagirdar**

---

# पालकांना परदेशात आश्वस्त करणारे डॉ. नीळकंठ ढेरे

---

सौरशक्तीचा वेध घेणारे आंतरराष्ट्रीय वैज्ञानिक डॉ. निळकंठ ढेरे (वय अंदाजे ८२ वर्षे) यांचे वृद्धापकाळाने दुःखद निधन झाले. हे ऐकून मला व माझ्या कुटुंबियांना अतिशय दुःख झाले. त्यांची व आम्हा उभयतांची प्रत्यक्ष भेट दिनांक २१-२-२००० रोजी त्यांच्या आईच्या दुःखद निधनानिमित्त झालेल्या विधीसाठी ते पुण्यात आले असता झाली होती. त्यांचे व्यक्तिमत्त्व अतिशय सालस, समंजस व सामान्यात मिळून मिसळून वावरणारे असे आम्हास जाणवले.

माझा मुलगा मंदार हा एम.एस. करण्यासाठी फ्लोरिडा, अमेरिका येथे त्यांच्या सक्षम मार्गदर्शनाखाली शिकत होता. त्याच्या काळजीपोटी आम्हा उभयतांस त्यांनी खूपच छान धीर दिला व त्याची काहीही काळजी करू नका मी (म्हणजे ते) आहे तिथे तुम्ही अजिबात चिंता करू नका असे आश्वासन दिले.

त्यामुळे आम्ही उभयते निर्धास्त झालो. अशा प्रकारे पालकांना परदेशातही आश्वस्त करणारे मार्गदर्शक लाभले. हे आम्हां पालक वर्गाचे भाग्यच!

कै. डॉ. निळकंठ ढेरे ह्यांच्या आत्म्यास चिरंतन शांती व सद्गती लाभो हीच आम्हा समस्त पंडित कुटुंबियांची परमेश्वर चरणी हात जोडून नम्र प्रार्थना! तसेच आम्हा समस्त पंडित कुटुंबियांतर्फे त्यांना भावपूर्ण श्रद्धांजली!

- **बी. एम. पंडित**  
(मंदारचे बाबा)



---

## भाव सुमन

---

जैसे व्योममण्डल भास्कर शिरोमणि,  
तैसे ज्योतिर्मय किरण प्रभा त्यांची,  
अणुरेणू पसरुनि उजळून ज्ञान दीप,  
एक दृष्टा गभस्ती जीवन दर्शन जे,  
ज्याचा विविध प्रतिभेचा तोची एक असे  
सुखधाम,

आता कैसे वर्णवू तेजोमय रूप आगळे जे,  
आठवूनी ज्यासी होतसे मन हळवे भाव मवाळ,  
तोचि देत असे प्रत्येकाशी आशिर्वाद जीवन विकास,

जा उडूनी जा पाखरा गगनाचा उंबरठा हे असे  
वाक्य जयांचे,

पसरूनी पंख आशांचे उजळूनी दिशा दिशा,  
ऐसे प्रत्येक क्षण टिपूनी त्यांची संगती जणू  
मकरंद मधु सुगंधाचा,  
हाची अमोल ठेवा आमच्या संगती राहिल  
तो चिरंतन त्यांचा

- मंदार पंडित



---

# In memory of Dr. Dhere and his Brazil connection

---

---

This lovely poem was written by Mario de Andrade (Sao Paolo 1893-1945) Poet, novelist, essayist and musicologist. He was one of the founders of Brazilian modernism.

---

## MY SOUL HAS A HAT

I counted my years  
& realized that I have  
Less time to live by,  
Than I have lived so far.

I feel like a child who won a pack of candies: at first he ate them with pleasure,  
But when he realized that there was little left, he began to taste them intensely.  
I have no time for endless meetings where the statutes, rules, procedures &  
internal regulations are discussed,  
knowing that nothing will be done.

I no longer have the patience  
To stand absurd people who,

despite their chronological age,  
have not grown up.  
My time is too short:  
I want the essence,  
my spirit is in a hurry.  
I do not have much candy  
In the package anymore.

I want to live next to humans,  
very realistic people who know  
How to laugh at their mistakes,  
Who are not inflated by their own triumphs  
& who take responsibility for their actions.  
In this way, human dignity is defended  
and we live in truth and honesty.

It is the essentials that make life useful.  
I want to surround myself with people  
who know how to touch the hearts of those whom hard strokes of life  
have learned to grow, with sweet touches of the soul.

Yes, I'm in a hurry.  
I'm in a hurry to live with the intensity that only maturity can give.  
I do not intend to waste any of the remaining desserts.

I am sure they will be exquisite,  
much more than those eaten so far.

My goal is to reach the end satisfied  
and at peace with my loved ones and my conscience.  
We have two lives  
& the second begins when you realize you only have one.

**- Abhijit Deshpande**





---

# In Memory of Dr. and Mrs. Dhere

---

This is Kaustubh Gadre. It took me a while to process that Dr. Dhere is no more. My sympathies are with all Dr. Dhere's family members and student community spread across continents. Here are few words I can scribble down. I miss them both immensely.

Last Friday got sad news that Dr. Dhere passed away. My memory lane went back 25 years. Dr. Dhere had selected me as his M.S student for class of 1996. It is an honor to call myself Dr. Dhere's student. Infact I became part of his extended family right away. He came to airport to pick me up, as student assigned was not able to make it. I stayed 3 days with Dr. and Mrs. Dhere and never felt that I had left home back in India. FSEC and Dr. Dhere's residence was home away from India for 2 years and I thoroughly enjoyed every minute of it.

Mrs. Dhere was integral part of FSEC student community working with Dr. Dhere. She gave me license manual 2nd day after arriving in USA and took me for my learning permit exam in her car and waited for my exam to finish. I will never forget happiness she felt when I told her I passed. It was big deal for me. I still remember when she asked me about "Cereal" breakfast in the morning and I was utterly confused as did not know what "serial" breakfast is. I told her that I can just eat apple which I had seen in her kitchen.

Dr. Dhere's house is the place for Diwali celebration for all students while I

was at FSEC. Both Dr. Dhere and Mrs. Dhere made sure students feel at home. Dr. Dhere always took us, all his students to dine with visiting colleagues, for major achievements with publications, posters, etc. His favorite place was Olive garden and favorite food at restaurant was eggplant parmesan, which even my kids love today.

As a professor and teacher, Dr. Dhere guided me through course work, publishing papers, writing thesis. I had not seen Dr. Dhere raise his voice or even made any harsh comment even experiments went bad due to my or any other student's mistakes. For him its learning process and made sure we understand that. He encouraged participation in various academic societies and instrumental in writing recommendations for my future studies at Arizona State University.

Dr. Dhere gave me opportunity to be in USA by providing moral support needed. Dr. and Mrs. Dhere are vital part of my professional and personal success. I am in USA because of Dr. Dhere and I cherish that fact with pride. Both are not in this world physically but will always remain with me!

Thank you for giving me this opportunity to express my few words.

Regards,  
**- Kaustubh Gadre**



---

# Running 5K's with Dr. Dhere and Learning Many Life Lessons Along the Way

---

It is nice to virtually meet you, Dr. Dhere!

I hope this finds the both of you and your loved ones in the very best of health.

Your brother was quite an amazing individual as was his lovely, kind wife. I so looked forward to being invited over to their place for a delicious home cooked Indian meal! I also absolutely loved running with Neelkanth around FSEC during our lunch breaks and at the IEEE Photovoltaic Specialist Conference's 5K in Las Vegas during the wee hours of the morning. The streets of Las Vegas were vacant except for a few bleary eyed gamblers stumbling out of the hotels and us crazy engineers and research scientists from that IEEE conference running around the city! I have learned so much from Dr. Dhere from when I was his graduate student from the latest thin film solar cell technology experimentation and to never, never, never giving up regardless of how frustrating your research may be going in FSEC's Hydrogen Lab and how many brick walls you might be running up against

to creative thesis research strategies to even good health tips. I still eat fruit before anything else for breakfast just because Neelkanth suggested that I do that for continued good health! I can still hear him every morning reminding me to eat the fruit FIRST! He had such a strong work ethic. Dr. Dhere worked exceptionally hard at every thing he set out to accomplish and expected that of his graduate students as well. He was such a great role model. You are quite blessed to have had Neelkanth as a brother as I was blessed to have had him as an MSEE degree thesis advisor at FSEC.

peace & joy.

**- Deb Hall**

Ed.D., M.S.E.E., Valencia College Energy Management  
and Controls Technology Program Chair  
Electrical and Computer Engineering Technology Professor

---

# Solar and thin film industry will miss him

---

---

Sorry about the loss due to Dr. Neelkanth Dhere passing away.

It was nice to hear from all the pleasant memories shared during the zoom call. He was definitely a gem of a person, very hardworking, caring and ambitious. He and Sucharita aunty never let us feel away from home. We relish all the memories, especially the ones where we get to meet during holidays, new student arrival and such parties at his residence. During my time with him 2000-2003 we had over 10 students and he took care of each and every student and had a plan to make sure they graduate and receive the financial aid while they focus on the research and studies. I was offered the privilege to do Ph.D. though I was not fortunate to continue in his team since I got an offer to work and decided to join

the workforce instead. On the other hand I was fortunate to be working in the solar field and used to meet him during the conferences. He used to always sit in the first row and be very inquisitive asking questions and providing constructive feedback. The solar and thin film industry will miss him and his leadership. I am very grateful to him for teaching us and providing us with the tools to be successful in the industry. I am sure his and Sucharita aunty's souls are together in peace somewhere at a very happy place.

Sincerely

**- Vivek Gade**

Sr. Engineering Manager  
Jatila



---

# Dr. Neelkanth G. Dhere Memoir

---



Dr Dhere's lunch treat at Woodlands (Orlando)

Sitting left to right: Parag Vasekar, Dr. Mrs. Sucharita Dhere, Dr. Neelkanth Dhere, Sachin Kulkarni, Shirish Pethe, Dhaval Shah, Vinay Hadagali, Upendra Avachat, Sandeep Chadha, Ankur Kadam, Rajeev Chauhan, Anant Jahagirdar.

Not in the picture: Jyoti Shirolikar (clicking the picture)

Hello, my name is Sachin S. Kulkarni, I was a graduate student of Dr. Neelkanth G. Dhere for my M.S. (Materials Science and Engineering) and Ph.D.

(Materials Science and Engineering) from 2001-2008 at UCF Orlando FL, since completing my Ph.D. I am working as a process engineer at Intel Corporation in Hillsboro, OR. I got to know about Dr. Dhere's photovoltaic materials research



Group picture after dinner (2006)

Front row (L to R): Vinay Hadagali, Dhaval Shah, Bhaskar Kumar, Jyoti Shirolikar, Twinkle Shah, Mrs Sucharita Dhere, Asawari Kulkarni, Dipa Kadam

Back row (L to R): Santosh Khatri, Parag Vasekar, Upendra Avachat, Ashwani Kaul, Shirish Pethe, Anant Jahagirdar, Sachin Kulkarni, Ankur Kadam, Dr Neelkanth Dhere



Listening intently while a student was singing  
Graduation photo



From left to right- Dr. Ramesh G. Dhere, Sachin Kulkarni,  
Dr. Neelkanth G. Dhere, Asawari Kulkarni

group at Florida Solar Energy Center (FSEC) part of University of Central Florida (UCF) through one of my friends who was pursuing his M.S. while working as a graduate research assistant in Dr. Dhere's group.

I still remember reading Dr. Dhere's first email prior to coming to US for graduate studies, he had very clearly written what to expect during graduate school including amount of daily travel from Orlando to Cocoa. He was incredibly detailed oriented, I enjoyed working under the guidance of Dr. Dhere for my M.S. and Ph.D. and learned a lot from him. He had very sharp memory and used to remember not only what issues we resolved several months back but also all the minute details relevant to that issue. I remember when he used to come back from any conference, we used to have a meeting dedicated to what he learned during the conference and what can we do to implement these learnings. I feel lucky to have had such guidance during my graduate studies. Apart from studies myself and Dr. Dhere's research group always felt at home in Florida due to

presence of Dr. Dhere and Dr. Mrs. Sucharita Dhere, both were delightful, warm, and gracious. Both were supportive to me and my wife during my mother's cancer treatment and later when my mother passed away.

We frequently used to have get-togethers at Dr. Dhere's home, during Diwali and other times. We used to have dinner and chat, sing songs etc. till late night. Dr. Dhere and Dr. Mrs. Sucharita Dhere used to invite our entire group along with families and make a home-cooked meal every Diwali. I remember Dr. Mrs. Sucharita Dhere sending strawberries, lychees to us with whipped cream. We used to miss "aamras" (mango pulp we used to have back home in India especially during summertime) during our stay in USA, so she used to specially prepare it for us!

Dr. Dhere was incredibly supportive throughout his life. We will deeply miss him for years to come. May his soul rest in peace!

- Sachin S. Kulkarni

---

# Memories of Dr. Dhere

---

I wanted to take this opportunity to pen a few thoughts about my research advisor Dr. Neelkanth Dhere. It was the spring of 1992, that I was given an opportunity to work under his guidance. It was an exciting opportunity to be working in your area of passion (Renewable Energy) under a pioneer in the field @ the renowned Florida Solar Energy Center (FSEC). His first question was “Can U drive?” - I said “no” but can quickly learn. Later I realized FSEC was 1hr+ drive from the university campus hence the question from Dr Dhere. When I bought my first car, he looked at it, shook his head & was unhappy due the external state of the car (rusted- 1980 rebuilt Toyota Corolla). He turned around & said - “ I don’t think this car is safe, do you need financial help to buy a different car? That was the genuine concern he had for his students whom he treated as his family. My colleague (James S) & I had the unique opportunity to build a lab from scratch under Dr Dhere’s guidance. This opportunity gave me (a Mechanical

Eng. student) exposure into Materials Science & opened doors into the semiconductor industry. We did the planning, procurement, installation & start up of the lab. Skills that I use to this day. We had several renowned global scientists visiting the lab & he gave students an opportunity to interact with them. On the personal front he invited his students to dinner’s at his place & made us feel at home. Thanks to his leadership, I had the opportunity of spending a week at the “Oakridge National Lab” with him. I am ever indebted to Dr Dhere for giving me an opportunity to support his dream/vision. I owe my current success in the semiconductor industry to the foundation provided by Dr Dhere. We miss you & know you are in a safe place. Om Shanthi Dear Dr. Dhere!

**- Shanker Kuttath**

UCF - FSEC - 1992 to 1994

---

# Dr. Dhere - Not just a PV Researcher, but an all-around supporter of his Student Team

---

I had moved from Physics to EE and was looking for financial support. Dr. Dhere appeared at the right time. I started in the summer of 1991. He must have started at FSEC just prior to that (1990/1991), and he did not have a fully funded project for a thin films lab. However he had a small funding for a modeling project which helped bring me in and start that summer. I did not have a car, but he helped find a FSEC staff member to give me a ride. This FSEC staff member was living close to UCF and was driving from near the UCF area who to FSEC every day. At that time his office and the desk I had were in a trailer about a mile from the main FSEC campus in Cape Canaveral.

By the end of summer, funding for the thin film lab got confirmed (1st NREL grant) and I bought a car so I was not constrained to a 8-to-5 schedule. Building the lab from zero was a great experience. Dr. Dhere was very energetic not just in resolving lab issues but physically as well. Walking between buildings he had a faster stride that was a challenge to keep up with :-). He joined with a fellow runner in FSEC (Bill Rutledge I think) to get the FSEC management to put a shower to help lunchtime runners. He was so excited when they installed the shower and that enabled him to start his mid-day jogging. He was instrumental in organizing the SunRun, a running event during the summer of 1992. Not sure if it was an annual event. I was not into running at that time, it was only years later when I started running I would think of the vigor he had to motivate myself.

By summer 1993 we had three deposition chambers and a selenization chamber. It was not just hard skills like thin film equipment modeling, deposition and characterization that I gained but a lot of soft skills that I would realize decades later.

It was really an on-the-job training for skills that would lead to roles like Supplier Engineer, Commodity Manager in the Industry. His attention to detail was amazing - you could see from his handwritten samples attached - these were from the modelling phase of the thin film deposition equipment. I don't recall him referring to a textbook when going through these calculations. When he was not in the lab or running he was at his then state of art 10 pound laptop that featured a nice monochrome display :-)) where you could pretty much count each pixel. He religiously took the laptop home every evening - which I assume meant that he did some 'office work' at home. As one can imagine he was probably fine tuning his proposals or quarterly reports to funding agencies.

Once we started building the equipment and depositing films, days were long and ours would be the only cars in the parking lot when we got around to leaving for home. With all the staff having left backyard wildlife would come to graze,-) armadillos and bunnies were seen frequently within a few feet. If I had not left so late, I would never have seen armadillos in the wild in such close quarters.

When I decided to leave in fall of 1993, Dr. Dhere tried to convince me to

stay. I am not sure of the difficulties he went behind the scenes to make happen, but if my memory serves me right, he offered me a full time job role. However I had already decided to try my luck with the industry and hence left in the fall of 1993.

In his early days at FSEC, although he had the full support of upper management, I felt he had challenges to overcome from mid-level staff at FSEC. Dr. Dhere gave me the opportunity to attend a PV Specialist meeting in Louisville, Kentucky. Dr. Dhere and Sucharita-ji hosted us on quite a few occasions at their house. On occasion we went to a restaurant, typically when there was someone from NREL, his choice of restaurant was always Olive Garden which I enjoyed. I enjoyed food cooked by Sucharita-ji, one item that was there most of the time

and that I never found elsewhere was stuffed mushrooms. They were delicious.

He was very respectful when hosting contract managers from funding agencies or director & above level staff from various institutions, even though I felt some of the contract managers had less technical breadth than Dr. Dhere. I am very grateful to Dr.Dhere for helping provide assistantship that helped me complete my EE. Hands-on skills I acquired under his guidance is continuing to help gain my paycheck to this day. Thank you Dr.Dhere for all your guidance and support. Thank you Sucharita-ji for entertaining us not once, but many times that made us feel a part of the family.

**- James Santiago**







---

# SBV web announcement

---

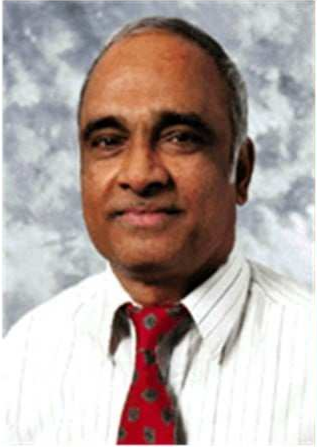


**NOTA DE FALECIMENTO**

Sociedade Brasileira de Vácuo

**1ª Eleição da SBV**  
*Diretoria Executiva 17 de maio de 1978,*  
Presidente: Prof. Neelkanth G. Dhere (IME, RJ)  
Secretário: Prof. Wolfgang Losch (COPPE/UFRJ)  
Secretário: Prof. Carlos Ignácio S. Mammama (UNICAMP)  
Tesoureiro: Prof. Gilson Brand Baptista (PUC/RJ)

É com pesar que comunico o falecimento do Prof. Neelkanth Dhere na tarde de 27 agosto, em Puna, Índia. O Prof. Dhere foi um dos fundadores e o primeiro presidente da SBV, tendo participado ativamente da Sociedade durante sua primeira década de existência. Nesse momento de profunda dor a SBV manifesta aos familiares e amigos as mais sinceras condolências.



(SBV- Obtiuary)

---

# Messages from FSEC Colleagues

---

---

September 10, 2021

This is a compilation of what many of Dr. Neelkanth Dhere's friends and colleagues said about him after learning he passed away on August 27, 2021.

We learned this morning through Safvat the very sad news that Dr. Neelkanth Dhere succumbed to COVID-19 recently while visiting India. As many of you know, Neelkanth served as an employee of FSEC for multiple decades and was a national pioneer in the research and development of vacuum deposition, thin-film PV cells.

—Philip Fairey

—  
I had the privilege to assist Dr. Dhere for decades and one striking observation was his relationship with his students who worked at FSEC. Neelkanth had many students throughout the years. He treated them like his kids and referred to them as “my colleagues”. The students followed Neelkanth like one would follow a maestro and with extreme respect.

—  
Neelkanth brought and nurtured only positive energy when he visited and always with smile and kindness. Remember that Neelkanth believed when a person

dies, their Atman is reborn in a different body. So lets hope we run into Neelkanth in his new body!

—Safvat Kalaghchy

—  
I had the privilege of knowing Neelkanth from the late 70s, and always felt that I was in the presence of someone special. We also got to visit a couple of years ago while he was visiting FSEC between trips to Brazil, truly a pleasure seeing him again.

—Doug Kettles

—  
Dr. Dhere was a kind and gentle soul. I remember that he was always very appreciative of the work the “Graphics” department did for him. After a big accomplishment, he would sometimes bring in food that his wife made. I enjoyed when he shared things about his culture. For instance, he would go office-to-office and pass out candy made in India on Friendship Day. He also shared his tea biscuits with me. I was amazed to find out several years ago that he was much older than he actually looked. He said the secret was that he drank green tea every day. I miss him and his student colleagues. His students always seemed to get scooped up by industry. That in itself is a tribute to his work/mentoring.

—Sherri Shields

---

I have not directly worked with him but shared talks in lunch room. I used to be amazed how neatly he used to arrange his lunch plate. We both speak same mother tongue and used to talk about happenings in our native places.

His work at FSEC is commendable but his work and dedication to run a school in India was exceptional. He told me that he visits India to help the school. He will truly be missed.

—Ujjwala Magdum

---

I had so much respect for Dr. Dhere. He was kind, courageous, gentle, open-minded and so funny. I don't know that people really got to experience his sense of humour. He made the world a better place. I was so fortunate to get to know him, work with him and meet his wife at one of those visits to his home to eat delicious treats and celebrate the "new year." Meeting his wife's family in India, as well as his sister and niece was an honor. They all welcomed us into their homes, fed us incredible meals, explained traditions, and even let us experience some of those. We did work while in India, but he also made sure we got to see historic sites and the natural beauty and environmental diversity in the different areas of India that we visited. I got to dip my toes in the Arabian Sea and eat the best tasting just picked mango in the world!

He was highly respected and revered in the little village where we did our first teacher workshop, as well as at the school near his wife's childhood home. This school was groundbreaking in that girls were encouraged to attend and dorms there made it even more possible for them to do so. There is a story in that!

I also have an FSEC story about him, too—one of my first encounters with him. It showed me what a huge heart he had and how he cared about everyone. That story involved a missing laptop. I would be happy to explain further or share a story or two about him and our trip to India.

—Susan Schleith

---

With great sadness, I am sharing the news of Dr. Neelkanth G. Dhere, who recently died of COVID while in India. I came to know this news from Dr. Davis. Dr. Dhere was with the Florida Solar Energy Center (FSEC) at UCF and contributed to our MSE program since we started in 2000. He hired many MSE PhD students and taught many MSE elective courses. Many of his students (MSE) are well placed in Intel, Motorola, Applied Materials, and many other solar energy companies. He retired from FSEC several years back and was enjoying his retirement life in Merritt Island. While many of you may not know Dr. Dhere, I thought I would share this news since he really helped our MSE program and was a great colleague of mine and others in the department.

Dr. Neelkanth G. Dhere worked at since 1990, where he held the position of Program Director. He was also a Joint Professor at the UCF Departments of Mechanical, Materials and Aerospace Engineering and Electrical and Computer Engineering. At FSEC, he created a world class lab in the field of photovoltaics, with notable accomplishments including: the preparation of  $\text{CuIn}_{1-x}\text{Ga}_x\text{Se}_{2-y}\text{S}_y$  (CIGSeS) photovoltaic cells by selenization/sulfurization; the preparation of small area CIGSS cells with high efficiency values (13.73%); the development of 8.64% efficient photoelectrochemical cells using thin-film photovoltaic cells and  $\text{RuS}_2$  photoanodes for the generation of hydrogen by splitting water; and investigations of photovoltaic module reliability under long-term exposure conditions. He was a Visiting Senior Research Scientist at the National Renewable Energy Laboratory (NREL) in Golden, CO during 1986-1990. He was the first in the U.S. to prepare high  $T_c$  superconducting thin films ( $T_c > 80\text{K}$ ) based on bismuth in 1988. He worked as a Professor of Materials Science and Engineering at the Instituto Militar de Engenharia in Rio de Janeiro, Brazil, during June 1971-1986.

Dr. Dhere was the eldest Ph. D. in the family holding the Guinness Book World Record for most doctorates in a family (all five members, including three brothers and two sisters all born to the same parents). He is a Fellow of the

American Vacuum Society (AVS, 2003), as well as the Founder-President (1979-1980) and Emeritus Member of the Brazilian Vacuum Society. He was the Chairperson of the SPIE Reliability of Photovoltaic Cells, Modules, Components, and Systems Conference in 2008 and 2009, Chairperson of the AVS Florida Chapter in 2004, Program Chairperson of the Joint Symposium of the Florida Society for Microscopy and Florida Chapter of the AVS in March 2005, and Co-Chair of the National Thin Film Module Reliability Team since 2002. He received the 2003 UCF Research Incentive Award, and Institute of Electrical and Electronic Engineers Region 3 Outstanding Engineer Award in 2002.

May his soul Rest in Peace.

—*Sudipta Seal*

—  
Not too many years ago –maybe 3 or 5 – we had about 15 -20 visiting researchers come from Brazil for a day. We occasionally have international visitors and usually the FSEC director or one of the other executives plays host as I did in this case. There is always one or more interpreters, sometimes with some nice microphone/headphone equipment so only those needing the interpretation hear it. Fortunately, Neelkanth came and since he had spent years in Brazil he needed

no interpreter. The hired interpreter said Neelkanth’s Brazilian Portuguese was excellent, even better than his English! Since Neelkanth’s English had no flaws that I knew, I guess his Portuguese was superb. Neelkanth made everyone feel at home and did an excellent job in leading the tour and the visitors were very impressed.

A number of other times I had groups that wanted tours and Neelkanth would give a tour to the group of his lab. He always gave an excellent presentation.

He managed to attract students to come to FSEC and take classes and work in his lab, something no other faculty at FSEC has managed to do. I guess the rest of us don’t have his charm!

—*Rob Vieira*

—  
Dr. Dhere was such a team player in every project he was involved in with me. He helped, participated, and shared. He was a great model as a researcher working for each person to succeed, beyond his students and co-workers.

—*Bill Young*

—  
I most remember Neelkanth for his humanitarianism; He had heart of gold.

—*Mary Huggins*



---

# Farewell Blessings by Our Dada

---

Our beloved Dada's illness was not taking name of recovery. A thin ray of hope showed once but in minds of mind we knew that countdown started. Doctors declared that this is the terminal illness, advised not to bother Dada any more with aggressive treatment

After a long stay of months at ICU wards Dada was shifted to Nursing home.

The agony on Dada's face disappeared after he was settled at nursing home room.

On Rakhi day doctors there permitted us, two sisters to visit Dada. We reached at given time with a soft material delicate rakhi.& we tied rakhi one after other.

Wanted to touch his feet but we are not supposed to do it for bed ridden

person!

We both could not resist & decided to touch his hands instead.

Dada's condition was very delicate ! Dada's condition was so delicate that could not keep head on his hand & unknowingly rather than putting my head I gently lifted his hand and kept it on my head . Raju also did same action! When I saw Raju doing this I realized that Dada is giving Ashirvad to us! It was from Dada that we got INSPIRATION from Dada keep his hands on our heads so that he could bless us with his farewell ASHIRVAD !!

This was our Dada, Dada the Great!

- Tai

---

# निरोपही आशीर्वाद देऊनच

---

आमच्या दादाचा आजार बळावत चालला होता. डॉक्टरानी हात टेकले होते. म्हणून आधी रमेश व नंतर रजू अशोकही आले सर्व डॉक्टरांनी aggressive उपचार थांबवण्याचा सल्ला दिला.

तो सल्ला मानण्याव्यातिरिक्त आमच्या हातात काहीच नव्हते त्यामुळे आधी घराशेजारील रुग्णालयात ठेवले परंतु इतके महिने ICU मध्ये योग्य नाही म्हणून नर्सिंग होम मध्ये हलविले.

खरंतर आधी कोविड नंतर एकेक complications यामुळे दादाची स्थिती अतिशय दयनीय झाल्याने त्याच्याकडे बघवतच नव्हते

पण नर्सिंग होम मध्ये अत्यावश्यक उपचार देत दादाची वैयक्तिक काळजी खूप चांगल्याप्रकारे घेतली जात होती. प्रगत तपासण्या, उपचार यातून सुटका झाल्याने की काय दादाचा चेहरा अगदी शांत झोपल्या सारखा दिसायला लागला!

नर्सिंग होम मध्ये एका दिवशी दोनच नातेवकाना भेटता येत होते. दादाची प्रकृती जेमतेम असल्याने रक्षाबंधनाच्या दिवशी आम्ही दोघी बहिणी अगदी मऊ, नाजूक राख्या Jeryle tube मधून देतील तर

पाहू म्हणून पातळ रव्याची खीर घेऊन पोहोचलो.

आम्ही दोघींनी एकानंतर एकीने हळूवारपणे राखी बांधली. दोघींनाही दादाच्या पाया पडावेसे वाटत होते. पण अंधरुणावर असलेल्या व्यक्तीच्या आपण पाया पडायचे नसते!

आम्हा दोघींनाही रहावले नाही म्हणून दादाच्या हातावर तरी डोके टेकवू विचार करून प्रथम मी हळूच दादाच्या हातावर डोके टेकवले पण हातावर भार नको असा विचार आला असावा की काय नकळत दादाचा हात माझ्या डोक्यावर घेतला. माझ्यानंतर रजूने हे सर्व तसेच केले. हे पाहताना माझ्या डोक्यात एकदम प्रकाश पडला की दादा डोक्यावर हात ठेवून आम्हाला आशीर्वाद देतो आहे!

आमची खात्री आहे की आमच्या दादानेच त्याला नमस्कार करण्याची कृती अशा प्रकारे करण्याची प्रेरणा दिली आणि निरोपाचा आशीर्वाद दिला!!

हा असा आमचा दादा, DADA THE GREAT

- ताई



# फ्लोरिडातील मराठी संशोधक डॉ. नीलकंठ ढेरे

डॉ. नीलकंठ ढेरे यांनी सौर्यशक्ती तंत्रविज्ञानविषयक संशोधन व तंत्रज्ञानाचा कुशलतेने उपयोग करून फ्लोरिडा येथे मे १९९० मध्ये जागतिक पातळीची संशोधनपर प्रयोगशाळा उभी केली असून डॉ. ढेरे यांना आजपर्यंत अनेक वेळा अमेरिकेकडून त्यांच्या कार्याबद्दल गौरविले गेले आहे. डॉ. ढेरे यांना या University of Central Florida संस्थेने एकूण २० centres व institutes मधील संशोधकामधून 'विख्यात संशोधक' (Distinguished Researcher of the year 2002) हे पारितोषिक दिले आहे. U.S. Department of Energy चे 2001 चे Research Partnership Award ही डॉ. ढेरे यांना मिळाले आहे. या कार्याचा गौरव म्हणूनच फ्लोरिडाच्या 'सोलर एनर्जी' या जगप्रसिद्ध संस्थेने डॉ. ढेरे यांना Programme Director या पदावर बढती दिली असून अनेक देशात डॉ. ढेरे यांच्या सहकार्याने संशोधन प्रकल्प चालू आहेत. म्हणून एका वेगळ्या क्षेत्रातील प्रज्ञावंत म्हणून त्यांचा जीवनपट पाहणे उद्बोधक व प्रेरणादायी ठरावे. विशेषतः सौर्यशक्तीचा प्रभावी वापर करणाऱ्या इमारती, वाहने यांच्याशी त्यांचे संशोधनक्षेत्र निगडीत आहे. Thin Film Photovoltaic Partnership Programme या सौरघटाचे वजन कमी करणाऱ्या डॉ. ढेरे यांच्या संशोधनाला अवकाश विज्ञानात विलक्षण महत्व आहे. या संशोधनामुळे सौरशक्ती शास्त्र Photovoltaic Science व्यावसायिक उत्पादन प्रत जात आहे.

डॉ. नीलकंठ ढेरे यांची आर्थिक व शैक्षणिक कौटुंबिक पार्श्वभूमी अनुकूल नसतानाही या यशाप्रत वाटचाल ते करू शकले याचे श्रेय ते आपले आई, वडील व शिक्षक यांना देतात. स्वतः अशिक्षित असूनही त्यांच्या मातोश्रींनी मुलामुलींना उच्च शिक्षण देण्याचे स्वप्न पाहिले. त्यामुळेच व डॉ. नीलकंठ यांच्या कठोर परिश्रमांमुळे सर्व भावंडे उच्च शिक्षण घेऊ शकली..

म्हणूनच डॉ. ढेरे यांची मुलाखत आवर्जून समाविष्ट केली आहे. अगदी पहिला प्रश्न मी डॉ. ढेरे यांना विचारला तो असा -

## आपला जन्म कुठे झाला? कौटुंबिक पार्श्वभूमीविषयी काय सांगू शकाल?

माझे माध्यमिक शाळेतील अकरावीपर्यंतचे शिक्षण भारतात बार्शी (जि. सोलापूर) येथे झाले. लहानपणी घरची परिस्थिती बरी होती. आई, वडील व शिक्षकांनी माझ्याकडून चांगल्या अभ्यासाच्या अपेक्षा ठेवल्या. आपल्या शिक्षणावरून आपली सामाजिक पातळी ठरणार असल्याची जाणीव करून दिली. नवीन मराठी शाळेचे चौथीचे शिक्षक व शेजारी श्री. केसकर गुरुजी यांनी हा मुलगा पुढे कुटुंबाचे नाव काढील असे भविष्य वर्तवले होते. चौथी व सातवीत . स्कॉलरशीप मिळाल्याने आत्मविश्वास वाढला. 'सुलाखे हायस्कूल, बार्शी येथे ऑक्सफर्ड इंग्लिश कोर्सची तयारी श्री. बुरुटे गुरुजींनी करून घेतली. तसेच रमण सायन्स क्लबतर्फे वर्गात शिकवल्या न जाणाऱ्या परंतु व्यवहारात उपयुक्त अशा उपकरणांची माहिती देत असत. अशी माहिती इतर वर्गांना समजावून देण्यासाठी तेव्हा माझी निवड झाली होती. त्यामुळे एखादा विषय आपणास नीट समजला की समजावून सांगण्याचा आत्मविश्वास बळावला.

दुर्दैवाने अकरावीत असल्यापासून वडिलांना नोकरीत त्रास सुरू झाला. त्या कारणाने आर्थिक परिस्थिती खालावत गेली. त्यामुळे महाविद्यालयीन शिक्षणाचा विचार करणे अवघड ठरले. मॅट्रिक नंतर पुण्यास येण्यास उशीर झाल्याने एम. ई. एस. कॉलेजात प्रवेश घ्यावा लागला. एका दृष्टीने हे चांगलेच झाले. या कॉलेजात प्राचार्य भट व इतरांची खूप मदत मिळाली. पुण्यात राहण्याचा महत्वाचा प्रश्न माझा मित्र श्री. मदन गांधी यांनी सोडविला. आपल्या ६ फूट लांब व चार फूट रुंद खोलीत मला राहण्यास जागा दिली. मित्र, खाणावळीच्या बाई, आतेभाऊ यांनी आपापल्या परीने या सत्कार्याचा वाटा उचलला असे म्हटले तर वावगे ठरणार नाही. राहण्याच्या जागेची अडचण सोडवत, वेळोवेळी एक वेळ उपास काढून, जेमतेम दोन जोड कपडे ठेवून, व मूलभूत गरजा कमीत कमी ठेवून मी कष्टाने माझे एकट्याचे नव्हे, तर मी बहिणीचे शिक्षणही चालू ठेवले.

पुस्तके विकत घेण्याची क्षमता नसल्याने पूर्ण पुस्तक उतरवून घेऊन अभ्यास करावा लागत असे. बुद्धी तल्लख व एकपाठी असल्याने त्याचा फायदा झाला. शिवाय लिहिताना विषय नीट समजून लक्षात रहाण्यास मदत झाली. जागेच्या व आर्थिक अडचणींतून बी. एस्सी. पर्यंतचे स्वतःचे व दोन बहिणींचे महाविद्यालयीन शिक्षण शिकवण्या करित मी पूर्ण केले. मी बी. एस्सी झालो.

### पदव्युत्तर शिक्षण कुठे व कोणत्या विषयात झाले?

मी पदार्थविज्ञान (Physics) या विषयात पुणे विद्यापीठातून M.Sc. पदवी घेतली. यानंतर पुण्यातील नॅशनल केमिकल लॅबोरेटरी (N. C. L.) येथे डॉ. ए. गोस्वामी यांच्या मार्गदर्शनाखाली Study of Thin Films by Electron Diffraction या विषयात पीएच. डी. ही पदवी घेतली.

### तुमच्या नोकरीबद्दल सांगाल कां?

सध्या मी युनिव्हर्सिटी ऑफ सेंट्रल फ्लोरिडाच्या फ्लोरिडा सोलर एनर्जी केंद्र, कोको, फ्लोरिडा येथे 'प्रोग्राम डायरेक्टर' या पदावर काम करित आहे. या संस्थेत १९९० पासून व युनिव्हर्सिटी ऑफ सेंट्रल फ्लोरिडा, ओरलँडो येथे १९९३ पासून. मेकॅनिकल मटेरिअल व एअरोस्पेस इंजिनिअरिंग या विभागात प्रोफेसरचेही काम करित आहे. या दोन्ही पदावर एकाचवेळी काम करण्याचा दुर्मिळ सन्मान मला मिळाला हे मी माझे भाग्य समजतो. शिवाय मी संशोधनक्षेत्रात शिकवीत असल्याने माझेही शिक्षण सतत चालू आहे.

डॉ. ढेरे यांनी अतिशय प्रतिकूल परिस्थितीत कष्टाने स्वतःचे व सर्व भावंडांचे शिक्षण पूर्ण केले. या पाचही भावंडांच्या नावापुढे डॉक्टर ही पदवी आहे त्यामुळे एकाच कुटुंबातील जास्तीत जास्त व्यक्ती डॉक्टर असल्याची 'गिनीज बुक ऑफ वर्ल्ड रेकॉर्ड' मध्ये नोंद झाली आहे.

### आपल्या शैक्षणिक यशाचे श्रेय तुम्ही कोणास देता?

माझ्या आईला! कठीण आर्थिक परिस्थितीत आमची आई मुलांच्या उच्च शिक्षणाबद्दल आग्रही राहिली व तिला तिच्या वडिलांकडून वारसाने मिळालेला एकुलता एक जमिनीचा तुकडा विकून तिने मुलांच्या शिक्षणाची सोय केली. त्या पैशाचा उपयोग आम्हा तिघा भावंडांना म्हणजे मला व दोघी बहिणींना एम.एस्सी.ची दोन वर्षे पूर्ण करण्यासाठी झाला. त्यापुढे जाऊन एम. एस्सी. तर पी. एचडी. करण्याचे ठरविणे हा देखील एक महत्वपूर्ण निर्णय ठरला. एम. एस्सी. नंतर मी महाविद्यालयात व्याख्याता होणे ठीक होते पण त्यामध्ये विशेष काही नव्हते. तीन सव्वातीन वर्षांच्या काळात पी. एचडी. पूर्ण केले. मात्र त्यामुळेच आयुष्याला कलाटणी मिळाली. सुदैवाने मला फार चांगले मार्गदर्शक

प्रबंधासाठी मिळाले होते. त्यांनी मला जीव ओतून काम करण्याची प्रेरणा दिली व संशोधनाचे गमक (Skill) शिकविले. त्यांनी स्वतः जातीने लक्ष घालून त्वरित मला संशोधन वेतन (Research - Fellowship) सुरू व्हावी यासाठी खटपट केली. त्यामुळे आमची, माझी व दोन

बहिणींची तिघांची शिक्षणाची तर सोय झालीच पण पाठोपाठ धाकटा भाऊ पुण्यास शिकायला आला त्यातही अडचण आली नाही. अशा प्रकारे एम. एस्सी. होताच पी. एचडी. चे शिक्षण पूर्ण करण्याचा कठीण निर्णय व पूर्तता हाच माझ्या आयुष्यातील यशाकडे म्हणा किंवा सुखाकडे (happiness) नेणारा महत्वाचा बिंदू किंवा टर्निंग पॉइंट ठरला.

माझे डॉक्टरेटेचे मार्गदर्शक डॉ. गोस्वामी यांनी मला संशोधनपर विषयातील Skills शिकविल्याने संशोधनपर विषयात career करण्यासाठी आवश्यक प्रावीण्य प्राप्त होऊ शकले. म्हणून माझ्या यशाचे श्रेय त्यांनाही द्यायला हवे. मी अमेरिकेत स्थिर झाल्यानंतर डॉ. गोस्वामींना अमेरिकेत निमंत्रित केले. माझ्या भावांच्या व डॉ. गोस्वामींच्या इतर विद्यार्थ्यांकडे काही काळ व्यतित करण्याचा योग जुळवून आणला. आता त्याचे खूप समाधान वाटते. डॉ.गोस्वामींचा अलीकडेच मृत्यू झाला. पण मधल्या काळात मी त्यांच्याबरोबर नियमित संपर्क ठेवून होतो. एका अर्थाने श्री. केसकर व डॉ. गोस्वामी हे माझ्या भारतीय मनात कोरलेले Legendory शिक्षक होते. खरोखरच एखाद्याने किता गिरवावा अशी ती व्यक्तिमत्त्वे होती. याशिवाय गरवारे कॉलेजचे फिजिक्सचे प्राध्यापक श्री. दीक्षित व गणिताच्या प्राध्यापिका सौ. पद्मजा जोशी यांच्यामुळे फिजिक्स व गणिताची आवड निर्माण झाली.

### संशोधन क्षेत्रात आपण पीएच. डी. नंतर काय केले?

पीएच. डी. करताना सुरू झालेले संशोधनपर काम प्रथम माझ्या फिजिकल रिसर्च लॅबोरेटरी (PRL) अहमदाबाद येथील नोकरीत व पुढील प्रत्येक नोकरीत चालू राहिले. PRL ची संस्थापना डॉ. विक्रम साराभाई यांनी केली आहे. डॉ. साराभाई केवळ एक थोर वैज्ञानिकच नव्हे तर एक थोर प्रबंधक होते. आपल्या शास्त्रज्ञांना त्यांचा संपूर्ण पाठिंबा होता. पी. आर. एल. मधील प्रबंधक विभागास पी. आर. एल. मध्ये शास्त्रज्ञांच्या गरजा त्वरित पूर्ण करण्याचे निर्देश प्रबंधक विभागास दिले असल्याने शास्त्रज्ञांना आपले काम वेळेत पूर्ण करणे शक्य होत असे. ह्या गोष्टीमुळे आम्हा सर्वांना आमच्याकडून केल्या गेलेल्या अपेक्षा पूर्ण करण्यास खूप मदत झाली. माझ्या गेल्या ३८ वर्षांच्या कालावधीत मला उत्तमोत्तम संशोधन प्रयोगशाळेतून काम करण्याची संधी मिळाली आहे. आपले सध्याचे राष्ट्रपति डॉ. अब्दुल कलाम ह्या शास्त्रज्ञास डॉ. साराभाई यांनीच निवडले होते व आपल्या संस्थेत त्यांना घेऊन त्यांचा एक कुशल शास्त्रज्ञ म्हणून विकास तर त्यांनी केलाच शिवाय असामान्य उंची गाठण्यास प्रोत्साहनही दिले. अशा अद्वितीय व्यक्तिमत्त्वाच्या साराभाईंच्या संस्थेत काम करण्याची संधी मला मिळाली. तिथे काम करत



असतानाच १९७० साली मला ब्राझिल येथे संशोधन संस्था स्थापन करण्यासाठी पाचारण करण्यात आले. ब्राझिलमध्ये State of art facilities सहित व आंतरराष्ट्रीय पातळीवर मान्यता असलेली एक अतिशय उत्तम संशोधनपर प्रयोगशाळा उभी करण्यात माझा सहभाग आहे, याचा मला अभिमान वाटतो.

**आपण प्रत्यक्ष संशोधन कार्यास प्रारंभ कधी केलात व पुढील वाटचाल कशी केलीत? नोकरी व करीअरबद्दल थोडेसे -**

पी. आर. एल. मधून ब्राझीलला गेलो तेव्हा जाताना २,३ वर्षात प्रयोगशाळा उभारणीचे काम करून परत भारतात यायचे असा मानस होता. परंतु डॉ. साराभाई यांचे अकाली निधन झाले. ही ब्राझिलमधील नोकरी चालू ठेवण्यासाठी एक महत्वाची घटना ठरली. १९७० च्या दरम्यान ब्राझिल देशात पदव्युत्तर शिक्षण व संशोधनकार्य यावर खूपच गुंतवणूक केली जात होती. त्यामुळे आम्हाला जागतिक पातळीच्या संशोधन प्रयोगशाळेची उभारणी करता आली. जगातील सोलर सेल बनविणाऱ्या व संशोधन कार्य करणाऱ्या मूठभर संस्थेत आमची गणना होती. तिथे आम्ही 'ब्राझिलियन व्हॅक्यूम सोसायटी'ची स्थापना केली व त्या संस्थेचा पहिला प्रेसिडेंट होण्याचा बहुमान मला मिळाला. १९८६ मध्ये SERI (Solar Energy Research Institute) या अमेरिकन संस्थेत मला 'व्हिजिटिंग सिनिअर प्रोफेसर' म्हणून डॉ काझमरस्की यांनी आमंत्रित केले. अमेरिकेतील प्रोफेसरच्या जागेवर कायम होण्यासाठी माझ्या सहकाऱ्यांनी गळ घातली. परंतु ब्राझिलच्या कामातील बांधिलकीपासून परावृत्त होणे मला मान्य नव्हते, पण दैवास हेच मान्य होते. त्यामुळे दुर्दैवाने १९९० साली ब्राझिलची आर्थिक व्यवस्था पूर्णपणे कोलमडल्याने संशोधननिधी वान्यावर उडून गेला. ब्राझिलच्या विभागप्रमुखानेही अमेरिकेतच काम घेण्याचा सल्ला दिला व मी अमेरिकेत आलो.

SERI मध्ये (Solar Energy Research Institute at Golden Colorado) मला सोलर सेल तसेच अधिक तापमानाच्या Super conducting thin films वर काम करण्यास मिळाले. हा एक अतिशय जोशयुक्त काळ होता. अमेरिकेत त्या कालखंडात मी जास्तीत जास्त तापमानावर Bismuth Based thin film super conducting material ची निर्मिती करण्यात यश मिळविले. - मी अमेरिकेत स्थायिक होण्याचे ठरविल्यावर University of Central Florida ने मला Florida Research Centre येथे प्रमुख वैज्ञानिकाची नेमणूक देऊ केली. एखादा सर्जन शरीरातील एक अतिशय लहान भाग (Biopsy) घेतो व शरीरातला तो अवयव ठीक आहे की नाही? आजार आहे की नाही? हे पहाण्यासाठी पृथक्करण करतो. याच धर्तीवर आम्ही (Photovoltaic modules) सूक्ष्म आवरणांचे नमुने घेऊन त्यांचे पृथक्करण करतो. ... त्याविषयी अगदी थोडक्यात सांगायचे तर मला इंग्रजी भाषेचा आधार घ्यावा लागेल. तांत्रिक भाषेत बोलायचे तर, .....

I have been fortunate in being able to establish the photovoltaic Materials Lab. for developing thin-film solar cells of copper indium gallium selenide sulfide both for terrestrial as well as space applications. My colleague and myself also work on reliability and durability of photovoltaic modules. We have developed special techniques for extracting samples from photovoltaic modules.

**तुमच्या पत्नीचा तुमच्या यशात किती वाटा आहे असे तुम्ही मानता?**

आमच्या लग्नानंतर व त्याआधीही माझी पत्नी सुचरिताने मला आयुष्यातील यशापयशामध्ये चांगली साथ दिली आहे. केवळ माझी एक साथीदार म्हणून नव्हे तर एक मार्गदर्शक म्हणून तिने महत्वपूर्ण भूमिका बजावली आहे. त्यामुळेच मी हा मार्ग पार करू शकलो. तिच्या मदतीमुळे व मार्गदर्शनामुळेच मी जे काही काम केले त्यात जास्तीत जास्त व उत्तम प्रकारचे यश मिळवू शकलो. कारण ती केवळ मार्गदर्शन करून थांबत नाही तर व्यक्तिशः माझ्या कामात मदतही करते.

माझ्या पत्नीचा माझ्या यशातील वाटा अतिशय महत्वपूर्ण आहे.

**तुम्हाला कार्यक्षेत्र आवडीचे मिळाले कां?की वेगळे काही करायचे होते?**

गरवारे कॉलेजचे प्राध्यापक दीक्षित यांच्यामुळे मला फिजिक्सची आवड होतीच पण प्राध्यापिका सौ. पद्मजा जोशी या गणित छान शिकवीत, त्यामुळे मला गणितात पदव्युत्तर शिक्षण करावेसे वाटले. यासाठी मी एम. एस्सी. ला गणित शाखेत प्रवेश घेऊन त्यांना आनंदाने सांगायला गेलो तर त्यांनी मला ताबडतोब 'विषय बदल, गणिताला भविष्य नाही' असा सल्ला दिला व उलट पावली विद्यापीठात पाठविले. भरलेली २०/-रू. फी दुसऱ्या विषयासाठी ट्रान्स्फर करता येणार नव्हती. पण पुन्हा २०/-रू. ची सोय करणे मला अशक्य असल्याने कॉलेज व विद्यापीठात सायकलवर ४-५ फेऱ्या मारून दोन्हीकडील प्राध्यापकांच्या संयुक्त, सद्भावना व मदतीमुळे अखेर मला फिजिक्सला जाता आले, व संशोधन क्षेत्रात पुढे मी यश मिळवू शकलो.

माझे कार्यक्षेत्र मला आवडीचे मिळाले हे खरे, पण त्यावेळी ते आवडीचे म्हणून मी निवडले की केवळ अपघाताने या कार्यक्षेत्रात आलो याबद्दल असे म्हणता येईल की जे क्षेत्र मिळाले त्यात मी स्वतःला आवडीने झोकून दिले. प्रथम फिजिक्स व नंतर मटेरियल सायन्स, इंजिनियरिंग हे प्रमुख विषय मी पूर्णतः माझ्या आवडीमुळे निवडले होते. माझे पी. एच.डी.चे मार्गदर्शक डॉ. गोस्वामी यांनी मला संशोधन कामात पीएच. डी. साठी घेतल्याने फिजिक्समधील Thin Film हा विषय ओघानेच आला. डॉ. गोस्वामी यांच्याबरोबर काम करताना मला या विषयातही रूची निर्माण झाली व मी तो विषय पुढे

चालू ठेवला.

१९७३ नंतर ऊर्जेच्या कमतरतेच्या गहन प्रश्ना मुळे (energy crisis) माझ्या या विषयातील प्रावीण्याला आकार आला. या जागतिक प्रश्नामुळे मला या विषयाची आवश्यकता लक्षात आली आणि या विषयात संशोधन चालू ठेवण्याचा निर्णय मी घेतला.

### इश्वर मानता कां?

होय. माझी परमेश्वरावर नितांत श्रद्धा आहे आणि मला प्रार्थना करणे आवडते. परंतु परमेश्वरावर श्रद्धा असणे नसणे तसेच व्यक्तीचा धर्म या प्रत्येक व्यक्तीच्या खाजगी बाबी आहेत. त्यामुळे या गोष्टींचा कोणाच्याही वैज्ञानिक अगर सामाजिक कार्यामध्ये अडसर नसावा असे मी मानतो.

### तुमचे जीवन ध्येय काय आहे?

माझे ध्येय म्हणाल तर समाजाच्या उन्नतीसाठी मी काही करण्याचा प्रयत्न करावा हे आहे. मी शास्त्रज्ञ असल्याने शास्त्रात माझ्या हातून भरीव कामगिरी व्हावी असे मला वाटते. माझ्या कार्यातून समाजाला माझी ओळख व्हावी, जी पुढील पिढ्यांपर्यंत पोहोचावी, तसेच मी चांगले विद्यार्थी घडवावेत व त्यांना तयार करून माझ्या ज्ञानाचा वरसा पुढे चालावा असे मला वाटते.

### तुमच्या यशात नियतीचा भाग किती? प्रयत्नांचा किती?

कोणत्याही व्यक्तीला प्रयत्न केले नाहीत तर यश मिळणारच नाही व प्रयत्न केले तर यश मिळण्याची भरपूर शक्यता असते. मी तर मानतो की अपयश हे खरे तर अपयश नसते. हा एक अनुभव असतो. आपण या अनुभवातून शिकून, त्याचा अभ्यास करून, मिळालेल्या ज्ञानाचा उपयोग करून नव्याने सुरुवात केली व प्रयत्नात सातत्य ठेवले तर यश निश्चितपणे मिळते. खरं तर अपयशाचा विचार न करता एखादी गोष्ट ध्यासाने, अभ्यासपूर्वक करित राहिले तर यश मिळते म्हणून मी नियती मानतो. पण प्रयत्न त्याहून महत्वपूर्ण मानतो.

### मित्र मैत्रिणी कोण?

जसे सर्वांचे असतात तसे माझे मित्र आमच्या मूळ गावचे आहेत. शाळेतील, कॉलेजातील तसेच वेगवेगळ्या कामाच्या ठिकाणीही मला चांगले मित्र मिळाले आहेत. तसेच नातेवाईक, शेजारी हेही माझे मित्र आहेत. माझा मित्रपरिवार विविध स्तरातून आलेल्या व्यक्तींचा अतिशय सुंदर मिलाफ आहे. कारण आमच्या आवडी, कामाचे स्वरूप, प्रावीण्याचे विषय, ध्येय एक आहे. Diasporo या वर्गात त्याचा

समावेश करता येईल. Diasporo हा एक भौगोलिक दृष्ट्या वेगवेगळ्या जागी रहात असतानाही एकत्र बांधून ठेवणारा दुवा होय. मग ते कामाच्या निमित्ताने भेटलेले मित्र किंवा एके काळचे शेजारी, वर्गमित्र असे कोणीही असू शकतात.

### कुटुंबियांच्या संस्कारांना किती महत्व देता?

मी बालपणी कुटुंबात झालेल्या संस्कारांना अनन्यसाधारण महत्व देतो. आपण सर्व जाणताच की पौर्वात्य संस्कृतीत शिक्षणाला खूप महत्व दिले जाते. त्यामुळे परदेशात देखील पौर्वात्य पार्श्वभूमी असलेली मुले अधिक शिथिल व अधिक यशस्वी अशा गटात गणली जाऊ शकतात. कुटुंबात होणारे प्रतिपालन म्हणजे केवळ शिक्षणच नाही. उत्तम पालनपोषणात शिक्षणाबरोबर चांगले संस्कारही येतात.

### धावपळीचा दिवस असं तुम्ही म्हणता त्या दिवशीची दैनंदिनी काय असते? कोणत्या कामास प्राधान्य देता?

माझा धावपळीचा दिवस खूप लवकर सुरू होतो व रात्री उशीरा संपतो. अशा वेळी मी निर्णय घेण्याचे काम करण्यास प्राधान्य देतो. माझ्या प्रयोगशाळेतील एखादी यंत्रणा नीट चालत नसेल किंवा माझा ग्रुप एखादी नवीन कार्यपद्धतीची बांधणी (Set up) करित असेल तेव्हा मला माझ्या कामाबरोबर त्यांच्याकडेही लक्ष द्यावे लागते. पूर्वी मी आमच्या कामाचे सार काढण्याचे टिपण, पेपर्स, रिपोर्ट व नवीन कामाचे निवेदन (Proposal) या गोष्टी स्वतःच लिहित असे. परंतु आता माझे सहकारी अनुभवाने तयार झाले असून त्यांनी ड्राफ्ट केल्यावर त्यांच्या बरोबर बसून त्यात दुरुस्ती आणि योग्य बदल हवे असल्यास मी करतो, जेणेकरून काय दुरुस्ती असावी व ती कशी करावी हे त्यांना नीटपणे कळते. त्यामुळे पुढील वेळी या पद्धतीचे लिखाण अधिक चांगल्या प्रकारे करून अधिक चांगली कागदपत्रे (Documents) ते तयार करू शकतात. मला दररोज कामाबद्दल ३५ ते ४० ई मेलस येतात. या पत्रांना ताबडतोब प्रतिसाद देण्याचा माझा प्रयत्न असतो. मी साधारण ६ - ६.३० वाजता घरी जातो. पण मला काम घरी न्यावे लागते म्हटले तरी चालेल. मी घरी जाऊन चहा घेऊन माझी पत्नी सुचरिता हिच्याबरोबर थोड्या गप्पा करून शक्य असेल तेव्हा व्यायामशाळेत जातो. मला चालायला जाणे, व्यायामशाळेत जाणे खूप आवडते. कामाच्या व्यापामुळे नेहमी जमत नाही पण मी जमेल तसा या गोष्टींचा आनंद घेतो. जेवणानंतर पुन्हा एकदा ई-मेल पाहून मी उत्तरे पाठवतो व घरी आणलेली कामे पूर्ण करण्याचा प्रयत्न करतो. पण परत सकाळी लवकर उठावे लागणार असल्याने रात्री ११.०० नंतर शक्य तो मध्यरात्र होण्यापूर्वी मी झोपतो. आठवड्याच्या सुट्टीतही मला बहुतेक वेळा कामावर जावे लागते किंवा काम घरी आणावे लागते.

## प्रवास कुठे कुठे केला आहे? कसा करता? प्रवासात मनन-चिंतन करता का?

मी व माझी पत्नी सुचरिता या बाबतीत खूपच भाग्यवान आहोत की आम्हाला विविध देशांना अनेक वेळा भेट देण्याची संधी मिळाली. निरनिराळ्या परिषदांमध्ये भाग घेण्यासाठी तसेच संशोधन प्रकल्पात सहभागी होण्यासाठी विविध देशांना अनेकवेळा भेट देण्याची संधी मिळाली. आमची आयुष्यातील बरीच वर्षे भारतात गेली. त्यानंतर आम्ही १६ वर्षे ब्राझिलमध्ये होतो. आता गेली १८ वर्षे अमेरिकेत आहोत. आम्ही फ्रान्स, जर्मनी व इंग्लंडला सहा वेळा, जपान व नेदरलँडला चार वेळा, हंगेरी व इटलीला तीन वेळा, थायलंडला दोन वेळा गेलो आहोत. तसेच युगोस्लाव्हिया व युक्रेनलाही आम्ही भेट दिली आहे. या वर्षांच्या सुरुवातीलाच थायलंड व बँकॉकची भेट झाली. अलीकडे जर्मनी व नंतर जून, जुलै मध्ये ब्राझिलला परिषदांमध्ये भाग घेण्यासाठी जाऊन आलो. या वर्षी जूनमध्ये परिषदेसाठी व प्रकल्पाबाबत कामासाठी आम्ही चीनला भेट देणार आहोत. अमेरिकेतील विविध राज्यातील प्रकल्पांना वरचेवर भेट देणे चालू असतेच. - मी ब्राझिलला असताना लॉटिन अमेरिकेच्या दक्षिण भागात प्रवास करून अर्जेन्टिना, चिली, पराग्वे व उरुग्वे या देशांना भेटी दिल्या. आम्ही भारत, अमेरिका, नेपाळ व ब्राझिल या देशात भरपूर प्रवास केला आहे. यातील बराचसा प्रवास परिषदा व संयुक्त संशोधन प्रकल्पासाठी असला तरी मित्रांकडे, नातेवाईकांकडे जाण्यासाठीही यामधून वेळ काढण्याचा प्रयत्न असतो.

## वेळेचे बंधन पाळता कां?

मी नियत भेटीची वेळ काटेकोरपणे पाळतो. मी वेळेला अतिशय महत्त्व देतो. कधी कधी मी खरोखरच खूप व्यस्त असताना उशीर होण्याची वेळ आली तरी तो उशीर कमी करण्याचा माझा प्रयास असतो. अशावेळी संबंधित व्यक्तींना कळविण्याबाबत माझा कटाक्ष असतो.

## वाचन करता का? कोणत्या प्रकारचे? आवडलेली पुस्तके सांगू शकाल?

हल्ली म्हणाल, तर आवड म्हणून किंवा विरंगुळा म्हणून वाचन करण्याचा प्रश्नच येत नाही. कारण तेवढा वेळ मिळत नाही. परंतु त्याआधी मला वाचनाची आवड होती. मला आवडलेली व माझ्या लक्षात राहिलेली पुस्तके म्हणजे, भारताचे प्रथम पंतप्रधान पंडित जवाहरलाल नेहरू यांचे आत्मचरित्र *Authority and the Individual*, *Principles of social Reconstruction*, *The Impact of Science on Society* and others by Bertrand Russel, *Yoga and other Selections from the complete works of Swami Vivekanad*, *The World's Religions* by Houston Smith तसेच *Agelen Body Timelen Mind* by Deepak Chopra, *Several Books* by Mr.

John Kemeth Galbraith Guld. *The New Industrial state and The Affluent Society* by John Kenneth Galbraith *Bible ns* ग्रंथ मी वाचले आहेत. 'War and Peace' by Tolstoy, *The Mother* by Maxim Gorky, *David Copperfield* by Charles Dickens, *Tom Sawyres and Huck leberry Firm* by Mark Twain, *Georah* by Nobel Dureat Mr. Ravindranath Tagore शिवाय Pears, Buck च्या *Good Earth* व इतर कादंबऱ्या *Pride Prejudice* by Jane Austin, *Pride and Punishment* by Dostovki, *Dapline du Mourier* यांच्या *Rekacca* व इतर कादंबऱ्या मी अतिशय आवडीने वाचल्या आहेत. मराठीतील ज्ञानेश्वरी, तुकारामाची गाथा, रामदासांचा दासबोध हे ग्रंथ फक्त शब्दशः वाचून वाचले म्हणता येणार नाही पण मला या ग्रंथांचे वाचन व मनन करणे खूप आवडते. रणजित देसाई यांची स्वामी व पु. ल. देशपांडे यांची व्यक्ती आणि वल्ली, अपूर्वाई इत्यादी पुस्तके वाचनाचा आनंद अजूनही ताजा आहे.

## आत्मपरीक्षण करता का? त्यामुळे वर्तनशैलीत बदल करता का?

आत्मपरीक्षणाबाबत बोलायचे झाले तर रोज धकाधकीच्या दिनक्रमात, शांतपणे बसून आपल्या वागण्यातील त्रुटी व चुका यांचेवर चिंतन करणे अशक्य असते. परंतु मी प्रवास करताना कामातून मोकळा वेळ असेल किंवा जेव्हा जेव्हा वेळ मिळेल तेव्हा निश्चितपणे माझ्या वागण्याचा विचार करतो. माझी पत्नी, सुचरिता अनेकदा माझे दोष माझ्या दृष्टोत्पत्तीस आणण्यास मदत करते, मी तिचे ऐकतोही पण नेहमीच नाही. माझे काही मित्रही माझ्या चुकांबद्दल सांगून सुधारण्याचा मला सल्ला देतात व मी त्यांचा सल्ला आचरण्याचा प्रयत्नही करतो.

एक सुंदर, संस्कृत श्लोक आहे की व्यक्तीने नेहमी खरे बोलावे, नेहमी लोकांना चांगले वाटेल असे बोलावे पण जे सत्य एखाद्याला दुखावेल असे असेल तर ते सत्य न बोलणे चांगले! मी हा श्लोक स्वतःशी वरचेवर म्हणतो. परंतु प्रत्यक्षात मला तसे आचरण करता येत नाही व मी एखाद्याला कटु सत्य स्पष्ट शब्दात सांगतो. त्या गोष्टीची प्रतिक्रिया निश्चितच चांगली नसते. नुकतेच एका मित्राने मला याबद्दल समजावले आहे व भविष्यात स्वतःला सुधारण्याचा मी निर्धार केला आहे. पुढील काळच मी या गोष्टीत यशस्वी होईन का ते ठरवेल.

अगदी मोठी म्हणवणारी माणसं देखील मान्यतेच्या मागे लागलेली दिसतात. पण क्वचितच मान्यता एखाद्याच्या मागे धावताना दिसते. भूभाग व अंतरिक्षातील साधनासाठी थिनफिल्म सोलर सेल विकसित करण्याच्या कार्यासाठी डॉ. नीलकंठ ढेरे यांच्या कंठात एकानंतर एक अशा पुरस्काररूप पुष्पमाला अर्पित झाल्या आहेत. त्यातील काही पुरस्कार जागतिक पातळीचे, मान्यतेचे असल्याने त्यांना विशेष महत्त्व आले आहे. हे ऐकून असल्याने मी विचारले.

## आपणास विविध पुरस्कार मिळाले आहेत. त्यातील काही पुरस्कारांविषयी सांगू शकाल का?

अलीकडेच AVS संस्थेकडून विज्ञान व तंत्रज्ञानातील प्रदीर्घ व सातत्याने केलेल्या संशोधन कार्यासाठी पारितोषिक मिळाले. AVS या सायन्स व टेक्नॉलॉजी विषयातील जगातील एका अग्रगण्य संस्थेने आपल्या संस्थेची फेलोशिपही मला प्रदान केली आहे. तसेच या संस्थेने प्रो. नीलकंठ यांना Photovoltaic च्या सौरशक्ती विषयातील कामाचे आद्यप्रवर्तक (Pioneer) म्हणून गौरविले आहे. नोव्हें. २००३ मध्ये Baltimore येथे विशेष समारंभात पारितोषिक प्रदानाचा कार्यक्रम संपन्न झाला. सदर पारितोषिकाच्या अवतरणात for The Pioneering Research in Photovoltaics असे गौरवपर उद्गार नमूद केले आहेत. AVS या विश्वविख्यात संस्थेकडून आद्यप्रवर्तक असा किताब मिळणे हा कंठातील मानाचा हिराच म्हणावे लागेल. तसेच IEEE (Institute of Electrical and Electronics Engineer) या संस्थेने २००२चा Outstanding Engineer, Region ३ असा बहुमान प्रदान केला आहे. IEEE ही तंत्रज्ञांची एक विख्यात विशाल संस्था असून जगभरात त्याचे १० विभाग विद्यमान आहेत, पैकी ६ विभाग फक्त अमेरिकेत आहेत. यातील ३ विभागातून प्रोफेसर ढेरे यांना Outstanding Year चा बहुमान मिळाला आहे. १९८९ नंतर प्रथमच फ्लोरिडा राज्याला सदर पद मिळण्याची सुसंधी मिळाली आहे.

सदर ३ विभागात निवड झाली असून त्यानंतर IEEE Florida Council व IEEE Cape canaveral section, FL. ने २००३ चे UCF Research Incentive Award ही प्रोफेसर ढेरे यांना बहाल केले आहे.

IEEE या संस्थेकडून अतिशय मानाचे समजले जाणारे हे संशोधनपर पारितोषिक प्रदान करण्याचा कार्यक्रम ६ एप्रिल २००३ रोजी Southern Conference Jamaica येथे संपन्न झाला. IEEE ही इंजिनिअरिंग व्यवसाय क्षेत्रातील जगातील सर्वात मोठी सोसायटी असून तिचे जगभर तीन लाख ऐंशी हजारावर सदस्य आहेत. या संस्थेच्या वतीने हॉवर्डचे चेअरमन व IEEE विभागाच्या उच्च कार्यकारी कमिटीने डॉ. ढेरे यांच्या शैक्षणिक व तंत्रज्ञानातील तसेच IEEE मधील लक्षणीय जागतिक पातळीचे कामगिरीबद्दल उत्कृष्ट तंत्रज्ञानाचे पारितोषिक मिळाले आहे. Emeritus Member, Founder President (१९७९) and President (१९८०) Brazilian vacuum society, Brazil ही पदे , ढेरे यांनी भूषविली आहेत. आपल्या सध्याच्या अमेरिकेतील कामातून वेळ काढून ब्राझिलमधील संस्थेतील परिषदेसाठी जुलै १९०४ मध्ये भेट दिली. त्यावेळी त्यांनी आपल्या जुन्या सहकारी व विद्यार्थ्यांची भेट घेतली. याशिवाय डॉ. नीलकंठ ढेरे यांना पुढील नमूद केलेल्या पदांवर नियुक्ति होऊन गौरविण्यात आले आहे...

डॉ. ढेरे यांनी ब्राझिल व अमेरिका या देशात जागतिक पातळीची संशोधनपर संस्था स्थापन केली. डॉ. ढेरे हे अमेरिका व ब्राझिल देशांच्या या क्षेत्रातील विकासासाठी कारणीभूत ठरले आहेत. Thin

Film Photovoltaics and photoelectrical solar cells च्या उद्योगासाठी तंत्रविज्ञान विकसित करणे व महत्वपूर्ण संशोधन या योगदानाबद्दल डॉ. ढेरे.यांना पारितोषिके मिळाली आहेत. मात्र अनेक गौरवाबाबत डॉ. ढेरे यांची प्रतिक्रिया लक्षणीय आहे. हा मान मिळण्याइतकी माझी लायकी नाही. आता मला अधिक काम करून या पारितोषिकांना मान द्यावा लागेल असे ते म्हणतात.. .

आपल्याकडे योग्य भारतीय विद्यार्थ्यांना संशोधनपर कामासाठी घेण्याचा त्यांचा कल असतो. निवड करताना ते विद्यार्थ्यांच्या नैपुण्यात तडजोड करत नाहीत. तेव्हा या भारतीय विद्यार्थ्यांची निवड तुम्हाला मान्य नसल्यास तुम्ही मला कामावरून कमी करू शकता इतके रोखपणे ते आपल्या भारतीय विद्यार्थ्यांच्या निवडीबद्दल आग्रही असतात. उत्तम कामगिरी दिल्यामुळे संस्थेला याबाबत निरुत्तर केले आहे. डॉ. नीलकंठ यांचा आध्यात्मिक शक्तीवर विश्वास आहे. सूर्याच्या शक्तीचा वेध घेणारा सौरनायक ज्ञानेश्वर, तुकाराम, रामदास या संतांच्या पायी रहायला ते नेहमीच तयार असतात. स्वतःचे संशोधन कार्य हे Material आहे. Nonmaterial मधील Spiritual science मधील या थोर संतांचे कार्य म्हणजे सामान्यांच्या बुद्धीपलीकडचा प्रांत आहे हे मानणारी विनम्रता डॉ. नीलकंठांच्या कंठातून सहज व्यक्त होते. - डॉ. ढेरे यांची प्रचंड उद्योगप्रियता, उत्साही व विनम्र राहणी याबद्दल त्यांचे मित्र, सहकारी, विद्यार्थी भरभरून बोलतात, डॉ. ढेरे यांचा संशोधनातील उत्साह त्यांच्या विद्यार्थ्यांमध्ये प्रवाहित झालेला अनुभवता येतो. हा अनुभव फ्लोरिडा सोलर एनर्जी सेंटरच्या २८ जून २००२ च्या न्यूज रिलीजमध्ये अमेरिकन मान्यवरांनी मांडला आहे.

## तुमचे छंद काय काय आहेत?

मला फोटोग्राफीची खूप आवड होती पण कामाच्या अतीव व्यस्ततेमुळे मला या गोष्टी आठवण करायला पण वेळ मिळत नाही. सध्या मी संगणकाचा उपयोग कामाचा व्याप सुलभ करण्यासाठी करतोच म्हटलं तर एक विरंगुळा म्हणून संगणकाशी खेळत अधिक मैत्री करून मी कामाचा व्याप सुलभ होईल हे पहात असतो.

## किती वाजता उठता? व्यायाम? दैनंदिनी?

माझा दिवस खूप सकाळी चालू होतो. मला स्वतःचे आवरणे, स्नान, पेपर वाचणे या गोष्टी व्यवस्थित व्हायला आवडते. त्यामुळे लवकर कामावर जायचे असेल किंवा प्रवासाला लवकर जायचे असेल तर घाईगदीतं सगळं आटोपण्यापेक्षा मी अधिक लवकर उठतो. मला चालायला जाणे अतिशय आवडते पण कामाच्या व्यापामुळे मी शक्य असल्यास सकाळी, नाहीतर संध्याकाळी अगदी शक्यच नसेल तर दुपारच्या जेवणाच्या सुट्टीतदेखील एक रपेट मारून येतो. (पुण्याला आलो की दररोज

घरापासून चालत लॉ कॉलेजची टेकडी चढणे हा एक आवडता कार्यक्रम निश्चित असतोच) चालण्याच्या कार्यक्रमाशिवाय हेल्थक्लबवर जाणे पण मला आवडते. संध्याकाळी शक्य असेल तेव्हा मी हेल्थ क्लबवर नक्कीच जातो. मी ८ ते ८.३० च्या सुमारास कार्यालयात पोहोचतो. माझी दिनचर्या अतिशय व्यस्त असते. फ्लोरिया येथील संशोधन शाळेत माझ्याकडे विद्यार्थी शिकत आहेत. माझा भारतीय विद्यार्थ्यांना घेण्याचा कल असतो. सुदैवाने निवड करताना प्रत्येक बाबतीत वरचढ असे भारतीय विद्यार्थी मिळाल्याने माझ्या भारतीयांच्या निवडीबद्दल वाद निर्माण झाले तरी त्याबाबत कोणालाही बोट ठेवता आले नाही. विद्यार्थ्यांनीही नेहमीच चांगलो रिझल्ट देऊन माझी निवड सार्थ केली.

## यशाचे टप्पे

माझ्या आयुष्यातील यशाचा अर्थात जे मिळविले त्याला यश म्हणता आले तर महत्वाचा टप्पा म्हणजे आमच्या कुटुंबाची आर्थिक बाजू अतिशय कठीण असतानाही मास्टर्स व डॉक्टरेट (M.Sc. Phd.) हा पदव्युत्तर अभ्यासक्रम चालू ठेवण्याचे ठरविले हा होय. मी आधी सांगितल्याप्रमाणे माझ्या वडिलांच्या नोकरीची स्थिती अनिश्चित, डामाडौल होती. त्यातून नीट मिळकत होत नव्हती. शिवाय मी व माझ्या दोन बहिणी असे आम्ही तिघेजण एकाचवेळी पुण्यात कॉलेजचे शिक्षण घेत होतो. त्यामुळे बी. एस्सी.ची पदवी मिळताच हायस्कूल शिक्षकाची नोकरी करण्याचा तगादा सुरू झाला होता. थोडे दिवस नोकरी करून मग हवे तर पुढचे करण्याचा तगादा सुरू झाला होता. परंतु मला खात्री होती की एकदा नोकरीत गुंतलो की तिथून परतणे अशक्य होते. मला उच्च शिक्षणाचा नाद कायमचा सोडावा लागला असता. या काळात आईला खूप त्रास झाला पण बार्शीत तिची किती ओढाताण होते याची तिने मुलांना जाणीव होऊ दिली नाही. तिने माहेरकडून मिळालेली जमीन, विकून आलेले पैसे आम्हाला दिले. या रकमेपैकी काही पैसे बार्शीतील थोड्याफार खर्चासाठी वापरावे हा विचारही तिच्या मनाला शिवला नाही.

## सामाजिक बांधिलकी मानता कां? आजच्या समाजात काय बदल व्हावा असे तुम्हाला वाटते?

मी स्वतः सामाजिक बांधिलकी मानतो व त्याचा आदरही करतो. सामाजिक बंधनामुळे समाजाची वीण टिकून रहाते. पौरात्य देशात आपल्याला या बांधिलकीचा कधी कधी अतिरेक वाटतो. परंतु ही

बांधिलकी आवश्यक आहे. व्यक्तीसाठी, कुटुंबासाठी व पुढे जाऊन समाजासाठी. समाजाने विज्ञानाभिमुख नव्हे, तरुणांनी अधिक कार्यक्षम व्हावे, बुद्धीचा योग्य वापर करावा. वेळेचे मूल्य ओळखून स्वतःची व देशाची प्रगती साधवी असे वाटते. सध्याच्या तरुणांनी साधेपणाने राहणे, काटकसरीने राहणे, स्वावलंबी होणे आवश्यक आहे. त्यासाठी प्रथमपासून शारिरीक व बौद्धिक कष्टाची सवय हवी असे वाटते.

## व्यवसायातील आदर्श व्यक्ती कोण? त्यांच्याप्रमाणे होण्याचा जाणीवपूर्वक प्रयत्न केला कां?

आजपर्यंतच्या आयुष्यात मला भेटलेल्या व्यक्तींमध्ये माझे शाळेतील शिक्षक श्री, केसकर, डॉक्टरेटचे मार्गदर्शक डॉ. ए. गोस्वामी, फिजिकल रिसर्च लॅबोरेटरीचे डायरेक्टर डॉ. विक्रम साराभाई व इतर शास्त्रज्ञ जसे डॉ. कियोटाका वासा व जर्मनीचे डॉ. अर्नेस्ट बऊर या व्यक्तींना मी माझे आदर्श मानतो व त्यांच्या व्यवसायातील मार्गदर्शक तत्वे आचरणात आणण्याचा मी सदैव जाणीवपूर्वक प्रयत्न करतो.

मी नवीन पिढीला संदेश देऊ इच्छितो की आजच्या काळात आमच्या वेळी होत्या त्यापेक्षा अनेकविध संधी त्यांना उपलब्ध आहेत हे त्यांनी आपले सुदैव मानावे, अर्थात संधी आहेत तशी जीवघेणी स्पर्धाही आहे. ह्या स्पर्धेला त्यांना तोंड द्यावे लागत आहे. परंतु त्यांनी आपल्यासमोरील संधीचा फायदा करून घेऊन आपल्या छबी उमटविण्यासाठी, आपल्या ध्येयप्राप्तीसाठी, स्वतःच्या, व कुटुंबाच्या राहणीमानाचा स्तर उंचविण्यासाठी व उत्तम समाजाच्या निर्मितीसाठी करून घेतला पाहिजे...

सुर्याच्या शक्तीचा वेध घेणारे प्रो. नीलकंठ ढेरे ज्ञानेश्वर-तुकारामच्या पायी मस्तक टेकवण्यास नेहमीच तयार असतात. त्यांच्या मते शास्त्रीय संशोधन हे Material आहे. पण स्पिरिच्युअल (आध्यात्मिक) सायन्स मधील ज्ञानेश्वर तुकारामचे आणि सर्व संतांचे कार्य हे Non-Material असल्याने तो बुद्धीपलीकडचा प्रांत आहे. व म्हणूनच मानवाने या संतचरणी नतमस्तक व्हावे. डॉ. ढेरे यांच्या ठिकाणी ही विनम्रवृत्ती प्रशंसनीय आहे. आपली पृथ्वी मुबलक साधनांनी संपन्न आहे, ज्यातून प्रत्येकाची गरज निश्चितपणे नक्कीच पूर्ण होईल. ई मेल : dherefsec.ucf.edu

(‘प्रज्ञावंतांची दैनंदिनी’, लेखिका सौ. स्नेहसुधा कुलकर्णी आणि निहारा प्रकाशन पुणे यांच्या सौजन्याने)



# Childhood



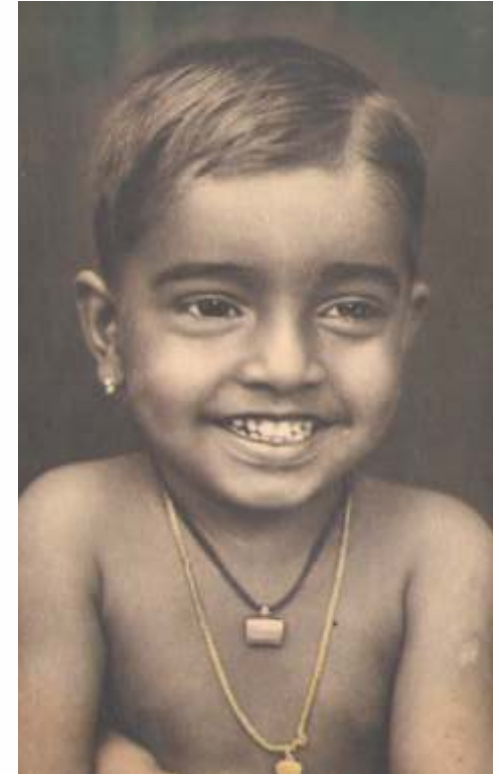
Neelkanth Baby photo



Dada- on left (with friend Madan Gandhi )



Dada sitting on floor/ father on chair extreme right



Dada as kid

# Pune, 1960-70



Neelkanth and Sucharita on boat ferry in 1970s



Research group at NCL, Dr. Goswami (L) and Dr. Finch (R) seated, Neelkanth standing far left



Neelkanth and Sucharita during the tour in Brazil in 1970s



Farewell to Neelkanth and Sucharita, Aai. Rajani, Ashok and Dada's friends at Bombay airport



# Pune, 1960-70



Sucharita and Rajani Bennur, with  
Neelkanth, Deokar and young Tamma Huddar



Sucharita with Rajani Bennur, Snehalata Taore  
and Shaku Huddar



Research group at NCL with Dr. Finch and Dr. Goswami



# With Pandit Ravi Shankar, 1970



# Brazil, 1970-80



Neelkanth in Brazil at SBV meeting in 2004 with Leila



Neelkanth with Krishnamachar in 1970s



Conference in Brazil.

## Various Conference in Brazil, 1970-80



## Various Conference in Brazil, 1970-80

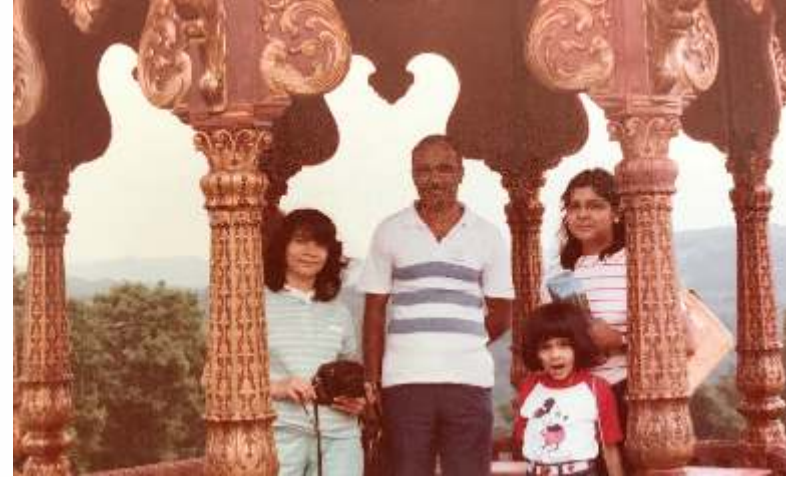




# Glimpses from Brazil, 1970-80



# Glimpses from Brazil, 1970-80





# Glimpses from Brazil, 1970-80

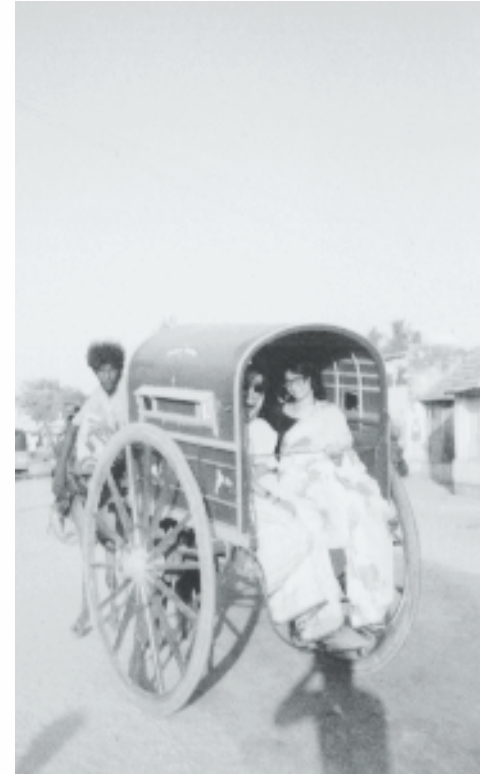


# Pilgrimage with Mother, 1984





# Pilgrimage with Mother, 1984



# Pilgrimage with Mother, 1984



# Family, 1990



# Family, 1990





# Family, 1990



# Aditya Wedding, 2017



# Aditya Wedding, 2017





# Aditya Wedding, 2017





# Vishal Wedding, 2019





**Dr. Neelkanth G. Dhere alongwith Dr Sucharita Dhere**

Dr. Neelkanth Dhere had a long research career spanning over six decades during which he worked in three different countries across three continents. He moved to Brazil in 1970 and developed a world class thin film research lab at IME. His pioneering work on thin film solar cell development was started in Brazil and continued at FSEC in USA. He had a great passion for research and teaching and has trained over 100 graduate students in Brazil and USA. He is an internationally recognized scientist and most of his students are working in various prestigious companies continuing his legacy.