

## **The Journey from a Village as a Farmer's Son to Fashion World as a Scientist in Leather**



**Dr J Raghava Rao**  
**Chief Scientist, Chemical Laboratory, CSIR-CLRI, Chennai**

I was born in a small town Nellore in Andhra Pradesh on 30th August 1961. My father Late Sri J Subba Naidu was a farmer in a small village with no proper education. My mother Mrs J Leelavathi of 90 years is a house wife presently living with me. I have 4 sisters and 1 brother. The village I was born had no proper school. My father's passion to educate his children well, made him send all his children to his relative's place with proper schools for seeking quality education. My journey started in my elder sister's house with the first school in Nellore, St Joseph English Medium School. One of the teachers, Ms Rita inspired my young mind for performing well in academics. After class 7, I moved to Vijayawada along with my sister to get admitted in St Joseph School for my secondary schooling. I was an average student at that time and used to get lots of help from my cousin Dr Sailaja for subjects like Maths and Science. While studying I used to do lots of house work (which is helping me a lot after my marriage!). Learning to do things yourself always gives you confidence during your life time. I qualified in 10th Standard and moved to Junior Intermediate after seeking admission in Andhra Loyola College. I was staying in a hostel for the first time. It is different experience altogether to stay in a hostel and studying in College. I learnt a lot in being independent and the methodology of teaching and culture really inspired me. One of the Maths teachers really inspired me to look for seeking engineering education. I came out successfully with good marks and sought admission in Anna University in Leather Technology. My Uncle played an important role at this point of time in shaping me.

The college life at AC College of Technology and the curriculum at Central Leather Research Institute made us proud and fortunate to learn the latest developments in leather research. We had the privilege of being the students of the premier institutions. The academic culture coupled with institutional culture shaped us to think of taking up an academic career. The atmosphere plays an important role in shaping a student's career. I used to have many friends from North and enjoyed and learnt a lot from them. I used to do very well in mathematics that made me to help the faculty sometimes. This made me to be like a teacher to enjoy certain privileges.

The faculty at both AC College and CLRI made us to correlate the science to life. During my project time, I came in contact with a fair, short, dynamic and creative personality who had just then returned from LEEDS, UK, my role model and mentor, Dr T Ramasami. He inspired me a lot and I used to seek

guidance from him for my project. This contact transformed in to a father-son relationship that led to mentorship from him for shaping my future academic career. It is he who shaped me to this stage.

After completing my B.Tech, I joined for M.Tech without fellowship as there were limited seats with fellowship. Ours was the first batch with 6 students for M.Tech in leather. My father and brother played a vital role in supporting me to pursue higher studies without fellowship. Dr D Ramaswamy, people call him as Vadhiar was the in-charge for the PG courses. He is a very supportive teacher and I stood first in his subject. I approached Dr T Ramasami for his guidance during my M.Tech project as I was interested in continuing my doctoral program. He tested my seriousness to pursue research by making me wait the whole day. I was so serious to join with him and I passed his test in commitment. This is the turning point in my academic career to join with him in the Chemical Laboratory known for its commitment, perfection and culture. I joined the Chemical lab group and started learning from one and all in the lab. The support of Dr B U Nair and Mr BGS Prasad is enormous that made me to change from timid personality to bold personality. The perfection in analytical techniques was taught by Dr M Kanthimathi, whose value does not err even if the instrument errs.

My M.Tech thesis comprises of both basic as well as applied work on the management of chromium in tanneries. The work was so designed that it bagged first two prizes in the poster session of Tanners Get-together held in 1987. This gave me so much of confidence to do better. The motivation and companionship is something we never get from any place as I got from my work place, Chemical laboratory of CLRI, which I regard as temple. The lab was functional round the clock and never used to be closed. It was like our house and I used to sleep in the lab sometimes doing work late nights. Dr T Ramasami, called as Dr TR always spent time with the students at bench level. I was caught once from a distance when I was filling the distilled water bottle for keeping the lid down. That is the observation of the person on his students from distance. He always says and practices that the knowledge is for sharing with others and not for keeping it to oneself. I learnt a lot from him both in terms of science and humanity. Chemical laboratory does not practice hierarchy and treats the students as one among the family members. This approach is different from the University approach. The freedom to learn more and do differently is of high order.

After my M.Tech, I continued my PhD under Dr TR where I continued on the same topic of chrome management as the Chemical Lab was known as 'Chromium Lab' and Dr TR as 'Chromium TR' those days. The foundation laid by him transformed me to improve my knowledge and gain several recognitions in my scientific career. During my journey this is the best part of my student life I have ever had in my career. Apart from doing research we were put to several projects, which made us learn several things in doing good science. I still can't forget that my supervisor travelled by train along with me, while I was a student to work for a consultancy project to M/s Golden Chemicals Ltd. to develop a technology for high exhaust chrome tanning salt. He taught us the discipline, commitment and sincerity to do things made us climb the ladder. He is instrumental in transforming me to a young dynamic scientist with several rewards. The knowledge which he imparted made us strong to face any difficult situation. He was a hard task master. One incidence I recall is my methodology exam which was so tough with grilling from my guide that the Doctoral committee members came in support of me. We were four doing PhD at that time; NK Chandrababu, B Chandrasekaran and V Subramanian. Dr Nair was instrumental in molding us to the tune of Dr TR through his presence in supporting us to perform better. The members of the chemical lab are always supportive of me to stand taller at difficult times. I used to be so organized that Dr TR used to use my work place for any experiment. I used to maintain my work book with perfection so as to easily identify any mistake that happens later.

On 25 June 1993, I joined CLRI as a Scientist in Chemical laboratory. I was put to several projects both National and International and my commitment to do things with sincerity helped me to perform better. I became the teacher for the B.Tech students in 1994 and I was very eager in sharing the knowledge through the fundamental principles learned from my mentor, Dr T Ramasami. The passion to learn and do research with commitment made me a well organized researcher. Like in normal life, we move from childhood to adolescent to adulthood, now I moved from school kid to researcher learning things and now turning to a scientist to be a teacher. The teachings of Dr TR fascinated me to practice teaching as well as scientific job with perfection.

I started working in the new areas like changing the fundamentals of leather processing through crazy ideas and it worked out well that we published in the high rated ACS journals and brought laurels to the group as well as to CLRI in leather research. My mentor was impressed with my presentation at one of the Research Council meetings and sent an emotional letter to keep my tempo high and look further to perform better. His yard stick always changes to higher side to his group people. He admires his students when they perform well and he always treats us as his children. This is the special feature of the chemical laboratory that it operates since then as a family without any hierarchy.

We gained global prominence in terms of developing new pathways for leather making. This resulted in several awards from Govt. of Tamilnadu, DBT, NRDC, Burhani-NEERI foundation, TANSa, WIPO and the prestigious Indira Gandhi Paryavaran Purashkar Award from the Ministry of Environment and Forests. All this was possible because of hard work and having committed students in my career. Getting a committed students makes the supervisors life simple and easy to perform better. I was so fortunate that I was associated with several young and bright students who delivered in the same lines as I did to my mentor. Now the role changed from being mentored to mentoring others. I still practice his principles in mentoring with a human touch.

I still remember and follow the teachings of my mentor while he moved to take a responsible position as Secretary, Department of Science and Technology, GoI, New Delhi. Never get disturbed or perturbed by looking down to others while moving up in an inclined platform in your career. Dr AB Mandal, a person of simplicity in the Director's Chair is very supportive for me in doing science of my choice. Dr Nair's personal and professional support made me to perform well in new areas of leather science and technology.

At times of frustration in research career, Dr Aruna used to say that hard work always pays you Rao, please be cool and go ahead. The company of young colleagues Dr KJ Sreeram and Dr Nishad Fathima gave me enormous energy to take challenges with ease to perform better. There are times we outreached our fellow scientists in setting goals. Our group received several National and International recognitions for the scientific work done in the area of leather science and technology.

I was associated with several students at B.Tech/M.Tech/M.Sc/PhD and Diploma as a supervisor or faculty. The students were many starting from KJ Sreeram, P Thanikaivelan, B Madhan, NN Fathima, R Aravindhyan, S Saravanabhavan, A Musa, Swarna V Kanth, V Punitha, Jayakumar, Ivy and several others. Some of them after their doctoral program joined CLRI and some went to industry. I take the pride to say that our group generated 3 CSIR Young Scientists, 1 INSA Young fellow and I Young ISCA award with quality research. Our group has published maximum number of papers in leather and non-leather journals globally. My success in this phase is due to the people associated with me and the collective efforts of all made me successful. I was elected Fellow of Indian National Academy of Engineering (FNAE). We need to take people along with and make them grow independently as they

move forward. This concept helped me to attain popularity in attracting several students for their post graduate and doctoral programs. We need to teach the students in a way that they understand you to be a part of the program with commitment and ownership.

I am happy to share that once I was asked to coordinate an international project in Ethiopia when it was faced with several challenges and this opportunity helped me to display my leadership quality by making this project successful. Once an opportunity comes, you need to grab and perform well to get yourself recognized. An impact making presentation was made to the Minister of Industries during the Steering Committee Meeting held in Ethiopia. I have been a member of several international projects and visited several countries in collaboration with research activities. I have really enjoyed my research career and it took time to understand the importance of doing research to meet the social demands. The leather research is always associated with societal needs through technology transfer for the needs and sustenance of the leather sector.

As a farmer's son I have seen cattle in my village and took a career as a scientist in leather, which is made from the outer skin to meet the global needs. My wife Dr KV Rajeswari, son Mr JV Sai Bharat and daughter Ms J Sravani played a very vital role in bearing the pain in supporting me to perform well to reach this position. At time of difficulty and frustration, they are always there to provide me an ambience to be cool and gain confidence. They encouraged me to reach taller in excelling science. Once after marriage, I remember my mentor telling my wife not to expect me to be back home by 6 PM. Research career is always associated with peaks and dips and you need to be careful in having patience to face the challenges. My father's and brother's dream to see me as a person of highest education from our village fulfilled and this I would like to carry forward in giving a supportive hand to the school in my village as well as to the needy students of our school to pursue higher education.

My success is due to my family members at one stage (Childhood) and then due to my teachers and mentors (Researcher) and finally due to my students, colleagues and family (Scientist). The passion to do science in meeting the societal needs to be looked at as a service rendered by a doctor to a patient in saving his life. Our life needs to be fulfilled to do service to the mankind through scientific inventions in pursuing science through a research career. Hard work always provides you happiness and joy. Practice what you preach and take people along with you and share the success and allow them to grow has been my mantra for success. The success of your student is your success. Research career makes you happy when you perform science with passion.