

Challenges in my Journey Towards Achievements



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I am describing here some challenges and opportunities I faced in my professional journey. I hope this will be a morale booster to young engineers.

Early life, education

Born in a middle-class family among seven children, challenge was to finish studies, get a job and extend financial support to my father. My dad's vision was very clear: he wanted me to Graduate in Engineering, end up with a Ph.D. and proceed abroad. Schooling and preuniversity education proceeded without any hassles. Engineering Education was financially a very tough thing.

To get into IIT I had to face a very heavy competition; every aspirant almost got into some coaching class; professional coaching involved heavy finance, the class schedules often clashed with the school final exams and it was not an easy job to focus on both, with equal attention. On the other hand, I had to focus on admission programme of University of Madras-covering 8 colleges in the State. Got a late admission to one of the colleges. Here, started my journey for becoming an engineer; long cherished dream of mine and of my father; for the first time, away from home and alone; started slowly getting accustomed to things, met different types of students, took some time to understand the system/type of living over there, spotted an opportunity for me to get a merit-cum-means scholarship, which I could get and that took me smoothly through the five-year B.E.-Honours programme. For the Honours programme two extra subjects need to be studied and minimum 70% aggregate marks to be scored. Immediately after the final semester exams started preparations for the BARC Training school selection programme; a threshold to a professional career.

"In the middle of difficulty lies opportunity." Albert Einstein

Beginning of journey

With only a bachelor's degree I started my journey, entered BARC, only to be of financial support to my father. The desire (fire) for higher education is constantly there inside me. Entry into BARC was after a temporary defeat for me. Napoleon Hill quoted "opportunity often comes disguised in the form of misfortune or temporary defeat." I have/ had always liked R&D specifically in engineering. Little did I know that entering BARC would provide me a platform for my higher studies viz; M.Tech. and Ph.D. Twelve full years rolled by-marked by marriage, fatherhood and promotions in office but my yearning was for higher education. On one fine morning, my Head of Dept. asked me if I had interest in pursuing M.Tech. With delight, I said yes and the procedure started; again, I had a temporary defeat with respect to admission but it was resolved due to intense efforts of Head and soon I was into the M.Tech. programme. After a gap of Twelve years I faced difficulties in the classroom but my inner fire for a Ph.D. degree kept me moving. Changed over from my regular M.Tech. programme into one by research and gained lot of ground in that. Thus, converted a challenge into an opportunity. On successful completion of M.Tech., my Head of Dept. was again after me to go for my Ph.D. with a demand that it should be completed within three years-a challenge disguised. Encouraged by my M.Tech. experience I readily accepted this. During this subsequent period of a decade and half I deeply rooted myself in the domain of welding, rather solid state welding, less explored area in the country.

"A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty." Winston S. Churchill

Before joining the Ph.D. programme another disguised opportunity came my way viz; visit to Iraq on an official assignment of teaching welding, to the Iraqi Atomic energy department. What an opportunity to go deeper into welding! Little did I foresee this was a precursor to my future assignment about two decades away?

After the assignment was over, came back to India vigorously started the Ph.D. course work. Remembering this would be the final classroom interactions with conviction and hard work pushed through successfully and settled for the experimental work. The permissions for carrying out experiments in the Defence labs were there and full-fledged experiments were started. Perseverance did pay. Thanks to the research environment in BARC. The expected results were there and the thesis could be compiled and submitted. Lifetime ambition of a Ph.D. degree was realized.

"Spend eighty percent of your time focusing on the opportunities of tomorrow rather than the problems of yesterday." Brian Tracy

Sensing the final decade of my career, ie prior to retirement, persevered for fulfilling my ambitions: developed techniques in welding for control of distortion, assured quality and improvising manufacturing cycle time, developing technology and infrastructure, developing a range of dissimilar metal joints for various critical applications, innovations in in-house heat treatment and constantly on the lookout for newer techniques.

Acquired expertise in the following: Diffusion Bonding of dissimilar metals, Distortion control in Heavy Welded Structures, Vacuum diffusion brazing, Electron Beam Welding, Friction welding. Also, developed skills in the following: Taught Material Science to training school Mech. Engg. Trainees, Delivered lectures to ISNT- level 2 participants, Basic Course for ASNT level III. Organized welding course (Basic and Advanced) in CDM to BARC participants. Guiding Ph.D, M.Tech. and B.E. project work done in CDM, BARC Professor HBNI, BARC. Course co-coordinator - INS, Industrial Courses: Welding NDT and structural integrity-2005&06. Examiner: M. Tech. & Ph.D. in IIT, Powai, Referee for welding project under BRNS, BARC. As a result of all these activities, I was shortlisted for Technical Excellency Award - an award of highest order in BARC - met with temporary defeat - I was not the final awardee.

"I will prepare prepare and some day my chance will come." Abraham Lincoln

But these were disguised opportunities: the innovative idea in Heat Treatment brought for me the Prime Minister's Shram award—this was won for the First and Only time in the history of the division (CDM) in BARC.

Two of the dissimilar metal joints attracted lot of importance—national and international. One of them was awarded a Patent.

And the crown of all this was election to the INAE-my lifetime ambition. More was to follow: within days of retirement got an invitation from a leading company in Mumbai to work on welding related problems in Nuclear field. After a period of three years I was selected and offered a dream job i.e. Chair-Professor in the MS University. There was a precursor to this almost two decades ago.

My journey continues.

We are all faced with a series of great opportunities, brilliantly disguised as insoluble problems.

"Each problem has hidden in it an opportunity so powerful that it literally dwarfs the problem. The greatest success stories were created by people who recognized a problem a turned it into an opportunity." Joseph Sugarman