

CV: Dr D R Prasada Raju

1. Name: **Dandu Radha Prasada Raju**
2. Date of Birth: 01.01.1955
3. Affiliation:
Professor of Mechanical Engg and Dean: MVGR College of Engg-Vizianagaram
R&D Advisor: IIT-Madras, Jawaharlal Nehru Tech Univ-Kakinada and VIT Univ-Vellore/Chennai
Visiting Professor: IIT-Tirupati, Andhra University-Visakhapatnam, PSG Institutions-Coimbatore,
and GMR Institute of Technology-Rajam
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5. Academic Qualifications:

Degree	University/Institution	Year	Specialisation
i. B.Tech	Jawaharlal Nehru Technological University Govt College of Engineering, Anantapur	1977	Mechanical Engg
ii. M.Tech	Indian Institute of Technology Delhi	1979	Design Engg
iii. Diploma in Computer Applns	Thiagarajar College of Engg, Madurai	1981	Computer Languages
iv. PG Study(1-yr)	University of Newcastle, New Castle upon Tyne, UK (British Council Fellow)	1992	Environmental Engg
v. Ph.D	Andhra University, Visakhapatnam	1999	Mechanical Engg

6. Experience:

- i. Project Engineer/Dy Director, National Small Industries Corp, New Delhi: Jul 1979-Jan 1984
--Implementation in renewable energy projects, viz, rice-husk furnace, rice-husk ash cement plant, fuel pallets from biomass, solar wood seasoning kiln, etc.
- ii. Sr Planning Engineer, NTPC Ltd, New Delhi, Feb 1984-Jun 1989
--Project Management Services in establishment of 1260 MW Vindhyachal Super Thermal Power Plant.
- iii. Principal Scientific Officer/Director/Scientist-G and Head of Division, Department of Science and Technology, Government of India, Jun 1989-Dec 2014
--Promotion and management of S&T through policy framework, formulation of various R&D programmes its implementation and application for societal needs, etc., including water technology and related aspects. Initiated and facilitated implementation of various projects for addressing various water challenges in the field providing access to drinking water in various parts of the country.
- iv. Full Life Cycle Leader, Byrraju Foundation, Hyderabad: Dec 2003-Aug 2008 (sabbatical from DST)
--Conceptualisation and implementation of Safe Water for Everyone using Effective Technology (SWEET) programme for addressing drinking water problems in rural areas on sustainable basis. Project SWEET lead to provision of safe drinking water, in panchayat-public-private partnership mode in villages across several districts in Andhra Pradesh, on sustainable basis. Many organisations, including UNHABITAT, replicated the model within and outside India.
- v. Faculty/Adviser in Academic Institutions: Since Jan 2015
--Enthuse faculty to take up R&D, advise and guidance to faculty in implementation of extra-mural research projects, especially related to water purification technologies, social/community service, etc.

7. Recognition/Honours:

Individual Level:

- i. **British Council Fellow, UK** (Guest Faculty at Univ of New Castle, New Castle upon Tyne, 1992
- ii. **Certificate of Merit** for the paper published in Journal of Production Engineers by The Institution of Engineers (India), 1996
- iii. **Aani Muthyam (precious pearl) Award** by Manava Vikasa Samithi, Gollalakoderu Village, 2004
- iv. **Andhra Pradesh Scientist Award** for notable services in social sector by Andhra Pradesh Council of Science and Technology, Government of Andhra Pradesh, 2007.
- v. **Distinguished Alumnus Award** by Andhra University, Visakhapatnam, 2008
- vi. **Best Scientist/Engineer Award** for scientific and technological interventions and societal contributions, by the 95th Indian Science Congress, 2008.
- vii. Shortlisted for **Prime Minister's Award for Excellence in Public Administration**, for notable services through successful implementation of Project SWEET, 2009.
- viii. **Eminent Engineer Award** for contribution to the profession of Mechanical Engineering, by The Institution of Engineers (India), 2012.
- ix. **AIMTDR Silver Jubilee Award** for contribution in the area of Manufacturing Technology, Design and Research, by Jadavpur University, Kolkata (Organisers of 4th International and 25th All India Manufacturing Technology, Design and Research Conf), 2012.
- x. **Pravasa Bharatiya Udyog Ratna Award** for contributions in the field of science and technology, by Delhi Telugu Academy, 2015.
- xi. **Life Time Achievement Award** in recognition of role, contributions, achievements and excellence in the field of mechanical engineering, by Venus International Foundation, 2015.
- xii. **Rashtriya Gaurav Samman Award** for notable achievements in science and technology, by India International Friendship Society, 2015.

Project/Team/Group Level:

- i. **Best Water NGO-Water Quality in India Award** for successful implementation of Project SWEET by Water Digest and UNESCO for 3 successive years: 2006, 2007 & 2008.
- ii. **Japanese Award for Most Innovative Development Project** for implementation of project Safe Water for Everyone using Effective Technology(SWEET) by Global Development Network,2007.
- iii. **Best Practice Certificate** for Project SWEET towards improving the living environment by International Jury for Dubai Municipality and UNHABITAT Award, 2008.
- iv. **Outstanding Display** of Project SWEET by the 95th Indian Science Congress, 2008.
- v. **Best Practice Certificate** for Project SWEET towards improving the living environment by International Jury for Dubai Municipality and UNHABITAT Award, 2008.
- vi. **National Urban Water Award** for successful design and implementation of Project River Bank Filtration by Union Ministry of Urban Development, 2009.
- vii. **Certificate of Appreciation for Best S&T Intervention for Inclusive Societal Benefit** by Uttarakhand Council of Science and Technology, Government of Uttarakhand, 2012.
- viii. **Best application of S&T to Benefit Society Award** by Asscn of Hydrologists of India, 2012.
- ix. **Implementation of Best Practices in Reaping of Rain Water Award** for Rain Water Harvesting Systems in Rajasthan by Institute of Rural Research and Development, 2012.
- x. **Grand Challenges: Top Solutions Award for Solar Multi-Effect desalination Project by Technology Review (a Publication of Massachusetts Institute of Technology, USA)** (selection criteria includes massive impact of technology in the rural villages), 2012.
- xi. **National Award for Excellence in Surface Water Sector** by Union Ministry of Water Resources (recommended), 2013.
- xii. **FICCI-HSBC Water Award** (Innovation Category-1st Rank) by FICCI, 2013.
- xiii. Shortlisted for **PM's Award for Excellence in Public Administration**, for successful implementation of water technology programme, 2013.

8. Fellowship/Membership of Academies/Professional Bodies:

- i. Fellow, Indian National Academy of Engineering (FNAE)
- ii. Fellow, Andhra Pradesh Akademi of Sciences (FAPAS)
- iii. Fellow, Telangana Academy of Sciences (FTAS)
- iv. Fellow, The Institution of Engineers (India) (FIE)
- v. Member, Association of Hydrologists of India (MAHI)
- vi. Member, Indian Society for Technical Education (MISTE)
- vii. Member, Indian Society for Mechanical Engineers (MISME)
- viii. Member, Computer Society of India (MCSI)

9. Publications:

- i. No of papers in National/International Journals: 8
- ii. No of Papers presented in International/National Conferences: 25
- iii. No of Technical Reports: 5

10. Sponsored/Consultancy Projects undertaken:

- i. Treatment of rural domestic sullage water through bio-remediation, sponsored by Rural Technology Applications Group, IIT-Madras, Sep 2005-Aug 2006, Cost: Rs 2.26 Lakh.
- ii. Study performance of low cost nano-silver coated filters for removal of bacteria in surface water, sponsored by International Advanced Research Centre for Powder Metallurgy and Newmaterials, Jan 2006-Jul 2007, Cost: Rs 4.38 Lakh (Technology commercialised and SBP Technologies Pvt Ltd, Hyderabad is manufacturing the product 'Puritech', since Nov 2007).
- iii. Study on improvement in health indicators amongst school children in rural areas due to consumption of safe water, sponsored by Andhra Pradesh Council of Science and Technology, Mar 2006-Sep 2007, Cost: Rs 2.12 Lakh.
- iv. Establishment of water treatment facility in peri-urban areas (slums) of Indore and Jabalpur (MP), sponsored by UNHABITAT, Mar 2007-Aug 2008, Cost: US\$ 30000 (Rs 18.74 Lakh).
- v. Groundwater dynamics-vis-à-vis discharge potential of rain water in Alluvial soils of Andhra University campus, supported by Dept of Science & Technology, Dec 2015-Nov 2018, Rs 176 lakh TO Andhra Univ (Adviser)
- vi. Effect of Palmera fruit husk on remediation of chemicals in ground water, supported by Dept of Science & Technology, Jun 2016-May 2019, Rs 25.60 lakh to MVGR College of Engg (Co-PI)

11. Representation on Committees (related to water technology):

- Counterpart Official, Study on Shipboard Automation, United Nations Economic Commission for Asia and Pacific (1986-07)
- Member of Sub-Committee on Transportation, Island Development Authority (1986-08)
- Member, Technical Advisory Committee, Central Manufacturing Technology Institute, Bengaluru (1995-2003 and since 2009)
- Member, Board for Industrial Research & Development, IIT-Delhi (1996-99)
- Member, Technology Development Mission, IIT-Kanpur (1999-2002)
- Member of Syndicate, Biju Patnaik University of Technology, Rourkela (2003-06)
- Member, National Committee on Water, CII, New Delhi (2006-08) and Water Management Council, Godrej Green Business Centre-CII, Hyderabad (2007-09)
- Chairman/Member of Selection Committee for promotion of Scientists-National Informatics Centre and Defence Research and Devp Orgn, Govt of India (2000-2008)
- Member, Scientific Advisory Committee, Union Ministry of Water Resources (2009-14)
- Member, Expert Committee on Surface Water and Climate Change, Central Water Commission, Union Ministry of Water Resources (2011-14)
- Member, R&D Advisory Committee, Ministry of Drinking Water & Sanitation (2011-14)
- Member, Selection Committee for Post-Graduate Programme, IIM-Indore (since 2011)
- Member, Sectional Committee, Bureau of Indian Standards, New Delhi (2011-14)

- Chairman, Committee for Evaluation of Water Treatment Systems for removal of Fluorides and Iron, Ministry of Drinking Water and Sanitation (2012-13)
- Member, Technical Committee, Central Water and Power Research Station, Ministry of Water Resources, Pune (2011-14)
- Member, Jury for HSBC-FICCI Water Awards, Federation of Indian Chambers of Industry and Commerce (since 2012)
- Member, Expert Committee, Central Soil and Materials Research Station, Ministry of Water Resources, New Delhi (2013-14)
- Member, Steering Committee, Software Technology Parks of India, Dept of Information Tech and Electronics, Ministry of Communications and Information Tech (2012-14)
- Member, All India Board for Post-Graduate Education and Research, All India Council for Technical Education, New Delhi (2011-13)
- Chief Assessor-Young Engineer & Scientist Awards, Honda Foundation(Japan) (since 2014)
- Chairman, Gender Budget Committee, Union Ministry of Science and Technology (2013-14)
- Chairman of Steering Group on Good Laboratory Practice, Organisation for Economic Cooperation and Development (France) (2014)
- Reviewer of Projects--Technology Development Board, Ministry of Water Resources, Ministry of Drinking Water and Sanitation, Indo-US Science & Technology Forum
- Honorary Treasurer, AP Akademi of Sciences (2015-16)
- Member of Finance Committee, Telangana Academy of Sciences (2015-16)
- Member of Executive Committee, Association of Hydrologists of India (since 2015)
- Adjudicator of Doctoral Thesis: Andhra University-Visakhapatnam, Bharatiar University-Coimbatore and Osmania University-Hyderabad (since 2009)
- Member of Governing Council/Advisory Board-Educational/Research Institutions:
 - b. GMR Institute of Technology (Autonomous), Rajam (since 2005)
 - c. Srinivasa Institute of Engineering and Technology, Amalapuram (since 2007)
 - d. Shri Vishnu Institute of Technology, Bhimavaram (since 2011)
 - e. VR Siddartha Engg College (Autonomous-UGC Nominee), Vijayawada (since 2012)
 - f. PSG Institute of Advanced Studies, Coimbatore (since 2012)
 - g. Gokaraju Rangaraju Educational Society, Hyderabad (since 2015)
 - h. Kovai Medical Centre and Hospital Research Foundation, Coimbatore (since 2015)
 - i. VIT University, Chennai/Vellore (since 2015)

12. Summary of Contributions:

Dr Prasada Raju in his early career, while at National Small Industries Corporation Ltd (NSIC), successfully implemented projects in the field of renewable energy, viz, rice-husk furnace, rice-husk ash cement plant, briquetting plant producing fuel pallets from biomass, solar wood seasoning kiln, etc. Some of these products, exhibited as a part of Commonwealth Heads of Government Meeting in the year 1982, received appreciation. His proactive role and timely intervention, while serving National Thermal Power Corporation (NTPC) Ltd, has lead to timely completion of 1260 MW Vindhyachal Super Thermal Power Plant, that too within the budgeted amount.

After 10 years of service in NSIC and NTPC, he joined DST in 1989 as Principal Scientific Officer and rose quickly in the position because of his worthy contributions. His broad understanding and assessment on the national requirements has resulted in Vision Document-2000 for taking up research and development in various fields of Engineering Sciences. His concern, with a proactive approach, has culminated in fostering many research initiatives, a few prominent being establishment of Arc Welding Robot Workcell, Rapid Prototyping System, Electron-beam Physical Vapour Deposition System, Abrasive Waterjet Machining system, Centre for Laser Processing of Materials, etc, besides creation of national facilities, viz, Centre for Computational Fluid Dynamics, National Geo-centrifuge, National Wind Tunnel and Centre for Precision Engineering in various academic/research institutions. These contributions have facilitated promising S&T community to

pursue research in cutting edge technologies, particularly in the disciplines of Civil, Mechanical and Manufacturing Engineering and Robotics. His focused and professional approach made it possible to complete the peer review and the sanction process on a fast pace at which various expert committees, S&T community and peers take pride.

Dr Prasada Raju's zeal to apply S&T to improve quality of life in rural areas, lead him spending 4.5 years in villages by leaving position of prominence and comforts of life in Delhi. In association with Byrraju Foundation (an NGO dedicated to rural transformation), he successfully implemented a unique initiative Safe Water for Everyone using Effective Technology (SWEET), with a great passion, as its Full Life Cycle Leader. The catalytic role and vigorous approach adopted by him in conceptualizing and designing this programme, was reviewed critically by domain experts, who acclaimed it as one of the best possible solutions for addressing drinking water problems in villages. The gradual scaling up of the project footprint has evolved to be an innovative model, wherein the government, NGO and the village Panchayat played a complementary role, with community contributing and owning responsibility of running the facility after its stabilisation. Such a consultative and participative role, through adoption of efficient and cost effective technological processes, proved sustainability of the model, resulting in spreading it to 66 clusters (groups of 2-3 villages), benefiting a million people across 200 villages in AP, besides its adoption by other organizations, including UN-HABITAT, in 30 locations in other parts of country and abroad.

Dr Prasada Raju has played a pivotal role in implementing Winning, Augmentation and Renovation (WAR) for Water Programme, aimed to find research based technological solutions to address various water challenges in the country, which received appreciation from peers and also Hon'ble Supreme Court, at whose instance this has been launched. He has shown complete involvement and leadership in identifying convergent and holistic solutions leading to establishment of appropriate treatment systems, addressing many water challenges. The collective and inclusive approach that he adopted facilitated the availability of better technical support at the field level in resolving critical/complex issues and accelerated timely implementation of the projects within the estimated cost. His positive and innovative way of bringing together the solution providers, government officials, domain experts and the stake holders yielded unprecedented results not only in the establishment of state of the art plants but also ensured active involvement of community at all levels, benefiting nearly 2 million people, mostly in much needed villages in remote locations and tribal areas, in having adequate quantity of safe drinking water on sustainable basis.

In addition to the above, Dr Prasada Raju initiated and implemented many programmes, in the areas of Clean Energy Research Initiative, Cognitive Science Research Initiative, Good Laboratory Practice, Knowledge Involvement in Research Advancement through Nurturing (KIRAN) for gender parity, Science for Equity Empowerment and Development. His proactive approach and active involvement resulted in creation of a Joint Clean Energy R&D Centre, co-funded by India and USA, with sizeable contribution from Industry, to accelerate development of solar energy technologies by lowering the cost per watt of photo-voltaics and concentrated solar power, with Indian Institute of Science (IISc) and National Renewable Energy Research Laboratory, USA, leading the team of researchers, with active engagement of industry from both the countries. Another initiative under this collaborative programme included Joint Center for Building Energy Research and Development, jointly taken up by consortia, lead by CEPT University-Ahmedabad and Lawrence Berkeley National Laboratory, USA, focusing on integration of information technology with building controls and physical systems for commercial/high-rise residential units so as to ensure energy savings through development of cost-effective technologies.

In the area of Good Laboratory Practice (GLP), he came out with many standard operating procedures that were successfully implemented making the system more responsive and compatible with developed nations. This facilitated studies and data generated there by Indian Non-clinical laboratories the status of Mutual Acceptance of Data within Organisation for Economic Cooperation and Development (OECD), ensuring export of chemicals, drugs, pesticides, etc. from India to these countries. Because of these measures, Dr Prasada Raju was elected as Chairman of

Steering Group on GLP by OECD and India has been chosen to conduct of 12th advanced training on GLP, a unique recognition for any developing country. The systematic and proactive steps adopted for GLP inspections, made National GLP Compliance and Monitoring Authority, which he headed, certified under ISO, a rare occurrence for any government outfit to achieve so.

His passion in taking S&T for societal development lead to initiation of many action oriented and location specific programmes aimed towards socio-economic upliftment of disadvantaged sections of the society, especially in rural areas. Some of the notable contributions he made include revival of traditional crafts and arts, development and adaptation of technology for improving quality of life for the benefit of elderly and disabled population, widen the network of women technology parks to improve both quantity and quality of processes/products and value addition therein in formal and non-formal sectors, development of post-harvest technology and agricultural implements used by women to improve productivity and reduce drudgery, improved practices for occupational health and enhanced production in technology areas, like, sericulture, aquaculture, etc where women are major stake holders, skill up-gradation for utilization of available local resources and providing means for women for starting entrepreneurial production or service units in villages.

As a Chairman of Gender Budget Committee, Dr Prasada Raju strongly advocated issues related to Women S&T community. He planned and implemented internship programme for women scientists with break in career/ service to work with regular/senior scientists to hone the skills and gain confidence before taking up R&D programmes/projects. In order to take care of women scientists, forced with relocation due to family circumstances, he conceptualised and developed Women Migration Fellowship programme thus creating an avenue to continue their engagement in S&T arena. His deep sense of commitment to this cause and aggressive approach ensured allocation of higher quantum of funds for women scientists scheme, facilitating 3 fold increase in a short time attracting women scientists in taking up R&D thus ensuring their participation in mainstreaming of S&T in good numbers. About 30% of women scientists associated with the scheme on completion or mid-way through the R&D projects were able to find regular position in various S&T establishments thus gainfully using their talents and expertise for meaningful research.

13. Philanthropy:

After retirement from DST, Dr Prasada Raju, spurning many attractive offers from various organisations, opted to associate with a few academic institutions, including IIT-Madras, as Adviser/Visiting Faculty, mostly on voluntary basis, to enthuse young faculty to take up R&D. He, hailing from a poor family in a small village, having benefitted from the charity of fellow students and faculty, while pursuing B Tech, wishes to pay back to the society and enjoys the 'joy of giving'. He has been sharing 5% of his salary every year for various social causes and contributed cash component of various awards (Rs 12.00 lakh) and the major portion of terminal benefits (Rs 22.50 lakh), received on retirement from Government service, towards instituting scholarships for poor students and Endowment Lectures in honour of old teachers in a couple of engineering institutions with which he was/is associated. He is a regular donor of blood and donated it 36 times during the last 3 decades and also engages in voluntary work in the agricultural farms within the colony where he lives.