Brief Profile

Dr. T.P.D. Rajan
Principal Scientist, Materials Science and Technology Division,
CSIR - National Institute for Interdisciplinary Science and Technology,
Trivandrum – 695 019, INDIA.

Academic Qualification

- Ph.D. (Engg.), CSIR-National Institute for Interdisciplinary Science and Technology, Trivandrum, Metallurgical and Materials Engineering
- M.Tech., National Institute of Technology, Surathkal, Mangalore, Metallurgical Engineering

Area of Interest and Expertise

- Composite Materials, Functionally Graded Materials, Light Alloys, Foundry Technology, Nanomaterials, Surface Technology and Advanced Materials Processing.

Publications & Patents

Research Papers (Journals/Proceedings) – 126 Nos
Book Chapters -5
Patents – 2 Nos.
Conference Presentations and Invited lectures – 78 Nos.

Membership in Professional societies

- Life Member, The Indian Institute of Metals (IIM).
- Life Member, Materials Research Society of India (MRSI).
- Life Member, The Society for Polymer Science, India (SPSI)
- Life Member, Academy of Microscope Science and Technology (AMST)
- Life Member, Kerala Academy of Sciences (KAS)
- Life member, Indian Society for Advancement of Materials and Processing Engineering (ISAMPE)
- Member, The Institute of Indian of Foundrymen (IIF)

Synopsis of the contribution to research

The main area of research is on development of metal-ceramic composites, functionally graded materials, surface treatments and coatings, nanocomposites, light alloys and development of engineering components and structures using metal-ceramic composites and light alloys for various fields such as automotive, aerospace, defence, nuclear and general engineering sectors. Since 2002, actively involved in the research and development of various processes and materials of metal-ceramic composites mailny based on aluminium alloys reinforced with particulates of silicon carbide, graphite, boron carbide, flyash and alumina and short fibers of carbon and aluminosilcate. Developed various engineering components such as functionally graded brake rotor discs, cylinder liners, pistons and gears for automotive applications, composite armours, gear housing and piston rings for battle tanks using aluminum matrix composites. Currently engaged in development of ultrafine grain aluminum composites for aerospace structures by equal channel angular pressing, boron carbide reinforced Al MMC for neutron shielding and Mg composites for aerospace structures. Published about 116 technical papers (journal/proceedings) and filed 2 patents. Guided 8 Ph.Ds., 25 M.Tech, 4 B.Tech. and 4 M.Sc. theses and currently guiding 6 Ph.D. and 3 M.Tech. students. Recipient of various national level awards such as IIM Nalco Gold medal, 'IIF Research Award', INAE Innovation Award and Soli Commissariat Award.