

SHORT BIOSKETCH

PROF. JANAKARAJAN RAMKUMAR



Indian Institute of Technology, Kanpur



PROF. JANKARAJAN RAMKUMAR

PROFESSOR (HAG), DEPARTMENT OF ME & DESIGN,
FNAE, FETE, FIE(I), CHARTERED ENGINEER (INDIA),
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Executive Profile

Dr. Janakarajan Ramkumar is a Professor (HAG) in the Department of Mechanical Engineering and Design at IIT Kanpur, with over two decades of experience across industry, research, and academia. He has positioned IIT Kanpur as a global leader in translational research within manufacturing and micromachining through high-impact projects with ISRO, DRDO, HAL, and NTPC.

As a serial innovator, he spearheads the development of revolutionary defense aids and medical devices. His work is characterized by the commercialization of novel mechanical designs, having secured grants exceeding 260 million INR. He currently manages several critical facilities, including the Imagineering Laboratory, MedTech Facility, and RuTAG.

Degree	University/Institute	Year	Specialization
PhD	Indian Institute of Technology, Madras	2003	Mechanical Engineering
MTech	Indian Institute of Technology, Madras	1999	Mechanical Engineering (Gold Medalist)
BTech	National Institute of Technology, Trichy	1996	Production Engineering (Best Outgoing Student)

Professional Experience at IIT Kanpur:

- HAG Professor: 2022 – Present
- Professor: 2015 – 2022
- Associate Professor: 2010 – 2015
- Assistant Professor: 2003 – 2010

International Research Fellowships:

- Osaka University, Japan: Research Fellow (2015)
- Fraunhofer Institute, Germany: Research Fellow (2012)
- Tokyo Institute of Technology, Japan: Visiting Faculty (2009)
- University of Illinois, USA: Research Fellow (2008)

Research & Innovation Impact

Key Metrics:

- Publications: 390+ Peer-reviewed Articles
- Patents: 100+ Patents Filed/Accepted (5 Commercialized)
- Citations: 6700+ | h-index: 43
- Grants: ~334 Million INR (Sponsored Research)

Areas of Specialization:

Micro/Nano Manufacturing, New Product/Process Development, Tribology, Composite Manufacturing, and Medical Device Development.

Pioneering Innovations:

- DeeScope: A novel integrated system for gynecological examination, combining visual diagnosis with cytology sample collection.
- Sabjikothi (Saptkrishi): A cost-effective, wheel-mountable preservative setup that extends the shelf-life of fruits and vegetables by 5–30 days.
- Medical Aids: Developed SWASA N-95 masks (worn by the Prime Minister), Mobile Masterjee for digital teaching, and Oxygen Concentrators for COVID-19 relief.
- Defense Technology: Created textile-based metamaterial absorbers for RADAR stealth, tested by the National Security Advisor's office.

Administrative & Leadership Roles

- Late GK Dubey Memorial Lifetime Achievement Award: IEEE UP Section (2023)
- Fellow of INAE: Indian National Academy of Engineering (2022)
- Eminent Production Engineer Award: Indian Institute of Production Engineering (2022)
- Gopal Das Bhandari Memorial Distinguished Teacher Award: IIT Kanpur (2015)
- SITARE-GYTI Award: Gandhian Young Technological Innovation Awards (2020)
- Young Scientist Award: Indian Science Congress Association (2009)

And Many more...

Knowledge Dissemination

Published Books (Selected):

- Collaborative Robots in Operative Dentistry, Springer India (2025).
- Advances in Digital Manufacturing Systems, Springer (2023).
- Unconventional Machining Processes, CBS Publishers (2022).
- Electrochemical Spark Machining Process, CRC Press (2022).

Global Online Teaching (MOOCs):

Dr. Ramkumar has reached **over 1,00,000 learners globally through NPTEL and agMOOCs.**

- Computer Integrated Manufacturing: 95,000+ views.
- Manufacturing of Composites: 5,20,000+ views.
- Product Design & Manufacturing: Consistent offerings from 2020–2026.
- Design Thinking for Agricultural Implements: Targeted toward the manufacturing fraternity and agriculturists.

Mentorship & Outreach

- **Students Graduated:** 127 (M.Tech, M.Des, MS, and PhD).
 - **Current Research:** Guiding 16 PhD scholars.
 - **Start-up Incubation:** Nurtured successful ventures including E-Spin Nanotech, LCB Fertilizers, Sidd Labs, and DeDzines.
 - **Community Invitation:** Dr. Ramkumar actively invites the manufacturing fraternity to collaborate on scalable, frugal innovations that address grassroots challenges in healthcare and agriculture.
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