# Kishore Babu Kancherla

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LinkedIn | GitHub | Google Scholar | Research Gate

## Professional Experience

**Integrative Multi-scale Engineering Materials and Systems (iMEMS) Lab**
*Department of Aerospace Engineering, Indian Institute of Science (IISc), Bangalore, KA, India*

**Project Scientist – III** *Apr 2024 – till date*
**Project Scientist – II** *June 2022 – Mar 2024*
**Project Scientist – I** *Apr 2022 – May 2022*
**Project Associate** *May 2015 – Nov 2019*
**Research Associate – II** *Dec 2019 – Sep 2020*
**Research Associate – III** *Oct 2020 – Mar 2022*

Experienced professional with about a decade of proven expertise in Project coordination, Grant writing, and Experimental design. Skilled in Testing, Quality optimization, Stakeholder management, Technical documentation, Lab development and Asset maintenance with a strong focus on adopting Lean methodologies, Six Sigma principles, and Agile project management for projects funded by Boeing, Shell, ISRO, SERB, ADA, DRDO, and others.

**Cognizant Technical Solutions India Pvt Ltd.,** *Chennai, TN, India*

**Programmer Analyst** *Jan 2015 – Mar 2015*: Software quality assurance: Designing, Planning, and Executing test cases, Collaborating with developers and product managers

## Educational Credentials

**Integrated Dual Degree** — **Materials Science and Technology**
MTech and BTech (Hons.)
***IIT (BHU), Varanasi, 2014***
*Thesis:* 'Synthesis, Characterization and Microwave Absorption Properties of Nanocrystalline Perovskites'

## Skills and Competencies

**Technical**

| | | |
|---|---|---|
| → Process Design and Data Analysis | • Root Cause Analysis<br>• FMEA, Measurement System Analysis (MSA)<br>• Hypothesis testing, ANOVA<br>• Design of Experiments (DoE) | • SWOT analysis<br>• Graphical Tools<br>• Statistical Process Control (SPC)<br>• Value Stream Mapping (VSM) |
| → Functional Testing | • Material Property Characterization – Physical, Microstructure, Phase, Mechanical, Thermal, Electro-magnetic, Non-destructive (NDT) as per ASTM, ISO, IEEE, ASME, MIL, FAA standards | |
| → Advanced Manufacturing | • Advanced Polymer Composites (CFRP, GFRP, Sandwich, Hybrid, Natural)<br>• Additive Manufacturing (FDM, LIM, LPBF) | • Material Synthesis (Nano: Sol-gel, GNP)<br>• Sensor Manufacturing (PZT, PVDF, CNT) |
| → Grant Writing | • Comprehensive literature reviews<br>• Identification of technology gaps<br>• Formulation of objectives and methodologies<br>• Drafting detailed project proposals | • Collaboration with interdisciplinary teams<br>• Preparation of budget estimates<br>• Compliance with submission guidelines |
| → Software | • Technical documentation (MS O365)<br>• Project Management (SharePoint, Planner, Trello, Jira) | • Data Analysis (MATLAB, Excel, Minitab, SQL)<br>• Data Visualization (MATLAB, ORIGIN, Excel, Power BI) |
| **Management** | • Waterfall, Agile (Scrum, Kanban)<br>• Critical Thinking<br>• Problem Solving<br>• Planning, Execution, Monitoring & Control | • Effective Communication<br>• Cross-functional Team Management<br>• Continuous Process Improvement<br>• Cost Benefit Analysis |
| **Professional Certifications** | • Lean Six Sigma Black Belt (The Council for Six Sigma Certification, USA)<br>• Chat-GPT for Six Sigma: AI Visualization Proficient (AIGPE)<br>• Mastering ISO 9001:2015 – QMS (QG) | • Product Management – Basics (Udemy)<br>• Project Management (Ivan, Udemy)<br>• Practical Leadership Skills (Chris Croft, Udemy) |

## Awards and Achievements

- → Published 4 Peer Reviewed Research Papers,10+ Conference Proceedings and Presentations and 8 Technical Project Reports.
- → Best paper award in 'SAE Aerocon-2024' conference for 'Assessing the Structural Feasibility and Recyclability of Flax/PLA Bio-Composites for Enhanced Sustainability'
- → Presented Research work on 3D printed Functionally graded composites at Siemens Conference Center, Berlin, Germany in ASME AMRGT-2019.
- → Trained more than 100 junior researchers in Research Planning, Execution, Delivery, Asset maintenance, Safety and Technical documentation.
- → AIR 36 and AIR 42 in GATE 2017 and GATE 2014 respectively and IIT-JEE 2009 rank holder.

## Projects – Roles, Responsibilities and Outcomes

→ *Sponsored Projects (Industry/Government)*

| Roles | Responsibilities | Outcomes |
|---|---|---|
| **Development of Algorithms and Testing Tools for Directed Energy System on Long-range and Agile Aerial Targets: Target Tracking, Accurate Pointing, Beam Stabilization, and High Lethality** *Directorate of Futuristic Technology Management (DFTM), Defence Research & Development Organisation (DRDO), Ministry of Defence, Govt. of India.* (2024 – ongoing) | | |
| Technical contributor | • Design of Experiments using in-house designed and developed Directed Energy (DE) system on laser-material interactions in adverse atmospheric conditions to enhance lethality | • Optimized DE system parameters by studying high energy laser and material interactions on UAV structures (alloys/composites) to enhance extent of damage |
| **Selective Laser Melting Process Modelling, Diagnostics, and Tool Enhancement** *Boeing Research and Technology Centre, The Boeing Company, USA,* (2023 – 2025, Completed) | | |
| Project coordinator & Technical contributor | • Design of Experiments, Development of Process diagnostic methodology and Hardware set-up | • Developed a novel method of closed loop monitoring of powder bed fusion process based on multiple diagnostic techniques |
| **Remaining Life Assessment of Non-Metallic GRP Pipeline in the Oil and Gas Industry** *Shell India Pvt. Ltd., India,* (2024 – ongoing, 1st year completed) | | |
| Technical contributor | • Design of Experiments, Development of testing methodology of GRE pipes for remaining useful life | • Developed accelerated fatigue methodology to estimate remaining useful life of oil and gas GRP pipelines |
| **Multi-scale Design of Advanced Composites and Development of New Manufacturing Technologies** *SERB (currently ANRF), DST, Govt. of India,* (2020-2023, Completed) | | |
| Project coordinator & Technical contributor | • Multi-scale design, Selection of materials, Development of advanced manufacturing processes, Thermo-mechanical testing | • Developed an advanced multi-scale composite by optimization of fillers at different length scales with enhanced thermo-mechanical performance |
| **Thermo – mechanical Fatigue Analysis of Solar Panels** *UR Rao Satellite Centre (URSC), ISRO, Govt. of India,* (2019 – ongoing) | | |
| Technical contributor | • Design of Experiments, Fatigue analysis of space deployable solar panels in the extreme temperature conditions ranging from -150°C to 100°C | • Developed a new accelerated methodology of thermo-mechanical fatigue testing & analysis to estimate RUL of solar panels<br>• Determined material-wise thermo-mechanical fatigue life of solar panel components |
| **ADA-IISc Joint Design and Development of Carbonaceous Radar Absorbing Structures** *Aeronautical Development Agency (ADA), Ministry of Defence, Govt. of India,* (2019-2022, Completed) | | |
| Project coordinator & Technical contributor | • Design and development of Multi-scale EM FGM and Sandwich composite, Theoretical optimization of material composition, Advanced manufacturing process, EM/Mechanical Testing and analysis, NDT manufacturing inspection | • Optimized RAM composition and performance in the desired frequency band of 2-18 GHz<br>• Developed sandwich composite with 3D printed PEEK honeycomb core<br>• Developed functionally graded composites with graded RAM and fabric architecture |
| **ADA-IISc Joint Design and Development of Scaled Model of UAV for Radar Scattering Studies and Related Technologies,** *Aeronautical Development Agency (ADA), Ministry of Defence, Govt. of India,* (2018-2021, Completed) | | |
| Project coordinator & Technical contributor | • Design and Development of Multi-scale EM fabric and sandwich composite, Optimization of manufacturing process, EM/Mechanical Testing and analysis, Development of NDE manufacturing inspection | • Developed scaled model of next generation UCAV with stealth capabilities in collaboration with ADA<br>• Developed full-proof manufacturing inspection for RAM composites for varying compositions<br>• Established Microwave co-axial waveguide testing facility at Aerospace department, IISc |
| **Development of Nano-Composite Structures with Enhanced Thermo-Mechanical Properties, Damping, and Self-Sensing Capabilities,** *ACECOST Phase-III, AR&DB, DRDO, Govt. of India,* (2014-2018, Completed) | | |
| Technical contributor | • Nano-material synthesis and characterization, Development of new manufacturing methods for nanocomposites by optimizing processing parameters, Thermo-mechanical characterization | • Developed an optimized nano-additive dispersed composite for thermo-mechanical applications<br>• Embedded piezo based sensors in composites for structural health monitoring applications |

→ *In-house Projects*

- Development of Sustainable Composites and Their Enhanced Recyclability.
- Recycling of Fiber Reinforced Polymer Matrix Composites.
- Thermal Barrier Coatings for Scramjet Applications.
- Synthesis and Characterization of ZnO Nanostructures for Bio-sensing Applications.