

Kishore Babu Kancherla

+91 9559783695 | kishore.kkb92@gmail.com | kishore.kkb92@outlook.com
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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

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.

Project Associate

May 2015 – Nov 2019

Research Associate – II

Dec 2019 – Sep 2020

Research Associate – III

Oct 2020 – Mar 2022

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

MTech and BTech (Hons.)

IIT (BHU), Varanasi, 2014

Materials Science and Technology

Thesis: 'Synthesis, Characterization and Microwave Absorption Properties of Nanocrystalline Perovskites'

Skills and Competencies

Technical

→ Process Design and Data Analysis	<ul style="list-style-type: none">Root Cause AnalysisFMEA, Measurement System Analysis (MSA)Hypothesis testing, ANOVADesign of Experiments (DoE)	<ul style="list-style-type: none">SWOT analysisGraphical ToolsStatistical Process Control (SPC)Value Stream Mapping (VSM)
→ Functional Testing	<ul style="list-style-type: none">Material Property Characterization – Physical, Microstructure, Phase, Mechanical, Thermal, Electro-magnetic, Non-destructive (NDT) as per ASTM, ISO, IEEE, ASME, MIL, FAA standards	
→ Advanced Manufacturing	<ul style="list-style-type: none">Advanced Polymer Composites (CFRP, GFRP, Sandwich, Hybrid, Natural)Additive Manufacturing (FDM, LIM, LPBF)	<ul style="list-style-type: none">Material Synthesis (Nano: Sol-gel, GNP)Sensor Manufacturing (PZT, PVDF, CNT)
→ Grant Writing	<ul style="list-style-type: none">Comprehensive literature reviewsIdentification of technology gapsFormulation of objectives and methodologiesDrafting detailed project proposals	<ul style="list-style-type: none">Collaboration with interdisciplinary teamsPreparation of budget estimatesCompliance with submission guidelines
→ Software	<ul style="list-style-type: none">Technical documentation (MS O365)Project Management (SharePoint, Planner, Trello, Jira)	<ul style="list-style-type: none">Data Analysis (MATLAB, Excel, Minitab, SQL)Data Visualization (MATLAB, ORIGIN, Excel, Power BI)

Management

- Waterfall, Agile (Scrum, Kanban)
- Critical Thinking
- Problem Solving
- Planning, Execution, Monitoring & Control
- Effective Communication
- Cross-functional Team Management
- Continuous Process Improvement
- Cost Benefit Analysis

Professional Certifications

- Lean Six Sigma Black Belt (The Council for Six Sigma Certification, USA)
- Chat-GPT for Six Sigma: AI Visualization Proficient (AIGPE)
- Mastering ISO 9001:2015 – QMS (QG), AS9100D (Alison)
- Product Management – Basics (Udemy), PLM (Great Learning)
- Project Management (Ivan, Udemy)
- 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 Key Outcomes

→ *Sponsored Projects (Industry/Government)*

Roles	Responsibilities	Key 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 <i>Directorate of Futuristic Technology Management (DFTM), Defence Research & Development Organisation (DRDO), Ministry of Defence, Govt. of India. (2024 – ongoing)</i>		
Technical contributor	<ul style="list-style-type: none"> Design of Experiments using in-house designed and developed Directed Energy (DE) system on laser-material interactions in adverse atmospheric conditions to enhance lethality 	<ul style="list-style-type: none"> 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 <i>Boeing Research and Technology Centre, The Boeing Company, USA, (2023 – 2025, Completed)</i>		
Project coordinator & Technical contributor	<ul style="list-style-type: none"> Design of Experiments, Development of Process diagnostic methodology and Hardware set-up 	<ul style="list-style-type: none"> 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 <i>Shell India Pvt. Ltd., India, (2024 – ongoing, 1st year completed)</i>		
Technical contributor	<ul style="list-style-type: none"> Design of Experiments, Development of testing methodology of GRE pipes for remaining useful life 	<ul style="list-style-type: none"> 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 <i>SERB (currently ANRF), DST, Govt. of India, (2020-2023, Completed)</i>		
Project coordinator & Technical contributor	<ul style="list-style-type: none"> Multi-scale design, Selection of materials, Development of advanced manufacturing processes, Thermo-mechanical testing 	<ul style="list-style-type: none"> 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 <i>UR Rao Satellite Centre (URSC), ISRO, Govt. of India, (2019 – ongoing)</i>		
Technical contributor	<ul style="list-style-type: none"> Design of Experiments, Fatigue analysis of space deployable solar panels in the extreme temperature conditions ranging from -150°C to 100°C 	<ul style="list-style-type: none"> Developed a new accelerated methodology of thermo-mechanical fatigue testing & analysis to estimate RUL of solar panels Determined material-wise thermo-mechanical fatigue life of solar panel components
ADA-IISc Joint Design and Development of Carbonaceous Radar Absorbing Structures <i>Aeronautical Development Agency (ADA), Ministry of Defence, Govt. of India, (2019-2022, Completed)</i>		
Project coordinator & Technical contributor	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Optimized RAM composition and performance in the desired frequency band of 2-18 GHz Developed sandwich composite with 3D printed PEEK honeycomb core Developed functionally graded composites with graded RAM and fabric architecture Established Microwave co-axial waveguide testing facility at Aerospace department, IISc
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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Developed scaled model of next generation UCAV with stealth capabilities in collaboration with ADA Developed full-proof manufacturing inspection for RAM composites for varying compositions
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	<ul style="list-style-type: none"> Nano-material synthesis and characterization, Development of new manufacturing methods for nanocomposites by optimizing processing parameters, Thermo-mechanical characterization 	<ul style="list-style-type: none"> Developed an optimized nano-additive dispersed composite for thermo-mechanical applications 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.