



Dr. Krishna Kishore Mugada

Assistant Professor

Department of Mechanical Engineering

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Area of Research: Friction stir welding and processing, Dissimilar metals joining, Resistance spot welding, Cold Metal Transfer, Hybrid welding and joining, Microstructure and materials processing, Wire arc additive Manufacturing, AI and ML in Manufacturing.

Educational Qualifications (From Highest):

Doctor of Philosophy (Ph.D.) in Mechanical Engineering with the area of research in manufacturing from National Institute of Technology Warangal, Telangana, India.

Master of Technology (M.Tech) in Mechanical Engineering with the specialization in Computer Integrated Design and Manufacturing from National Institute of Technology Jamshedpur, Jharkhand, India.

Bachelor of Technology (B.Tech) in Mechanical Engineering from VR Siddhartha Engineering College (Affiliated to ANU), Vijayawada, Andhra Pradesh, India.

Professional Experience (Teaching) (From latest position):

Designation	Organization	Period	
		From	To
Assistant Professor	National Institute of Technology Surat, Gujarat, India.	April 2021	Till Date
Assistant Professor	Gayatri Vidya Parishad College of Engineering, Madhurawada, Visakhapatnam, India.	June 2018	June 2019

Course Taught Previously:

U.G. Theory

- Manufacturing Technology-II
- CAD/CAM
- Elements of Mechanical Engineering

U.G. Laboratory

- Manufacturing Technology -I (Lab)
- CAD/CAM (Lab)
- Engineering Drawing (Lab)

- Engineering Drawing (Theory)
- Material Science
- Welding Science and Technology
- Manufacturing Processes

Publications:

1. Krishna Kishore Mugada, Kumar Adepu "Effect of re-entrant shoulder channel and pin shapes on material flow and mechanical properties of Al-Mg-Si alloy" Part C: Journal of Mechanical Engineering Science, SAGE Publications, 0(0), **2021**: 1-13. (SCI)
2. Krishna Kishore Mugada, Aravindan Sivanandam, and Ravi Kumar Digavalli. "Wire+ Arc Additive Manufacturing of Metals: State of the Art and Challenges." Additive Manufacturing Applications for Metals and Composites, **2020**, 106-126. (Book Chapter)
3. Krishna Kishore Mugada, Kumar Adepu "Role of scroll shoulder and pin designs on axial force, material flow and mechanical properties of friction stir welded Al-Mg-Si alloy" Metals and Materials International, Springer, **2020**, 1-12. (SCI)
4. Krishna Kishore Mugada, Kumar Adepu "Effect of knurling shoulder design with polygonal pins on material flow and mechanical properties during friction stir welding of Al-Mg-Si alloy" Transactions of Non-ferrous Metals Society of China, Elsevier. 29 (11), **2019**, 2281-2289. (SCI)
5. Krishna Kishore Mugada, Kumar Adepu "Role of tool shoulder interface on friction stir weld characteristics of 6082 aluminum alloy" Journal of The Institution of Engineers (India)- Series C, 100 (2), **2019**, 343-350. (SCOPUS)
6. Krishna Kishore Mugada, Kumar Adepu "Effect of tool/material interface temperature on flow stress and Zener-Holloman parameter in Al 6082 friction stir butt welds" IOP Conference Series: Materials Science and Engineering, Vol 474, 1, **2019**, 1-7 (SCOPUS)
7. Krishna Kishore Mugada, Kumar Adepu "Influence of ridges shoulder end features with polygonal pins on material flow and friction stir weld characteristics of 6082 aluminum alloy" Journal of Manufacturing Processes Vol. 32, **2018**, 625-634. (SCI)
8. Krishna Kishore Mugada, Kumar Adepu "Influence of tool shoulder end features on friction stir weld characteristics of Al-Mg-Si alloy" International Journal of Advanced Manufacturing Technology Vol 99, Issue 5-8, **2018**, 1553-1566. (SCI)
9. Krishna Kishore Mugada, Kumar Adepu "Influence of shoulder diameter on Temperature and Z-parameter during friction stir welding of Al 6082 alloy" IOP Conference Series: Materials Science and Engineering, 330, **2018**, 1-7. (SCOPUS)
10. P. Naresh, A. Kumar, M. Krishna Kishore "Influence of nano reinforcement volume percentage on fabrication of surface nano composite by FSP" Material Science forum, Vol. 879, **2016**, 1369-1374 (SCOPUS)

Research Projects (Ongoing/completed):

- Investigation of interfacial interaction and grain structure development in friction stir welds for dissimilar joining of high strength aluminum to titanium alloys, DST, Role -Co-PI.

- Design and Development of portable static shoulder with adjustable tool fixture and study the interface microstructure during friction stir welding of dissimilar Al-Ti alloys, GVPCE, Role -PI.

Conferences/STTP/ Seminars/Workshops/Training Programmes attended:

- 10 Days GIAN course on Computations methods and parallel processing in Science and Engineering, 20th Dec 2017 to 30th Dec 2017, Department of Mechanical Engineering, NIT Warangal.
- 5 Days GIAN course on Welding metallurgy and Weldability of Non-Ferrous alloys, 11th Dec 2017 to 15th Dec 2017, Department of Metallurgical and Material science Engineering, IIT Madras.
- 5days GIAN course on Welding metallurgy and Weldability of Stainless steels, 11th Dec 2017 to 15th Dec 2017, Department of Metallurgical and Material science Engineering, IIT Madras.
- SERB School on Crystallographic Texture, 3rd Oct 2017 to 7th Oct 2017, Department of Metallurgical Engineering and Material science, IIT Bombay.
- Short term course on TEM and HRTEM in Materials Characterization (TEM/HRTEM-2017), 18th to 22nd September 2017, Department of Material science and Engineering, IIT Kanpur.
- NRC-M Workshop of Texture of Materials, Feb 15- 19th 2015, Materials Department, IISC- Bangalore.

Expert Lectures Delivered at Various STTP/FDP/Seminars/Workshops:

- “Friction stir welding” Advanced Joining Processes Unit, INEGI - Institute of Science and Innovation in Mechanical and Industrial Engineering, Porto, Portugal in April 2021.
- “Friction stir welding: Advancements and Applications” at Raghu Institute of Technology, Visakhapatnam in June 2020.
- “Advances in solid state joining processes” at Lakkireddy Balireddy College of Engineering Vijayawada in May 2020.
- “Machine learning in Welding” at Lakkireddy Balireddy College of Engineering, Vijayawada in May 2020.
- “Trends in friction associated processes” at National Institute of Technology Tiruchirappalli in November 2019.
- “Friction stir welding: Introduction, applications and advancements” at HMRIT, Delhi in November 2019.
- “Experimental and numerical simulation of friction stir welding” at National Institute of Technology Warangal in May 2019.
- “Friction stir welding: Applications and variants with case studies” at Indian Institute of Technology Delhi in the Short-term course of Joining of advanced materials on 10th Dec 2019.

Honors/Awards:

- Best paper award, “Effect of stacking sequence on mechanical properties of Glass Fibre Reinforced Composites” NCAETS-2019, Hyderabad.

- Best paper award, “Role of fabrication method, stacking sequence on Damping and fracture behavior of Glass fiber reinforced composite laminates” NCAETS-2019, Hyderabad.
- Outstanding Reviewer Award in Journal of Manufacturing processes, Elsevier 2018.
- DST-International travel Support (ITS) grant for attending international conference JAAA2018, Japan in the year of 2018.
- Student travel grant for attending international conference THERMEC 2016, Austria in the year of 2016.

Countries visited:

- The Welding Institute (TWI), Cambridge, U.K.
- University of Graz, Austria, Europe.
- Kitakyushu International Conference Centre, Japan.
- Energy System Materials Lab, Department of Advanced Materials Engineering, DONG-Eui University, South Korea.

Memberships in Professional Bodies:

- Life Associate Member, Indian Institute of Welding (IIW) Hyderabad Chapter; Membership No: R-11356/2.
- Life Associate Member, Institution of Engineers (IEI); Membership No: AM1864303.
- Life Member, Indian Welding Society (IWS), Membership No: L01917.

Reviewer of Journals:

- Journal of Materials and Design (Elsevier) (No of Manuscripts =05).
- Journal of Manufacturing processes (Elsevier) (No of Manuscripts =02).
- International Journal of Advanced Manufacturing Technology (Springer) (No of Manuscripts >20).
- Material Science KTU (No of Manuscripts =01).
- Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications (No of Manuscripts =8).
- Advances in Joining Processes. (No of Manuscripts =04).
- Journal of The Institution of Engineers (India): Series C Mechanical, Production, Aerospace and Marine Engineering (No of Manuscripts =01).
- Transactions of Nonferrous Metals Society of China (No of Manuscripts =01).