

Faculty Profile

Name : Dr. Yogesha. K. K.
Designation : Professor
Department : Mechanical Engineering
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About me: My primary research interests lie in the field of material processing and characterization, with a focus on the preparation of bulk nanostructured metals, alloys, and nano-composites, as well as their fatigue and fracture behaviour. I obtained my Ph.D. from IIT Roorkee. I have been honoured with the Best Research Article Award from the American Society of Metals (ASM), USA, in 2016 and 2023, each carrying a prize of US \$3000. Additionally, I hold two granted patents and have published more than 30 research articles in reputed international journals and conferences.

Qualification:

B.E. (Mysore Univ.), M.Tech (VTU, Belagavi), Ph.D (IITR)

Courses Taught: Manufacturing process 1,2,3, Non-destructive Testing, Mechanical engineering science, Computer aided engineering drawing, Machine drawing, Material science and metallurgy, Internal combustion engines, I C engines, Automotive engineering,

Publications:

Journal Publications

International Journal Publications:

1. Yogesha, K. K., Kumar, N., Joshi, A., Jayaganthan, R., & Nath, S. K. (2016). A Comparative study on tensile and fracture behavior of Al–Mg alloy processed through cryorolling and cryo groove rolling. *Metallography, Microstructure, and Analysis*, 5(3), 251-263.
2. Joshi, A., Kumar, N., Yogesha, K. K., Jayaganthan, R., & Nath, S. K. (2016). Mechanical properties and microstructural evolution in Al 2014 alloy processed through multidirectional cryoforging. *Journal of Materials Engineering and Performance*, 25(7), 3031-3045.
3. Yogesha, K. K., Joshi, A., Kumar, N., & Jayaganthan, R. (2017). Effect of cryo groove rolling followed by warm rolling (CGW) on the mechanical properties of 5052 Al alloy. *Materials and Manufacturing Processes*, 32(12), 1336-1344.
4. Joshi, A., Yogesha, K. K., Kumar, N., & Jayaganthan, R. (2016). Influence of annealing on microstructural evolution, precipitation sequence, and fracture toughness of cryorolled Al–Cu–Si Alloy. *Metallography, Microstructure, and Analysis*, 5(6), 540-556.

5. Joshi, A., Yogesha, K. K., & Jayaganthan, R. (2017). Influence of cryorolling and followed by annealing on high cycle fatigue behavior of ultrafine grained Al 2014 alloy. *Materials Characterization*, 127, 253-271.
6. Yogesha, K. K., Joshi, A., & Jayaganthan, R. (2017). Fatigue behavior of ultrafine-grained 5052 Al alloy processed through different rolling methods. *Journal of Materials Engineering and Performance*, 26(6), 2826-2836.
7. Yogesha, K. K., Joshi, A., Raja, A., & Jayaganthan, R. (2019). High-cycle fatigue behaviour of ultrafine grained 5052 Al alloy processed through cryo-forging. In *Materials Processing Fundamentals 2019* (pp. 153-161). Springer, Cham.
8. Kalavathi, G. K., Somashekhar, M., Vasundhara, M. G., & Yogesha, K. K. (2019). Analytical Study of Roughness on Tilted Pad Thrust Slider Bearing Improved by the Boundary Slippage. In *Applied Mechanics and Materials* (Vol. 895, pp. 70-75). Trans Tech Publications Ltd
9. Kothiyal, P., Joshi, A., Mer, K. K. S., & Yogesha, K. K. (2022). Studies on tensile fracture and two body wear behavior of Al/Si₃N₄-Al₂O₃ nanocomposites prepared by powder metallurgical route. *Metallography, Microstructure, and Analysis*, 11(4), 580-594.
10. Singh, A. K., Joshi, A., Ravi, R. K., Pant, P. K., Pathak, M. K., & Yogesha, K. K. (2023). Microstructure Evolution and Fracture Toughness Behaviour of Cryorolled LM6 Al Alloy. *Key Engineering Materials*, 941, 83-89.
11. Yogesha, K. K., Joshi, A., Raja, A., Jayaganthan, R., & Verma, R. (2023). Effect of Different Rolling Techniques on Fatigue Crack Propagation in 5052 Al Alloy. *Metallography, Microstructure, and Analysis*, 12(1), 62-73.
12. Pant, R., Joshi, A., Gairola, S., Hulugappa, B., & Yogesha, K. K. (2023). Investigation of Anisotropic Properties of Al 5052 Alloy Deformed by Cryorolling and Cryo-cross Rolling. *Metallography, Microstructure, and Analysis*, 12(4), 692-701.
13. Joshi, A., Yogesha, K. K., Chamoli, S., Jayaganthan, R., & Owolabi, G. M. (2023). Fatigue crack growth behavior of Al 2014 alloy subjected to cryogenic rolling and post-rolled annealing. *Metallic Materials/Kovové Materiály*, 61(5).
14. Vasundhara, M. G., Kalavathi, G. K., Pradeesh, E. L., Yogesha, K. K., Prakash, H. R., Muralidhara, B., & Hulugappa, B. (2023). Simulation of Self Tuning Shape Memory Alloy Based PZT Energy Harvester. *Journal of Mines, Metals & Fuels*, 71(12).
15. Joshi, A., Yogesha, K. K., Jayaganthan, R., & Chamoli, S. (2024). Strain hardening behavior and microscopic fracture mechanism in multidirectional cryoforged Al 2014 alloy. *Journal of Materials Engineering and Performance*, 33(12), 5963-5987.
16. Kothiyal, P., Muralidhara, B., Hulugappa, B., Chandan, M., Yogesha, K. K., Pathak, M. K., & Joshi, A. (2024). Effect of Al₂O₃ reinforcement on behavioural characteristics of aluminium metal matrix nanocomposites. *Metallography, Microstructure, and Analysis*, 13(3), 462-477.
17. Thapliyal, S., Joshi, A., Gairola, S., Kalavathi, G. K., Vasundhara, M. G., Muralidhara, B., & Yogesha, K. K. (2025). A Study of Impact Toughness Behavior and High Cycle Fatigue Properties of Al-Li 8090 Alloy Processed by Cryorolling and Post-Deformation Annealing. *Metallography, Microstructure, and Analysis*, 14(2), 422-434.

18. Babu, S. P., Yogesha, K. K., M G. Vasundhara., G K Kalavathi., Goudar, D. M., Kurahatti, R. V., & Bhat, S. K. (2025). Enhanced mechanical, thermal, and wear performance of halloysite nanotube infused carbon fiber epoxy composites. *Scientific Reports*, 15(1), 1-25.

Conference Proceedings

International Conference Proceedings:

1. IIM-NMD-ATM 2015, Mechanical Behavior of 5052 Al–Mg Alloy Processed Through Cryorolling 13th to 16th Nov, 2015, PSG Tech. Coimbatore
2. IIM-NMD-ATM 2015, Tensile and Fracture properties of Al 2014 alloy processed through multidirectional Forging 13th to 16th Nov, 2015, PSG Tech. Coimbatore
3. ICMR 2016 Effect of deformation temperature on mechanical properties and microstructural evolution in Al 2014 alloy processed through multidirectional Cryoforging 21– 23 Jun 2016, I I Sc Bangalore
4. ICFDFM 2016, High Cycle Fatigue Strength of 5052 Al-Mg Alloy Processed by Cryorolling 28th to 30th Sep, 2016, I I Sc Bangalore
5. ISAMEA-2017 Improvement of fatigue strength in ultrafine grained (UFG) 5052 Al alloy processed by cryo-groove rolling 24th to 25th Mar, 2017, NIE, Mysore
6. ISAMEA-2017, Influence of Phosphorus Addition on Strength and Ductile Behavior of Fe based Alloy Processed through Powder Metallurgy (P/M) Route 24th to 25th Mar, 2017, NIE, Mysore
7. ISAMEA-2017, Improvement of Fracture Toughness of Al 2014 Alloy Processed Through Cryorolling 24th to 25th Mar, 2017, NIE, Mysore
8. ISAMEA-2017, Investigation of Mechanical and Fracture Behavior of Fine-Grained Ze41 Alloy 24th to 25th Mar, 2017, NIE, Mysore
9. ICMAT 2017, Mechanical properties of 5052 Al alloy processed through cryogenic groove rolling 18th to 23rd June, 2017, MRS, Singapore
10. ICMAT 2017, High cycle fatigue behavior of bulk UFG Al 2014 alloy processed through cryorolling 18th to 23rd June, 2017, MRS, Singapore
11. ICMAT 2017, Effect of Secondary Phase Distribution on Mechanical Behavior of Bulk Nanostructured Mg-4Zn-4Gd Alloy. 18th to 23rd June, 2017, MRS, Singapore
12. AMPCO 2017, Structure Property correlations in Multi-directional Cryoforged (MDCFed) Al 2014 Alloy. 30th Nov to 2nd Dec 2017, I I T Roorkee
13. ISAM 2017, Mechanical Behaviour of Ultrafine Grained (Bulk Nano Structured) 5052 Al Alloy Processed through Multi Directional Forging 27th December 2017, SJCE Mysore
14. ISAM 2017, Influence of phosphide microstructure on the tribological properties of iron based alloys through hot powder forging route 27th December 2017, SJCE Mysore
15. ISAM 2017, EBSD analysis of crack tip plasticity 27th December 2017 SJCE Mysore
16. IIM-NMD-ATM 2018, Tensile and Fracture Behavior of 5052 Al Alloy Processed through Cryo-Forging 14th to 16th Nov 2018, IIM, Kolkata

Other achievements:

Patents:

1. **Title:** High speed Punching machine
Application No: 453648-001, 30-03-2025
Status: Granted
2. **Title:** IoT based Digital Power Press machine
Application No: 462319-001, 15-06-2025
Status: Granted

Ph. D Guidance:

1. Scholar Name: Mr. Chandan M

Title of Research and Year: Evaluation of mechanical, physiochemical and tribological properties of areca husk fibers reinforced with polypropylene composites (2022).

Status: Ongoing

2. Scholar Name: Mr. Sunil Kumar B

Title of Research and Year: A study on Lean implementation and analysing the effects on service sectors (2023)

Status: Ongoing

Professional membership:

1 The Indian Society for Technical Education Life Member: LM-ISTE, LM -44547

2 The Institute of Engineers India Life member: LM-1646154

3 The Indian Institute of Metals Life Member: LM-IIM-56533
