

Faculty Member Profile

Personal Information:

Name	: Dr. Gowthaman S
Title(s)/ Position(s)	: Assistant Professor
Department	: MECHANICAL ENGINEERING
Current Designation	: Assistant Professor
Years in Current Designation	:
Gender	: MALE
Ethnicity	: ENGINEERING
Primary Discipline	: MECHANICAL

ACADEMICS

Year	Degree	Institution (Board)	CGPA/%
2021	Ph.D- Mechanical Engineering	National Institute of Technology, Calicut	-
2017	M.Tech- Materials Science	Indian Institute of Technology, Kanpur	7.13
2012	BE- Mechanical Engineering	PSG College of Technology, Coimbatore	7.10
2008	Higher Secondary Certificate Exam (HSC)	Tamilnadu State Board	90.58
2007	Secondary School Certificate Exam (SSC)	Tamilnadu State Board	85.00

WORK EXPERIENCE:

KCG College of Technology, Chennai	(31 Jul 23 – till now)
SRM Institute of Science and Technology, Ramapuram, Chennai	(11 May 22 – 03 Feb 23)
Chennai Institute of Technology, TN	(19 Jul 21 – 9 May 22)
VFSTR university, AP	(27 Jun 17 - 05 Dec 17)
Karpagam Polytechnic College, TN	(4 Jun 12 – 31 Mar 14)

B-TECH THESIS:

Prediction of Dynamic Behaviour of high speed spindle Based on Thermomechanical Model under <i>Dr Prabhu Raja</i> , Department of Mechanical engineering, PSG COLLEGE OF TECHNOLOGY, Coimbatore	(June 11 - May 12)
➤ Optimization of cutting parameters and estimation of cutting stability by using computational methods.	
Energy Monitoring on Machine Tools under <i>Dr K.A.Jagadeesh</i> , Department of Mechanical engineering, PSG COLLEGE OF TECHNOLOGY, Coimbatore	(May 10 - Nov10)
➤ Case study on energy consumed by a CNC lathe to machine the selected industrial component by using power cell to acquire data and analyze it through LabVIEW software.	

M-TECH THESIS

(Jul 15 – Jun 17)

Enhancement of surface properties of stainless steel under *Dr. J Ramkumar*, Department of Mechanical engineering, IIT KANPUR

- Case study on improving surface properties of stainless steel by using laser peening.

Ph.D WORK

(Dec 17 – Sep 21)

Experimental investigation on the effect of tool nomenclature and machining conditions on the machining and material behavior during end milling of Nimonic 263 alloy under *Dr.T.Jagadeesha*, Department of Mechanical Engineering, NIT CALICUT.

- Case study on improving surface properties of Nimonic 263 by Severe Plastic Deformation through End Milling

Publication details:

SCIE Indexed Journals	: 23 No's (22 No's as first author and corresponding author)
Scopus Indexed journals	: 6 (5 No's as first author and corresponding author)
Scopus conference proceedings	: 7 (7 No's as first author and corresponding author)

Softwares:

- Abaqus, LAMMPS (Molecular dynamics package) and ANSYS.

Research Interest:

- Machining, Materials Characterization, Additive Manufacturing, Corrosion and Surface Engineering

List of publications:

List of SCIE publications:

1. **Gowthaman, S. and Jagadeesha, T.**, 2023. Effect of Severe Plastic Deformation During Slot Milling on Nimonic 263 Surface Features. Transactions of the Indian Institute of Metals, pp.1-8.
2. **Gowthaman, S.**, 2023. Impact of Atomic Void Clusters on the Tensile Behavior and its Features of Silicon Carbide Polycrystal through Molecular Dynamics Analysis. Silicon, pp.1-11. <https://doi.org/10.1007/s12633-023-02405-7>. ISSN:1876-9918
3. **Gowthaman, S., Jagadeesha, T.**, 2023, Impact of point defects on the creep behavior of MgY Polycrystal:A molecular dynamics study, Materials Letters, 335, p.133794. <https://doi.org/10.1016/j.matlet.2022.133794>. ISSN: 0167-577X.
4. **Gowthaman, S., Jagadeesha, T. and Dhinakaran, V.**, 2022. Experimental investigation on elastic constants transformation on slot milled Nimonic263 alloy. Sādhanā, 47(3), p.142. <https://link.springer.com/article/10.1007/s12046-022-01922-2>
5. **Gowthaman, S., Jagadeesha, T. and Dhinakaran, V.**, 2022. Analysis on the Impact of Creep Environment and Grain Size during Biaxial Creep Characterization on the Creep features of Ferrosilicon Alloy: A Molecular Dynamics Study, Silicon, 14, pp.11633-11646. <https://link.springer.com/article/10.1007/s12633-022-01887-1>. ISSN:1876-9918
6. **Gowthaman, S., Jagadeesha, T. and Dhinakaran, V.**, 2022. Influence of Creep conditions and Grain Size on the Creep Behavior of Nano-Twinned Silicon Carbide polycrystal: A Molecular Dynamics Study, Silicon, 14, pp.11381-11394. <https://link.springer.com/article/10.1007/s12633-022-01873-7>. ISSN:1876-9918

7. **Gowthaman, S.**, Jagadeesha, T. and Dhinakaran, V., 2022. A Study on the Point Defect Effects on the Monolithic Silicon Carbide Tensile Features: A Molecular Dynamics Study. *Silicon*, 14, pp.8427-8438. <https://doi.org/10.1007/s12633-022-01654-2>. ISSN:1876-9918.
8. **Gowthaman, S.**, Jagadeesha, T. and Dhinakaran, V., 2021. Comparative Study on the Effect of Temperature, Pressure and Grain Size on the Creep Behavior of Monolithic Titanium Aluminide Alloy through Molecular Dynamics Simulation. *Transactions of the Indian Institute of Metals*, 75, pp.149-159. <https://doi.org/10.1007/s12666-021-02410-7>. ISSN: 0972-2815.
9. **Gowthaman, S.**, 2021. Comparative studies of variation in cutting conditions and cutter nomenclature on the surface morphology and the integrity of slot milled nimonic 263 alloy. *Surface Topography: Metrology and Properties*, 9(4), p.045035. <https://doi.org/10.1088/2051-672X/ac38ae>. ISSN:2051-672X.
10. **Gowthaman, S.** and Jagadeesha, T., 2020. Influence of radial rake angle and cutting conditions on friction during end milling of Nimonic 263. *The International Journal of Advanced Manufacturing Technology*, 109(1), pp.247-260. <https://doi.org/10.1007/s00170-020-05682-3>.ISSN: 0268-3768.
11. **Gowthaman, S.** and Jagadeesha, T., 2021. Experimental investigation on friction formation during slot milling of Nimonic263. *Materials and Manufacturing Processes*, 36(12), pp.1403-1413. ISSN:1042-6914.
12. Gowthaman, S., Jagadeesha, T. and Dhinakaran, V., 2021. Influence of machining behavior on severe deformation and corrosion resistance of end milled Nimonic 263 alloy. *Sādhanā*, 46(4), p.192. ISSN: 0256-2499.
13. **Gowthaman, S.**, Tripathi, P., Ariharan, S., Ramkumar, J. and Balani, K., 2022. Water attenuation enhances tribological damage resistance in laser peened steel. *Materials Letters*, 308, p.131175. <https://doi.org/10.1016/j.matlet.2021.131175>. ISSN: 0167-577X.
14. **Gowthaman, S.** and Jagadeesha, T., 2020. Effect of severe plastic deformation through machining on the microstructure and corrosion behavior of end milled nimonic 263 alloy. *Materials Letters*, 275, p.128102. <https://doi.org/10.1016/j.matlet.2020.128102>. ISSN: 0167-577X.
15. **Gowthaman, S.** and Jagadeesha, T., 2021. Experimental study on the surface and interface phenomenon changes by means of contact angle measurement on slot milled nimonic 263 alloy. *Materials Letters*, 285, p.129122. <https://doi.org/10.1016/j.matlet.2020.129122>. ISSN: 0167-577X.
16. **Gowthaman, S.** and Jagadeesha, T., 2020. Effect of Point Defects on the Tensile and Thermal Characteristics of Nickel–Aluminum Nanowire through Molecular Dynamics. *Transactions of the Indian Institute of Metals*, 73(10), pp.2481-2489. <https://doi.org/10.1007/s12666-020-02051-2>. ISSN: 0972-2815.
17. **Gowthaman, S.** and Jagadeesha, T., 2020. Experimental Investigations on the Effect of Severe Plastic Deformation Through End Milling on X-Ray Peak Broadening and Microcrystalline Characteristics of Nimonic 263. *Transactions of the Indian Institute of Metals*, 73(5), pp.1215-1226. <http://dx.doi.org/10.1007/s12666-020-01967-z>. ISSN: 0972-2815.
18. **Gowthaman, S.** and Jagadeesha, T., 2019. Experimental investigation of surface morphological changes during end milling of Nimonic 263. *Surface Topography: Metrology and Properties*, 7(4), p.045018. <http://dx.doi.org/10.1088/2051-672X/ab5036>. ISSN:2051-672X.
19. **Gowthaman, S.** and Jagadeesha, T., 2019. Effect of variation in behavioural changes during end milling on Nimonic 263 elastic constants. *Materials Research Express*, 6(12), p.126504. <http://dx.doi.org/10.1088/2053-1591/ab5345>. ISSN: 2053-1591.
20. **Gowthaman, S.** and Jagadeesha, T., 2019. An experimental investigation on the effect of radial rake angle and machining conditions during end milling on wear resistance and residual stress of nimonic 263 alloy. *Materials*

Research Express, 6(12), p.126568. <https://doi.org/10.1088/2053-1591/ab5825>. ISSN: 2053-1591.

21. **Gowthaman, S.** and Jagadeesha, T., 2020. Comparative studies of variation in end mill radial rake angle and cutting conditions on cutting force and surface integrity during machining of nimonic 263. *Materials Research Express*, 7(3), p.036503. <https://doi.org/10.1088/2053-1591/ab7ab9>. ISSN: 2053-1591.
22. **Gowthaman, S.** and Jagadeesha, T., 2021. Comparative study on the critical effect of radial rake angle and machining parameters on the formation of vibration amplitude during end milling of Nimonic 263. *Sādhanā*, 46(4), p.191. <https://doi.org/10.1007/s12046-021-01723-z>. ISSN: 0256-2499.
23. Balamurugan, K., Uthayakumar, M., **Gowthaman, S.** and Pandurangan, R., 2018. A study on the compressive residual stress due to waterjet cavitation peening. *Engineering Failure Analysis*, 92, pp.268-277. <https://doi.org/10.1016/j.engfailanal.2018.05.012>.ISSN: 1350-6307.

List of Web of science publications

1. **Gowthaman, S., 2023.** A review on mechanical and material characterisation through molecular dynamics using large-scale atomic/molecular massively parallel simulator (LAMMPS). *Functional Composites and Structures*, 5(1), p.012005. <https://iopscience.iop.org/article/10.1088/2631-6331/acc3d5>. ISSN: 2631-6331
2. **Gowthaman, S.** and Jagadeesha, T., 2021. Investigation on the effect of temperature, pressure and grain size on the creep behavior of nickel-chromium binary alloy through molecular dynamics simulation. *Engineering Research Express*, 3(2), p.025045. <https://doi.org/10.1088/2631-8695/ac0dcb>. ISSN:2631-8695.
3. **Gowthaman, S.** and Jagadeesha, T., 2021. Effect of severe plastic deformation during slot milling on wear resistance and surface characteristics of nimonic 263 alloy. *Engineering Research Express*, 3(3), p.035006. <https://doi.org/10.1088/2631-8695/ac0fc1>. ISSN:2631-8695.
4. **Gowthaman, S.** and Jagadeesha, T., 2022. Influence of cutting environment and machining parameters on the cutting force and surface roughness of slot milled Nimonic 263 alloy. *Multiscale and Multidisciplinary Modeling, Experiments and Design*, 5, pp.43-52. <https://doi.org/10.1007/s41939-021-00102-9>. ISSN:2520-8160.
5. **Gowthaman, S.** and Jagadeesha, T., 2021. Study on the effect of temperature and strain rate on Ni₂FeCrCuAl high entropy alloy: a molecular dynamics study. *Engineering Research Express*, 3(4), p.045042. <https://doi.org/10.1088/2631-8695/ac3e10>. ISSN:2631-8695.
6. Kumar, P.M., Balamurugan, K., **Gowthaman, S.**, Ghouse, S.M. and Suryaharshith, K.V., 2018. Fractography analysis and modeling studies on friction stir welded AA6061/SiC composite. *Journal of Advanced Microscopy Research*, 13(1), pp.72-78. <http://dx.doi.org/10.1166/jamr.2018.1360>. ISSN: 2156-7573.

List of SCOPUS conference publications

1. Reddy, P.G., **Gowthaman, S.** and Jagadeesha, T., 2020, August. Optimization of Cutting Parameters Based on Surface Roughness and Cutting Force During End Milling of Nimonic C-263 Alloy. In *IOP Conference Series: Materials Science and Engineering* (Vol. 912, No. 3, p. 032020). IOP Publishing. <https://doi.org/10.1088/1757-899X/912/3/032020>. ISSN: 1757-899X.
2. Shekhar, S., **Gowthaman, S.** and Jagadeesha, T., 2020, August. Effect of MQL, wet and dry lubrication on functional behavior of end milled nimonic-263. In *IOP Conference Series: Materials Science and Engineering* (Vol. 912, No. 3, p. 032019). IOP Publishing. <https://doi.org/10.1088/1757-899X/912/3/032019>. ISSN: 1757-899X.

3. **Gowthaman, S.** and Jagadeesha, T., 2021. Effect of cross section and temperature on the Ni₃Al precipitate on the tensile behavior through molecular dynamics simulation. *Materials Today: Proceedings*. <https://doi.org/10.1016/j.matpr.2021.02.057>. ISSN: 2214-7853.
4. **Gowthaman, S.** and Jagadeesha, T., 2021. Influence of temperature and strain rate on the characteristics of FeNi precipitate through molecular dynamics simulation. *Materials Today: Proceedings*, 46, pp.1261-1264. <https://doi.org/10.1016/j.matpr.2021.02.074>. ISSN: 2214-7853.
5. **Gowthaman, S.** and Jagadeesha, T., 2021. Analysis on the effect of temperature on the Ni₂Al₃ precipitate tensile characteristics through molecular dynamics simulation. *Materials Today: Proceedings*. <https://doi.org/10.1016/j.matpr.2021.02.056>. ISSN: 2214-7853.
6. **Gowthaman, S.** Balamurugan, K. Manoj Kumar, P. Mourya Balaji, K M. Surya Harshith, K V., 2018. Parametric optimization of abrasive water jet machine parameters on mg/sic composite. *International conference on Contemporary Design and Analysis of Manufacturing and Industrial Engineering Systems*. MFG-205, 303-306. ISBN:9789386954008
7. **Gowthaman, S.**, Balamurugan, K., Kumar, P.M., Ali, S.A., Kumar, K.M. and Gopal, N.V.R., 2018. Electrical discharge machining studies on monel-super alloy. *Procedia Manufacturing*, 20, pp.386-391. <https://doi.org/10.1016/j.promfg.2018.02.056>. ISSN: 2351-9789

I hereby declare that the details and information given above are complete and true to the best of my knowledge.

Dr.S.Gowthaman