



# Sumit Choudhary

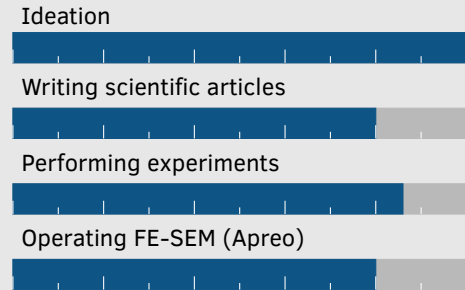
Research Scholar

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## About me

Research scholar with a strong interest in understanding the materials fatigue behavior. Proven expertise in additive manufacturing, friction stir welding/processing, plasma spray coatings, and characterization. Published several journal articles and book chapters in high-impact peer-reviewed journals and presented research at international conferences. Awarded the prestigious PMRF fellowship to conduct my doctoral research from the Indian Ministry of Education.

## Skill



Above average\*4 average\*3

(\*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).]

## interests

Understanding the behavior of the materials when they are subject to fabrication processes for different applications. Specific to Processing-structure-property correlation.

## education

since 2020	Ph.D. candidate in Design Engineering, Dept.of MIED <i>A study on fatigue properties of Al-Mg and additively manufactured Ni-based alloys using particle-reinforced and surface coating</i>	IIT Roorkee
2018-2020	M.Tech. Material Science and Engineering <i>Plasma sprayed Lanthanum zirconate coating over additively manufactured carbon nanotube reinforced Ni-based Composite</i>	IIT Patna
2011-2015	B.Tech. Mechanical Engineering	G.B.P.E.C, Uttarakhand

## publications

2024	S.Choudhary, V.Gaur, <i>Improved properties of additively prepared Inconel 718 alloy post-processed with a new heat treatments</i> , Materials Science and Engineering: A <a href="https://doi.org/10.1016/j.msea.2024.146930">https://doi.org/10.1016/j.msea.2024.146930</a>
2024	S.Choudhary, V.Gaur, <i>On reinforcing the friction stir weld joints of AA5086-H116 using the plasma spray coatings</i> , Materials Science and Engineering: A <a href="https://doi.org/10.1016/j.msea.2024.146578">https://doi.org/10.1016/j.msea.2024.146578</a>
2022	S.Choudhary, V.Gaur, <i>Enhanced fatigue properties of AA5086 friction stir weld joints by Cu-reinforcement</i> , Materials Science and Engineering: A <a href="https://doi.org/10.1016/j.msea.2023.144778">https://doi.org/10.1016/j.msea.2023.144778</a>
2022	S.Choudhary, A.Pandey, V.Gaur, <i>Role of microstructural phases in enhanced mechanical properties of additively manufactured IN718 alloy</i> , Materials Science and Engineering: A <a href="https://doi.org/10.1016/j.msea.2022.144484">https://doi.org/10.1016/j.msea.2022.144484</a>
2022	A.Pandey S.Choudhary, V.Gaur, <i>A numerical study on microstructural features evolved across the melt pool in additively manufactured IN718 alloy</i> , Materials Science and Engineering: A <a href="https://doi.org/10.1016/j.msea.2023.144763">https://doi.org/10.1016/j.msea.2023.144763</a>
2021	S.Choudhary et al., <i>Plasma sprayed Lanthanum zirconate coating over additively manufactured carbon nanotube reinforced Ni-based Composite: Unique performance of thermal barrier coating system without bondcoat</i> , Applied Surface Science <a href="https://doi.org/10.1016/j.apsusc.2021.149397">https://doi.org/10.1016/j.apsusc.2021.149397</a>
2021	S.Choudhary et al., <i>Microstructural and mechanical properties of plasma sprayed boron nitride nanotubes reinforced alumina coating</i> , Ceramics International <a href="https://doi.org/10.1016/j.ceramint.2020.12.045">https://doi.org/10.1016/j.ceramint.2020.12.045</a>
2020	S.Choudhary et al., <i>Insulator-conductor transition in carbon nanotube and graphene nanoplatelets reinforced plasma sprayed alumina single splat: Experimental evidence by conductive atomic force microscopy</i> , Ceramics International <a href="https://doi.org/10.1016/j.ceramint.2020.06.243">https://doi.org/10.1016/j.ceramint.2020.06.243</a>

### Book Chapters:

2024	S. Choudhary, V. Gaur*: <i>Low Cycle Fatigue Behavior of AA5086-H116: Experimental and Numerical Modeling</i> , book: <i>Dynamic Behavior of Soft and Hard Materials, Volume 2</i> . Springer Nature <a href="https://link.springer.com/chapter/10.1007/978-981-99-6255-6_21">https://link.springer.com/chapter/10.1007/978-981-99-6255-6_21</a>
2023	S. Choudhary, V. Gaur*: <i>Study of new generation thermal barrier coatings for high-temperature applications</i> , <i>Coating Materials: Computational Aspects, Applications and Challenges</i> . Springer Nature <a href="https://link.springer.com/chapter/10.1007/978-981-16-7377-1_2">https://link.springer.com/chapter/10.1007/978-981-16-7377-1_2</a>
2021	S. Choudhary, V. Gaur*: <i>Study of mechanical properties and applications of aluminium based composites manufactured using laser based additive techniques</i> , <i>High Performance Composite Structures: Additive Manufacturing and Processing</i> . Springer Nature <a href="https://doi.org/10.1007/978-981-99-3549-9_15">https://doi.org/10.1007/978-981-99-3549-9_15</a>

## awards and achievements

2021	Prime Minister Research Fellowship (PMRF), Ministry of Education, INDIA
2018	M.tech project Funded by Alexander von Humboldt Foundation through CON-NECT follow-up Program, Indo German Science and Technology Centre