

Subhradeep Chatterjee

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Personal Details:

Name: **Subhradeep Chatterjee**

Date of Birth: January 29, 1975

Current Affiliation: Associate Professor, Department of Materials Science and Metallurgical Engineering, Indian Institute of Technology Hyderabad.

Education:

Ph.D. 2007 Department of Materials Engineering, Indian Institute of Science, Bangalore
M.E. 2000 Department of Materials Engineering, Indian Institute of Science, Bangalore
B.E. 1997 Department of Metallurgical Engineering, Regional Engineering College, Durgapur

Employment Details:

July 2023 – present	IIT Hyderabad	Associate Professor
June 2014 – June 2023	IIT Hyderabad	Assistant Professor
Nov 2011 – May 2014	L&T Power, Vadodara, Gujarat	Manager, R&D
Dec 2007 – Dec 2009	RUG Groningen, The Netherlands	Postdoctoral Researcher
April 2007 – Sep 2007	IISc Bangalore	Research Associate
June 1997 – Feb 1998	India Foils Ltd., Calcutta	Management Trainee

Research Interests:

Phase transformations and microstructure development during materials processing (welding, surface alloying, additive manufacturing, heat treatment, thin film patterning), structural characterization (microscopy and diffraction), process-microstructure-property correlation, and computational modeling of thermodynamics and heat/mass transfer. Materials of interest include (but not limited to) superalloys, steels, high entropy alloys, Ti-Ni, Ag-Cu.

Sponsored Research Projects (as PI):

Sl. No.	Funding Agency	Amount Received (Lac INR)	Duration	Project Title
1	SERB	44.04	Nov 2016 – Nov 2019	Design, Manufacturing and Microstructural Analysis of Novel Hard Coatings on Titanium Produced by Weld Deposition Techniques

2	DST	115.75	Sep 2018 – Sep 2025	Process-microstructure-property relationship in welds (WP8) under <i>National Center for Clean Coal Research and Development</i>
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Publications in International Journals:

1. Synthesis and microstructure of laser surface alloyed Al-Sn-Si layer on commercial aluminum substrate. A. Pramanick, **S. Chatterjee**, V. Bhattacharya and K. Chattopadhyay; *Journal of Materials Research*, 20, pp. 1580-1589, 2005. IF: 2.909. doi: 10.1557/JMR.2005.0208.
2. Microstructure development during dissimilar welding: Case of laser welding of Ti with Ni involving intermetallic phase formation. **S. Chatterjee**, T.A. Abinandanan and K. Chattopadhyay; *Journal of Materials Science*, 41, pp. 643-652, 2006. IF: 4.682. doi: 10.1007/s10853-006-6480-4.
3. Phase field simulation of fusion interface events during solidification of dissimilar welds: Effect of composition inhomogeneity. **S. Chatterjee**, T.A. Abinandanan and K. Chattopadhyay; *Metallurgical and Materials Transactions A*, 39, pp. 1638-1646, 2008. IF: 2.726. doi: 10.1007/s11661-007-9340-1.
4. Phase formation in Ti/Ni dissimilar welds. **S. Chatterjee**, T.A. Abinandanan, and K. Chattopadhyay; *Materials Science and Engineering A*, 490, pp. 7-15, 2008. IF: 6.044. doi: 10.1016/j.msea.2007.12.041.
5. Microstructure Formation in Dissimilar Metal Welds: Electron Beam Welding of Ti/Ni. **S. Chatterjee**, T.A. Abinandanan, G. Madhusudhan Reddy, and K. Chattopadhyay; *Metallurgical and Materials Transactions A*, 47, pp. 769-776, 2016. IF: 2.726. doi: 10.1007/s11661-015-3255-z.
6. Ultrafine grained AlCoCrFeNi_{2.1} eutectic high entropy alloy. I.S. Wani, T. Bhattacharjee, S. Sheikh, Y. Lu, **S. Chatterjee**, P.P. Bhattacharjee, S. Guo, and N. Tsuji; *Materials Research Letters*, 4, pp. 174-179, 2016. IF: 8.516. doi: 10.1080/21663831.2016.1160451.
7. Effect of prolonged aging on phase evolution and mechanical properties of intermetallic strengthened CoCrFeNi_{2.1}Nb_x high entropy alloys. U. Sunkari, S.R. Reddy, **S. Chatterjee**, P.P. Bhattacharjee; *Materials Letters*, 248, pp. 119-122, 2019. IF: 3.574. doi: 10.1016/j.matlet.2019.04.012.
8. Tuning nanostructure using thermo-mechanical processing for enhancing mechanical properties of complex intermetallic containing CoCrFeNi_{2.1}Nb_x high entropy alloys. U. Sunkari, S.R. Reddy, B.D.S. Rathod, D. Kumar, R. Saha, **S. Chatterjee**, P.P. Bhattacharjee. *Materials Science and Engineering A*, **769**, p. 138489, 2020. IF: 6.044. doi: 10.1016/j.msea.2019.138489.
9. Effect of niobium alloying on the microstructure, phase stability and mechanical properties of CoCrFeNi_{2.1}Nb_x high entropy alloys: Experimentation and thermodynamic modelling. U. Sunkari, S.R. Reddy, K.S. Athira, **S. Chatterjee**, P.P. Bhattacharjee. *Materials Science and Engineering A*, **793**, p. 139897, 2020. IF: 6.044. doi: 10.1016/j.msea.2020.139897.
10. Heterogeneous precipitation mediated heterogeneous nanostructure enhances strength-ductility synergy in severely cryo-rolled and annealed CoCrFeNi_{2.1}Nb_{0.2} high entropy alloy. U. Sunkari, S.R. Reddy, B.D.S. Rathod, S.S.S. Kumar, R. Saha, **S. Chatterjee**, and P. P. Bhattacharjee. *Scientific Reports*, **10**, p. 1, 2020. IF: 4.996. doi: 10.1038/s41598-020-63038-z.

11. Microstructure and mechanical behaviour of an advanced powder metallurgy nickel base superalloy processed through hot isostatic pressing route for aerospace applications. B. Sreenu, R. Sarkar, S.S.S. Kumar, **S. Chatterjee**, G.A. Rao. *Materials Science and Engineering A*, **797**, p. 140254, 2020. IF: 6.044. doi: 10.1016/j.msea.2020.140254.
12. Enhancing surface hardness of titanium through Ni-Ti intermetallic microstructures formed in situ during weld deposition of nickel. V.C. Peddiraju, A. K. Sunil, S. Suryakumar, **S. Chatterjee**. *Materials and Metallurgical Transactions A*, **52**, p. 591, 2021. IF: 2.726. doi: 10.1007/s11661-020-06084-6.
13. Laser welding of a W-free precipitation strengthened Co-base superalloy. K.S. Athira, P. Pandey, K.V. Prabhakar, K. Chattopadhyay, **S. Chatterjee**. *Journal of Materials Science*, **57**, pp. 7085-7100, 2022. IF: 4.682. doi: 10.1007/s10853-022-07117-8.
14. Competition of Core-Shell and Janus Morphology in Bimetallic Nanoparticles: Insights from a Phase-Field Model. P. Pankaj, S. Bhattacharyya, **S. Chatterjee**. *Acta Materialia*, **233**, 117933, 2022. IF: 9.209. doi: 10.1016/j.actamat.2022.117933.
15. Surface-directed and bulk spinodal decomposition compete to decide the morphology of bimetallic nanoparticles. P. Pankaj, S Bhattacharyya, **S. Chatterjee**. *Modelling and Simulation in Materials Science and Engineering*, **31**, 015003, 2023. IF: 2.4. doi: 10.1088/1361-651X/aca420.
16. Effect of Keyhole Gas Tungsten Arc Welding and Post-welding Heat Treatment on Microstructure and Hardness of Inconel 740H. K. S. Athira, **S. Chatterjee**. *Journal of Materials Engineering and Performance*, **33**, 12452, 2024. IF: 2.3. doi: <https://doi.org/10.1007/s11665-023-08831-3>
17. G. Ummethala, P. Bandaru, S. Chatterjee, S. Dutta-Gupta, S.R.K. Malladi. A study of the spinodal decomposition of AgCu alloy films using in situ transmission electron microscopy. *Materials Characterization*, **216**, 114297, 2024. IF: 5.5. doi: <https://doi.org/10.1016/j.matchar.2024.114297>
18. Athira K.S., S. Chatterjee. High-current gas tungsten arc welding of Ni-base superalloy Haynes 282: correlating heat input with weld profile, microstructure, hardness and indentation size effect. *Materials Science and Technology*, **40**, 1128, 2024. IF: 2.2. doi: <https://doi.org/10.1177/02670836241240245>
19. Vivek C. P., Pravallika B., S. Dutta-Gupta, S. Chatterjee. Substrate interaction mediated control of phase separation in FIB milled AgCu thin films. *APL Materials*, **12**, 011101, 2024. IF: 4.5. doi: <https://doi.org/10.1063/5.0181879>
20. A. Radha, V. C. Peddiraju, R. Korla, S. Chatterjee. B2 Precipitation in Al_{0.2}CoCrFeNi with Enhanced Microstructural Stability and Mechanical Properties. *Metallurgical and Materials Transactions A*, **56**, 3405, 2025. IF: 2.5. doi: <https://doi.org/10.1007/s11661-025-07912-3>

Publications in Peer-reviewed Proceedings Journals:

21. Weld deposition of nickel on titanium for surface hardening with Ti-Ni-based intermetallic compounds. V.C. Peddiraju, K.K. Pulapakura, D.S. Jagadeesh, K.S. Athira, S. Gudur, S. Suryakumar, **S. Chatterjee**. *Materials Today: Proceedings*, **27**, 2096, 2020. doi: 10.1016/j.matpr.2019.09.075.
22. Effect of Build Geometry and Porosity in Additively Manufactured CuCrZr. A. Kulkarni, V.C. Peddiraju, **S. Chatterjee**, D. Srinivasan. *International Manufacturing Science and Engineering*

Conference, American Society of Mechanical Engineers, 86601, V001T02A007, 2022. doi: 10.1115/IAM2022-93986.

23. Effect of Heat Treatment on Structure and Properties of Laser Powder Bed Fusion Inconel 939. E.N. Kumar, K.S. Athira, **S. Chatterjee**, D. Srinivasan. *International Manufacturing Science and Engineering Conference*, American Society of Mechanical Engineers, 86601, V001T02A003, 2022. doi: 10.1115/IAM2022-93945.