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PRINCIPAL RESEARCH OF INTEREST

- Welding
- Finite Element Simulation
- Wire Arc Additive Manufacturing (WAAM)
- Fatigue

Publications:

1. Kannan, A. Rajesh, N. Siva Shanmugam, and G. Sreedhar. "Studies on corrosion behavior of AISI 316L cold metal transfer weldments in physiological solutions." *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering* 234, no. 6 (2020): 644-656.
2. Balasubramanian, K. R., Mr V. Mariappan, L. A. Kumaraswamidhas, R. Anand, S. Suresh, Mr Nanda Naik Korra, N. Siva Shanmugam, and R. T. I. Act. "Assistant Professors." *Department of Mathematics, Indian Institute of Technology Roorkee, Roorkee-247 667*.
3. Rajesh Kannan, A., S. Mohan Kumar, R. Pramod, N. Pravin Kumar, N. Siva Shanmugam, and Yasam Palguna. "Microstructure and mechanical properties of wire arc additive manufactured bi-metallic structure." *Science and Technology of Welding and Joining* (2020): 1-11.
4. Karpagaraj, A., N. Rajesh Kumar, N. Thiyaneshwaran, N. Siva Shanmugam, MuraliMohan Cheepu, and R. Sarala. "Experimental and numerical studies on gas tungsten arc welding of Ti-6Al-4V tailor-welded blank." *Journal of the Brazilian Society of Mechanical Sciences and Engineering* 42, no. 10 (2020): 1-11.
5. Kumar, N. Pravin, and N. Siva Shanmugam. "Some studies on nickel based Inconel 625 hard overlays on AISI 316L plate by gas metal arc welding based hardfacing process." *Wear* 456 (2020): 203394.
6. Karpagaraj, A., N. Rajesh Kumar, K. Sankaranarayananasamy, N. Siva Shanmugam, and Muralimohan Cheepu. "Simulation and Experimental Studies on Arc Efficiency and Mechanical Characterization for GTA-Welded Ti-6Al-4V Sheets." *Arabian Journal for Science and Engineering* (2020): 1-12.
7. Duraisamy, R., S. Mohan Kumar, A. Rajesh Kannan, N. Siva Shanmugam, K. Sankaranarayananasamy, and M. R. Ramesh. "Tribological performance of wire arc additive manufactured 347 austenitic stainless steel under unlubricated conditions at elevated temperatures." *Journal of Manufacturing Processes* 56 (2020): 306-321.
8. Pramod, R., S. Mohan Kumar, B. Girinath, A. Rajesh Kannan, N. Pravin Kumar, and N. Siva Shanmugam. "Fabrication, characterisation, and finite element analysis of cold metal transfer-based wire and arc additive-manufactured aluminium alloy 4043 cylinder." *Welding in the World* (2020): 1-15.

9. Kannan, A. Rajesh, S. Mohan Kumar, N. Pravin Kumar, N. Siva Shanmugam, A. S. Vishnu, and Yasam Palguna. "Process-microstructural features for tailoring fatigue strength of Wire Arc Additive Manufactured Functionally Graded Material of SS904L and Hastelloy C-276." *Materials Letters* (2020): 127968.
10. Pramod, R., N. Siva Shanmugam, and C. K. Krishnadasan. "Studies on cold metal transfer welding of aluminium alloy 6061-T6 using ER 4043." *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications* (2020): 1464420720917175.
11. Kannan, A. Rajesh, N. Siva Shanmugam, V. Rajkumar, and M. Vishnukumar. "Insight into the microstructural features and corrosion properties of wire arc additive manufactured super duplex stainless steel (ER2594)." *Materials Letters* (2020): 127680.
12. Mohan Kumar, S., and N. Siva Shanmugam. "Effect of heat input and weld chemistry on mechanical and microstructural aspects of double side welded austenitic stainless steel 321 grade using tungsten inert gas arc welding process." *Materialwissenschaft und Werkstofftechnik* 51, no. 3 (2020): 349-367.
13. Girinath, B., N. Siva Shanmugam, and C. Sathiyarayanan. "Studies on influence of torch orientation on microstructure, mechanical properties and formability of AA5052 CMT welded blanks." *Archives of Civil and Mechanical Engineering* 20, no. 1 (2020): 1-22.
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15. Pramod, R., S. Mohan Kumar, N. Siva Shanmugam, and S. Arungalai Vendan. "Formability studies on plasma arc welded duplex stainless steel 2205 sheet." *Materialwissenschaft und Werkstofftechnik* 51, no. 2 (2020): 163-173.
16. Kumar, S. Mohan, S. Sankarapandian, and N. Siva Shanmugam. "Investigations on mechanical properties and microstructural examination of activated TIG-welded nuclear grade stainless steel." *Journal of the Brazilian Society of Mechanical Sciences and Engineering* 42, no. 292 (2020): 292.
17. Kannan, A. Rajesh, and N. Siva Shanmugam. "Some Studies on Mechanical Properties of AISI 316L Austenitic Stainless Steel Weldments by Cold Metal Transfer Process." In *Advances in Additive Manufacturing and Joining*, pp. 359-371. Springer, Singapore, 2020.
18. Kannan, A. Rajesh, and N. Siva Shanmugam. "Some Studies on Mechanical Properties of AISI 316L Austenitic Stainless Steel." *Advances in Additive Manufacturing and Joining: Proceedings of AIMTDR 2018* (2019): 359.
19. Veeman, Dhinakaran, T. Sathish, Vijay Petley, and Gokulakrishnan Sriram. "EXPERIMENTAL INVESTIGATION ON PLASMA ARC WELDED Ti64 SHEETS." *Transactions of the Canadian Society for Mechanical Engineering* ja (2019).
20. Mohan Kumar, S., and N. Siva Shanmugam. "Finite element simulation for tensile and impact test of activated TIG welding of AISI 321 austenitic stainless steel." *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications* 233, no. 11 (2019): 2323-2334.
21. Kumar, S. Mohan, N. Siva Shanmugam, and K. Sankaranarayanamy. "Activated TIG Welding of AISI 321 Austenitic Stainless Steel for Predicting." *Advances in Computational Methods in Manufacturing: Select Papers from ICCMM 2019* (2019): 179.
22. Kumar, S. Mohan, N. Siva Shanmugam, and K. Sankaranarayanamy. "Activated TIG Welding of AISI 321 Austenitic Stainless Steel for Predicting Parametric Influences on Weld Strength of Tensile Test—Experimental and Finite Element Method Approach."

- In *Advances in Computational Methods in Manufacturing*, pp. 179-192. Springer, Singapore, 2019.
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 25. Pramod, R., C. K. Krishnadasan, and N. Siva Shanmugam. "Design and finite element analysis of metal-elastomer lined composite over wrapped spherical pressure vessel." *Composite Structures* 224 (2019): 111028.
 26. Parthiban, K., N. Siva Shanmugam, K. Sankaranarayanan, and S. Arungalai Vendan. "Studies on spin arc welding process on the behavior of C1018 plates-an insight into mechanical and metallurgical transformation." *Materials Research Express* 6, no. 10 (2019): 106540.
 27. Kannan, A. Rajesh, N. Siva Shanmugam, and S. Arungalai Vendan. "Effect of cold metal transfer process parameters on microstructural evolution and mechanical properties of AISI 316L tailor welded blanks." *The International Journal of Advanced Manufacturing Technology* 103, no. 9-12 (2019): 4265-4282.
 28. Girinath, B., N. Siva Shanmugam, and K. Sankaranarayanan. "Weld bead graphical prediction of cold metal transfer weldment using ANFIS and MRA model on Matlab platform." *Simulation* 95, no. 8 (2019): 725-736.
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