

## **Dr. V.Dhinakaran**

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### **PRINCIPAL RESEARCH OF INTEREST**

- Additive Manufacturing
- Computational Mechanics (FEM & CFD)
- Heat and Fluid Flow
- Simulation of advanced manufacturing processes (Welding, forming)
- Mathematical modelling
- Composite Materials

### **DOCTORAL DISSERTATION**

“Heat source modelling and some investigations of Plasma Arc Welding of thin Ti-6Al-4V sheets” National Institute of Technology, Tiruchirappalli, June 2017

### **Editorial Board**

- Associate Editor in Journal of Robotics and Control (Publisher : Universitas Muhammadiyah Yogyakarta, Malaysia)
- Editorial Board member in American Research Journal of Biomedical Engineering

### **Publications:**

1. Chalawadi, Damodar, Subramanian Palani Kumaresh Babu, and **Veeman Dhinakaran**. “Experimental Investigation of TIG Welded Additive Manufactured Inco-718 Sheets.” Materials Research 23, no. 2 (2020). **(SCIE)**
2. Arunkumar, Muthusamy, **Veeman Dhinakaran**, Nallathambhi Sivashanmugam, and Vijay Petley. “Effect of Plasma Arc Welding on Residual Stress and Distortion of Thin Titanium Sheet.” Materials Research 22, no. 6 (2019). **(SCIE)**
3. **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). **(SCIE)**
4. **Dhinakaran, V.**, N. Siva Shanmugam, K. Sankaranarayananasamy, and R. Rahul. “Analytical and numerical investigations of weld bead shape in plasma arc

welding of thin Ti-6Al-4V sheets." Simulation 93, no. 12 (2017): 1123-1138. (SCIE)

5. **Dhinakaran, V.**, N. Siva Shanmugam, and K. Sankaranarayanan. "Experimental investigation and numerical simulation of weld bead geometry and temperature distribution during plasma arc welding of thin Ti-6Al-4V sheets." The Journal of Strain Analysis for Engineering Design 52, no. 1 (2017): 30-44. (SCIE)
6. **Dhinakaran, V.**, N. Siva Shanmugam, and K. Sankaranarayanan. "Some studies on temperature field during plasma arc welding of thin titanium alloy sheets using parabolic Gaussian heat source model." Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science 231, no. 4 (2017): 695-711. (SCIE)
7. **Dhinakaran, V.**, and T. Jagadeesha. "Mechanical and Tribological Properties of Al-Mg-SiC Metal Matrix Composite for Pistons of Two-Stroke Engine." In Advances in Industrial Automation and Smart Manufacturing, pp. 673-683(2020). Springer, Singapore.
8. **Dhinakaran, V.**, R. Surendran, KP Manoj Kumar, A. Rahul Kumar, B. K. Nagesha, and M. D. Vijayakumar. "Numerical Analysis on Gas Turbine Blade of a Nickel-Based Alloy with Titanium Alloy." In Advances in Industrial Automation and Smart Manufacturing, pp. 663-671(2020). Springer, Singapore.
9. **Dhinakaran, V.**, M. Varsha Shree, T. Jagadeesha, PM Bupathi Ram, T. Sathish, and B. Stalin. "A review on the recent developments in modeling heat and material transfer characteristics during welding." Materials Today: Proceedings (2019).
10. **Dhinakaran, V.**, J. Ajith, A. Fathima Yasin Fahmidha, T. Jagadeesha, T. Sathish, and B. Stalin. "Wire Arc Additive Manufacturing (WAAM) process of nickel based superalloys-A review." Materials Today: Proceedings (2019).
11. Subhash, N., **V. Dhinakaran**, and T. Jagadeesha. "Finite Element Modelling of Cutting Forces in Turning of Ti-6Al-4V Alloy." In Advances in Industrial Automation and Smart Manufacturing, pp. 439-446(2020). Springer, Singapore.
12. Stalin, B., **V. Dhinakaran**, M. Ravichandran, K. Sathiya Moorthi, and J. Vairamuthu. "Fracture Analysis of C-Stringer and Hat Stringer on the Load Carrying Vehicle." In Advances in Industrial Automation and Smart Manufacturing, pp. 47-55(2020). Springer, Singapore.
13. Arunkumar, M., **V. Dhinakaran**, and N. Siva Shanmugam. "Numerical prediction of temperature distribution and residual stresses on plasma arc welded thin titanium sheets." International Journal of Modelling and Simulation (2019): 1-17.
14. **V. Dhinakaran**, Rakesh Patil, Gokulakrishnan Sriram, N. Siva Shanmugam " Studies on Crack propagation in Plasma Arc Welded Ti-6Al-4V Joint during Erichsen Cupping Test " International Journal of Recent Technology and Engineering 8, no. 1S2(2019): 79-83.
15. Gokulakrishnan Sriram, **V. Dhinakaran**, Jagadeesha T " Finite Element simulation of Temperature Distribution and Residual Stress in Single Bead on Plate Weld Trial using Double Ellipsoidal Heat Source Model" International Journal of Recent Technology and Engineering 8, no. 1S2(2019): 133-138.

- 16.S. Dineshkumar, Shrinidhy Sriram, R Surendran, **V. Dhinakaran** "Experimental Investigation of Tensile Properties of Ti-6Al-4V alloy at Elevated Temperature" International Journal of Recent Technology and Engineering 8, no.1S2 (2019): 103-107.
- 17.Nagesha, B. K., **V. Dhinakaran**, M. Varsha Shree, KP Manoj Kumar, Damodar Chalawadi, and T. Sathish. "Review on characterization and impacts of the lattice structure in additive manufacturing." Materials Today: Proceedings (2019).
- 18.M. Swapna Sai, **V. Dhinakaran**, K. P. Manoj Kumar et al., A systematic review of effect of different welding process on mechanical properties of grade 5 titanium alloy, Materials Today: Proceedings(2019)
- 19.Varsha Shree M, **Dhinakaran V**, Rajkumar V, Bupathi Ram P M, Vijayakumar M D, T Sathish, Effect of 3D printing on supply chain management, Materials Today: Proceedings, <https://doi.org/10.1016/j.matpr.2019.09.060>
- 20.Nagesha, B. K., **V. Dhinakaran**, M. Varsha Shree, KP Manoj Kumar, and T. Jagadeesha. "A review on weldability of additive manufactured titanium alloys." Materials Today: Proceedings (2020).
- 21.Kolekar, Shreedhar, **V. Dhinakaran**, T. Jagadeesha, and Choi Seung Bok. "Design, Fabrication and Testing of Magnetorheological Damper System for Machine Tool Application." In Advances in Industrial Automation and Smart Manufacturing, pp. 13-31(2020). Springer, Singapore.
- 22.Rashid, Muhammad, **V. Dhinakaran**, and T. Jagadeesha. "Topology optimization of rigid flanged couplings using finite element analysis." In AIP Conference Proceedings, vol. 2283, no. 1, p. 020059. AIP Publishing LLC, 2020.
- 23.Agarwal, Rahul, **V. Dhinakaran**, and T. Jagadeesha. "Fatigue analysis of similar and dissimilar spot welds." In AIP Conference Proceedings, vol. 2283, no. 1, p. 020055. AIP Publishing LLC, 2020.
- 24.Suresh, A., **V. Dhinakaran**, K. Kalidasan, S. Surya, and M. Varsha Shree. "Tensile analysis of 3D printed thin cylinder at different percentage of infill's." In AIP Conference Proceedings, vol. 2283, no. 1, p. 020098. AIP Publishing LLC, 2020.
- 25.Gowda, Thammaiah, T. Jagadeesha, and **V. Dhinakaran**. "Optimization of Design Parameters of Aircraft Wing Structure with Large Cut Outs using Damage Tolerant Design and Finite element analysis Approach." International Journal of Recent Technology and Engineering 8, no. 1 (2019): 128-132.
- 26.Choudhary, Mukesh Kumar, **V. Dhinakaran**, and T. Jagadeesha. "Comparison of Duplex Stainless Steel (2205) Spur Gears Cut by Wire Electrodischarge Machining (WEDM) and Hobbing Under Dry Condition." In Advances in Industrial Automation and Smart Manufacturing, pp. 275-283(2020). Springer, Singapore.
- 27.Choudhary, Mukesh Kumar, **V. Dhinakaran**, and T. Jagadeesha. "Wear Behaviour of Duplex Stainless Steel Spur Gear Produced by CNC Wire Electrodischarge Machining Under Wet Lubrication—An Experimental Approach." In Advances in Industrial Automation and Smart Manufacturing, pp. 397-406(2020). Springer, Singapore.
- 28.Ram, PM Bupathi, **V. Dhinakaran**, KP Manoj Kumar, Surendar Kannan, and H. Mohit. "A FEA Model to Predict Mechanical Properties of Laminated Bamboo

- Composites." In *Advances in Industrial Automation and Smart Manufacturing*, pp. 587-595. Springer, Singapore.
29. Stalin, B., **V. Dhinakaran**, M. Ravichandran, K. Sathiya Moorthi, and J. Vairamuthu. "Buckling Analysis of C-Stringer and Hat Stringer on the Load Carrying Vehicle." In *Advances in Industrial Automation and Smart Manufacturing*, pp. 177-183. Springer, Singapore.
30. Narayanan, D., Salunkhe, V.G., **Dhinakaran, V.** and Jagadeesha, T., Experimental Evaluation of Cutting Process Parameters in Cryogenic Machining of Duplex Stainless Steel. In *Advances in Industrial Automation and Smart Manufacturing* (pp. 505-516). Springer, Singapore.
31. Kolekar, Shreedhar, **V. Dhinakaran**, T. Jagadeesha, and Choi Seung Bok. "Design, Fabrication and Testing of Magnetorheological Damper System for Machine Tool Application." In *Advances in Industrial Automation and Smart Manufacturing*, pp. 13-31. Springer, Singapore.
32. Kishore, CH Veera, **V. Dhinakaran**, and T. Jagadeesha. "Study and analysis of stress and pressure variations on Indian railway wheel." In *AIP Conference Proceedings*, vol. 2283, no. 1, p. 020058. AIP Publishing LLC, 2020.
33. Karthikeyan, I., **V. Dhinakaran**, and V. Rajkumar. "Evaluation of mechanical properties of aluminium 6063-Borosilicate reinforced metal matrix composite." In *AIP Conference Proceedings*, vol. 2283, no. 1, p. 020031. AIP Publishing LLC, 2020.
34. Saji, Nihal, **V. Dhinakaran**, and T. Jagadeesha. "Finite element analysis of strength of different non-permanent joints subjected to eccentric loading." In *AIP Conference Proceedings*, vol. 2283, no. 1, p. 020056. AIP Publishing LLC, 2020.
35. **Dhinakaran, V.**, B. Stalin, M. Swapna Sai, J. Vairamuthu, and S. Marichamy. "Recent developments of graphene composites for energy storage devices." *Materials Today: Proceedings* (2020).
36. **Dhinakaran, V.**, K. Vigneswari, M. Lavanya, and M. Varsha Shree. "Point-of-care applications with graphene in human life." (2020).
37. **Dhinakaran, V.**, M. D. Vijayakumar, G. Muthu, and T. Sathish. "Experimental investigation of hybrid fibre reinforced polymer composite material and its microstructure properties." *Materials Today: Proceedings* (2020).
38. **Dhinakaran, V.**, K. V. Surendar, MS Hasunfur Riyaz, and M. Ravichandran. "Review on study of thermosetting and thermoplastic materials in the automated fiber placement process." *Materials Today: Proceedings* (2020).
39. **Dhinakaran, V.**, and T. Jagadeesha. "Tribological characterization of electrolytic hard chrome & WC-CO coatings." *Materials Today: Proceedings* (2020).
40. **Dhinakaran, V.**, KP Manoj Kumar, PM Bupathi Ram, M. Ravichandran, and M. Vinayagamoorthy. "A review on recent advancements in fused deposition modeling." *Materials Today: Proceedings* (2020).
41. Nagesha, B. K., **V. Dhinakaran**, M. Varsha Shree, KP Manoj Kumar, Damodar Chalawadi, and T. Sathish. "Review on characterization and impacts of the lattice structure in additive manufacturing." *Materials Today: Proceedings* 21 (2020): 916-919.