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Design research investigates the complete set of activities involved in the process of bringing new devices, technologies, and services to the marketplace.

### **Research Group Publications**

1. Sunil Bhat, H. Adarsha, Energy Release Rate at Tip Of Mode I Crack Undergoing Weak-Strong-Weak And Strong weak- Strong Transitions In An Elastically Identical Welded Bi-Material: A New Theoretical Model, *GIS Science Journal 1869-9391*, Vol. 7, Issue 12, Page No: 1666-1681, DOI:20.18001.GSJ.2020.V7I11.20.36275, December, 2020.
2. Nagaraj Patil, K. Gopalakrishna and B. Sangmesh, Performance Evaluation of Cryogenic Treated and Untreated Carbide Inserts during Machining of AISI 304 Steel, *International Journal of Automotive and Mechanical Engineering (IJAME)*, Penerbit UMP, VOL. 17, Issue 1, 7709 – 7718, March, 2020.
3. Sunil Bhat, H. Adarsha, V Ravinarayan, V.P. Koushik, Analytical model for estimation of energy release rate at mode I crack tip in bi-material of identical steels joined by an over-matched weld interlayer, *Procedia Structural Integrity, Elsevier*, 17 (2019), Aug 2019.
4. M. Khedkar, Sunil Bhat and H. Adarsha, A review of magneto-rheological fluid damper technology and its applications, *International review of mechanical engineering, Praise Worthy Prize*, 13, 256-264, July 2019.
5. Nagaraj Patil, Gopalakrishna K, Sangmesh, Effect of Cryogenic treatment on Tool Wear, Chip Thickness of Uncoated Carbide Insert during Machining with AISI304 Stainless Steel, *International Journal of Innovative Technology and Exploring Engineering, Blue Eyes Intelligence Engineering & Sciences Publication*, Volume-8, Issue-9, 2561-2566, July 2019.
6. Y.M. Khedkar, Sunil Bhat and H. Adarsha, Review of magnetorheological fluid damper technology and its applications, *International review of mechanical engineering, Praiseworthy prize*, Vol 13, 2019, 256-264, Jul 2019.
7. M.K.Ravindra, K.M.Mahadevan, R.B.Basavaraj, G.P.Darshan, S.C.Sharma, M.S.Rajue, G.R.Vijayakumar, Kiran B.Manjappa, New design of highly sensitive AIE based fluorescent imidazole derivatives: Probing of sweat pores and anti-counterfeiting

- applications, *Materials Science and Engineering: C, Elsevier*, Volume 101, 564-574, March 2019.
8. H Adarsha, Sunil Bhat, Adithya Kumar, N G Subramanya, V L Sagar, Preliminary design of a multi-terrain transporter, *International Journal of Mechanical Engineering and Technology, IAEME*, Volume 10, Issue 03, pp. 290-297, March 2019.
  9. H. Adarsha, Sunil Bhat and S. Rakesh, Design of a bus battery box, *International Journal of Engineering Research and Application, IJERA*, 9, Issue 5 (Series -I), 27-32, May 2019.
  10. Nagraj Patil, Gopalakrishna K, Sangmesh, K Sudhakar, G C Vijaykumar, Performance studies on cryogenic treated carbide cutting tool for turning of AISI304 steel, *Journal of Mechanical Engineering and Sciences, Universiti Malaysia Pahang, Malaysia*, Volume 12, Issue 3, pp. 3927-3941, September 2018.
  11. Ramesh S, S Denis Ashok, Shanmukha Nagaraj, Modelling and Simulation of Electro-Hydraulic Circuit Used in Hydraulic Power Pack of A CNC Machine Tool, *International Journal of Recent Technology and Engineering (IJRTE), Blue Eyes Intelligence Engineering & Sciences*, Vol. 8, Issue-1, pp 2489-2493, May-19
  12. Ramesh S, S Denis Ashok, Shanmukha Nagaraj, Statistical Analysis of the Pressure Profile Variations of Hydraulic Circuit in CNC Machine, *International Journal of Applied Engineering Research, Research India Publication*, Volume 13, Number 21, pp. 15284-15289, March 2019.
  13. Jayaprakash.Vytla, Alok Kumar Rohit, Design Evaluation Of A Heavy Vehicle Chassis For Composite Materials Im7 Fiber And 997epoxy For Optimum Load Condition, *IJEDR International Journal of Engineering, Development and Research*, Vol-7 / Issue-1, 2019.
  14. Yogesh P, Alok Kumar Rohit, Growing Momentum in the Various Field of Robotics- A Review, *International Journal of Innovative Science and Research Technology, IJISRT*, Vol-4 / Issue-8, 2019.
  15. Jayaprakash, Alok Kumar Rohit, Design and Dynamic Analysis of a Heavy Vehicle Front Axle Under Bending Loads, *International Journal of Science and Advance Research in Technology*, Vol-4 / Issue-5, 2018.
  16. Jayaprakash, Alok Kumar Rohit, Non Linear Analysis of Diesel Engine Connecting Rod, *International Journal of Trend in Scientific Research and Development*, Vol-4 / Issue-5, 2018.

17. Ramesh S, S Denis Ashok, Thangadurai. N, et.al., Energy Conservation Approach and control strategy for open loop, Closed Loop Hydraulic Circuit in CNC Machines, *International Review of Mechanical Engineering (IREME), Praise Worthy Prize Publications*, Vol 12, No.11 (2018), Nov 2018.
18. Sunil Bhat, Adarsha H, A Pattanaik, On Distortion Energy Theory In High Cycle Multi-Axial Fatigue, *International Journal of Mechanical Engineering & Technology, IAEME Publication*, Volume 9, Issue 7/2018/1240-1254, Jul 2018.
19. Dantu Anirudh, Ramesh S, Kaushik V Prasad, Adarsha H and Harishanand K S, Productivity Improvement of CNC machines using automatic loading and unloading, *Journal of Production Research & Management, STM journals*, Vol.7 / Issue 2, Sep 2017.
20. Kaushik, Karthik, Adarsha H, Abhijeeth N, V Ravinarayan, Sandeep V, Ranaganath Swamy MK, An analysis on the effects of cut-outs in shafts, *Open Journal of Applied Sciences, Scientific Research Publishing*, Vol.2018/Issue 7, Jul 2018.
21. Niranjan Kumar Naulakha, Dipesh Thapa Sai Kiran Reddy B, Karthik N, An Overview on Latest Trend of Face Milling Operation, *International Journal of Trend in Scientific Research and Development*, Volume 2, Issue 4, 1799-1802, 2018.
22. Ramesh S, Denis Ashok, et.al., Energy Efficient Hydraulic Clamping System using Variable Frequency Drive in a CNC Machine, *IOP Conf. Series: Materials Science and Engineering*, doi:10.1088/1757-899X/376/1/012124, IOP Publishing, Vol. 376, Mar 2018.
23. Ramesh S, S Denis Ashok, Shanmukha Nagaraj., An Energy Conservation Strategy Using Variable Frequency Drive for a Hydraulic Clamping System in a CNC Machine, *Materials Today: Proceedings, Elsevier*, doi: 10.1061/j.matpr.2018.02.346., Vol. 5, Issue 5, Part 2, March 2018.
24. Ramesh S, Usha.C, et.al., Advancements in The Research Of 4D Printing-A Review, *IOP Conf. Series: Materials Science and Engineering*, doi:10.1088/1757-899X/376/1/012123, IOP Publishing, Vol. 376, March 2018.
25. Ramesh.S, S. Denis Ashok, Shanmukha Nagaraj, et. al., Design of an Energy Efficient Hydraulic Regenerative Circuit, *IOP Conf. Series: Materials Science and Engineering*, doi:10.1088/1757-899X/310/1/012042, IOP Publishing, Vol. 310, Jan 2018.
26. Ramesh.S, S. Denis Ashok, Shanmukha Nagaraj, et. al., Energy conservation strategy in Hydraulic Power Packs using Variable Frequency Drive, *IOP Conf. Series: Materials*

*Science and Engineering*, doi:10.1088/1757-899X/310/1/012041, IOP Publishing, 310, Jan 2018.

27. Ravitej.Y P, Ramesh S, Sayeed Sameer et. al., Bending Stresses and Wear Reduction In An Involute Spur Gear, *International Journal of Advanced Research Trends in Engineering and Technology (IJARTET)*, Vol. 5, Special Issue 3, 2018, pp 432-436, Jan 2017.
28. Sunil Bhat and Vijay G Ukadgaonker, Life estimation of notched ductile member in low cycle fatigue from basic principles, *Journal of basic and applied research international, International Knowledge Press*, Vol 24, 2018, 37-49, Apr 2018.
29. Y P Ravitej, Swaroop. V, Ramesh. S, Adarsha .H, Veerachari, Nischith., Finite element analysis of mild steel - rubber sandwich composite material, *IOP Conf. Series: Materials Science and Engineering*, doi:10.1088/1757-899X/376/1/012040, IOP Publishing, Vol. 376, March 2018.
30. S Ravishankar, Y Vijaya Kumar, Optimum Product Design and Development through Creative Engineering Methodology, *Journal of Innovative Research and Solutions (JIRAS)*, <http://www.jirasindia.com/publication-jan-july-2013.asp> Vol.1A, Issue No.2, Jan – Jul 2013.