Members from other University / Institutions

Name	**: Dr.R.VAIRA VIGNESH**
Designation	**: ASSISTANT PROFESSOR**
Department	**: MECHANICAL ENGINEERING**
Organization/Institution	**: AMRITA VISHWA VIDYAPEETHAM UNIVERSITY**
Place & Pincode	**: COIMBATORE - 641112.**

List of last 5 years publications:

2020

1. R. Vaira Vignesh, R. Padmanaban, M. Govindaraju, K. Mohan Das, "Research and development in magnesium alloys for industrial and biomedical applications – A Review", *Metals and Materials International*, vol. 26, 409-430, 2020.

2. M. Paidar, **R. Vaira Vignesh**, A. Moharrami, O. O. Ojo, A. Jafari, S. Sadreddini, "Development and characterization of dissimilar joint between AA2024-T3 and AA6061-T6 by modified friction stir clinching process ", Vacuum, vol. 176, 109298, 2020.

3. M. Paidar, K. Tahani, **R. Vaira Vignesh** , O.O. Ojo , H. Ezatpour and A. Moharrami, "Modified Friction Stir Clinching of 2024-T3 to 6061-T6 aluminium alloy: Effect of Dwell Time and Precipitation-Hardening Heat Treatment", Materials Science and Engineering A, vol. 791, 139734, 2020.

4. K. Rajesh Kannan, M. Govindaraju, **R. Vaira Vignesh**, "Development of fly ash based friction material for wind turbines by liquid phase sintering technology", Journal of Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology (In Press).

5. M. Govindaraju, A. Megalingam, Jayaprakash Murugasan, **R. Vaira Vignesh**, Pavan Kalyan Kota, A. Sumanth Ram, P. Lakshana, V. Naveen Kumar, "Investigations on the Tribological Behaviour of Functionally Gradient Iron based Brake Pad Material ", *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science,* 2020.

6. R. Padmanaban, V. Balusamy, **R. Vaira Vignesh** , "Effect of friction stir welding process parameters on the tensile strength of dissimilar aluminum alloy AA2024-T3 and AA7075-T6 joints", *Materialwissenschaft und Werkstofftechnik* , vol. 51, no. 1, pp. 17-27, 2020.

7. M. Paidar, **R. Vaira Vignesh**, A. Khorram, O. Oladimeji Ojo, A. Rasoulpouraghdam, I. Pustokhina, "Dissimilar modified friction stir clinching of AA2024-AA6061 aluminum alloys: Effects of materials positioning", *Journal of Materials Research & Technology*, 2020.

8. M. Govindaraju, Uday Chakkingal, Prasad Rao Kalvala, **R. Vaira Vignesh**, and K. Balasubramanian, "Investigations on the Creep Behavior of Friction-Stir-Processed Magnesium Alloy AE42", *Journal of Materials Engineering and Performance,* 2020.

9. Jinzhen Han, M. Paidar, **R. Vaira Vignesh**, Kush. P. Mehta, A. Heidarzadeh and O. O. Ojo "Effect of Shoulder Features during Friction Spot Extrusion Welding of 2024-T3 to 6061-T6 Aluminium Alloys", *Archives of Civil and Mechanical Engineering*, vol. 20, 80, 2020.
2020

10. B. Mohan Bharathi, R. Vaira Vignesh, R. Padmanaban, M. Govindaraju, "Effect of Friction Stir Processing and Heat Treatment on the Corrosion Properties of AZ31 alloy", Australian Journal of Mechanical Engineering, (Accepted). **Taylor and Francis**

11. K. Rajesh Kannan, R. Vaira Vignesh, M. Govindaraju, Development and Tribological Characterization of Fly Ash Reinforced Iron based Functionally Gradient Friction Materials, Engineering Review. (Accepted) **University of Rijeka**

12. Mirza Abdul Hadi Baig, R. Vaira Vignesh, R. Padmanaban, M. Govindaraju, "Characterization of AA5052-ZrO2 and AA5052-SiO2 Surface Composites Fabricated by Friction Stir Processing", Songklanakarin Journal of Science and Technology. (Accepted) **Prince of Songkla University**.

13. Anand K. Raghav, **R. Vaira Vignesh**, Kota Pavan Kalyan, M. Govindaraju, "Friction Welding of Cast Iron and Phosphor Bronze", *Journal of The Institution of Engineers (India): Series C*, Published Online.

14. Abin Joe Alex, **R. Vaira Vignesh**, R. Padmanaban, M. Govindaraju, "Effect of heat treatment on the mechanical and wear behavior of friction stir processed AA5052 alloy", *Materials Today: Proceedings*, vol. 22, 4. pp.3340-3346, 2020.

2019

15**.** R. Anil Kumar, K. Pavan Sai, **R. Vaira Vignesh**, N. Radhika, "Investigations on the Tribological Properties of Heat-Treated Copper Composite Using Hybrid Quadratic–Radial Basis Function Model", *Transactions of the Indian Institute of Metals* , vol. 72, no. 12, pp. 3117-3128, 2019.

16. **R.Vaira Vignesh**, R. Padmanaban, M. Govindaraju, G. Suganya Priyadharshini, "Investigations on the Corrosion Behaviour of Magnesium Alloy Surface Composites AZ91D-ZrO2 Fabricated by Friction Stir Processing", Transactions of the IMF (The International Journal of Surface Engineering and Coatings), vol. 97, no. 5, pp. 261-270, 2019

17. **R. Vaira Vignesh**, R. Padmanaban, M. Govindaraju, "Study on the Corrosion and Wear Characteristics of Magnesium Alloy AZ91D in Simulated Body Fluids", *Bulletin of Materials Science*, vol. 43, no. 8, pp. 1-12.

18. **R. Vaira Vignesh**, R. Padmanaban, M. Govindaraju, "Investigations on the Surface topography, Corrosion behavior, and Biocompatibility of Friction Stir Processed Magnesium Alloy AZ91D", *Surface Topography: Metrology and Properties*, vol. 7, no. 2, 025020, 2019. DOI: 10.1088/2051-672X/ab269c **IOP Publishing**

19. **R. Vaira Vignesh**, R. Padmanaban, M. Govindaraju, G. Suganya Priyadharshini, "Mechanical properties and corrosion behaviour of AZ91D-HAP surface composites fabricated by friction stir processing", *Materials Research Express*, vol. 6, no. 8, 085401, 2019,

20.R. Vaira Vignesh, R. Padmanaban, Madhav Datta, "Microstructure, hardness and corrosion behaviour of friction stir processed AA5083", *Anti-Corrosion Methods and Materials*, vol. 66, no. 6, pp. 791-801, 2019.

21. S. Ilangovan, **R. Vaira Vignesh**, R. Padmanaban, J. Gokulachandran, "Effect of composition and aging time on the hardness and wear behavior of Cu-Ni-Sn spinodal alloy", *Journal of Central South University* , vol. 26, pp. 2634-2642, 2019.

22. M. Govindaraju, **R. Vaira Vignesh**, R. Padmanaban, "Effect of heat treatments on the microstructure and mechanical properties of friction stir processed magnesium alloy AZ91D", *Metal Science and Heat Treatment*, vol. 61, pp. 311-317 2019.

23. **R. Vaira Vignesh**, R. Padmanaban, M. Govindaraju, "Synthesis and Characterization of Magnesium Alloy Surface Composite (AZ91D - SiO2) by Friction Stir Processing for Bioimplants ", *Silicon*, 2019.

24.M. N. Abijith, Aditya Rajeev Nair, M. Aadharsh, **R. Vaira Vignesh**, R. Padmanaban, M. Arivarasu, "Investigations on the mechanical, wear and corrosion properties of cold metal transfer welded and friction stir welded aluminium alloy AA2219", Jordan Journal of Mechanical and Industrial Engineering, vol. 12, no. 4, pp. 281-292, 2019. **Hashemite University**

25.A. Yukesh Aravind, **R. Vaira Vignesh**, R. Padmanaban, M. Govindaraju, "Study on the Mechanical and Corrosion behavior of AA5052 Tailor Welded Blanks Fabricated using Friction Stir Welding", *Journal of Materials and Environmental Sciences*, vol. 10, no. 7, pp. 624-636, 2019. **University of Mohammed Premier**

26.K. B. Arjun, R. Harikeshava, C. R. Sreenath, G. Srihari, **R. Vaira Vignesh**, R. Padmanaban, "Effect of load, sliding distance and sliding velocity on the wear properties of aluminum alloy AA5052", *IOP Conference Series: Materials Science and Engineering*, vol. 577, 012016, 2019

27. Pawan Kumar Chellu, R. Padmanaban, **R. Vaira Vignesh**, Abbhelash S Menon, S. M. Shariff, G. Padmanabham, "Experimental Study on Laser Welding of AISI 304 Steel with Design of Experiments Approach", *IOP Conference Series: Materials Science and Engineering*, vol. 577, 012117, 2019.

28. K. Rajesh Kannan, **R. Vaira Vignesh**, Kota Pavan Kalyan, Jayaprakash Murugesan, A. Megalingam, R. Padmanaban, M. Govindaraju, "Tribological Performance of Heavy-Duty Functionally Gradient Friction Material (Cu-Sn-Fe-Cg-SiC-Al2O3) synthesized by PM route", *AIP Conference Proceedings*, vol. 2128, 030006, pp. 1-12, 2019.

29. A. Ashwin, R. B. Hari Lakshman, C. B. Chand Swaroop, M. Vignesh, **R. Vaira Vignesh**, R. Padmanaban, "Predicting the Wear Rate of Aluminum Alloy AA2024-T351 using Hybrid Linear function and Radial Basis Function", *IOP Conference Series: Materials Science and Engineering*, vol. 561, 012046, pp. 1-10, 2019.

30. Pachigolla Kesava Sai Srujan, Hari Krishna Kaka, **R. Vaira Vignesh**, Kota Pavan Kalyan, R. Padmanaban, M. Govindaraju, "Cost-effective manufacturing of piping components with consistent quality through continuous furnace brazing", *AIP Conference Proceedings*, vol. 2128, 020004, pp. 1-12, 2019.

2018

31. R. Vaira Vignesh, R. Padmanaban, "Forecasting the tribological properties of AZ91D magnesium alloy using soft computing model", *Russian Journal of Non-Ferrous Metals*, vol. 59, no. 2, pp. 135-141, 2018.

32.R. Vaira Vignesh, R. Padmanaban, Madhav Datta, "Influence of FSP on the microstructure, microhardness, intergranular corrosion susceptibility and wear resistance of AA5083 alloy", *Tribology - Materials, Surfaces & Interfaces*, vol. 12, no. 3, pp. 157-169, 2018.

33. R. Vaira Vignesh, R. Padmanaban, K. Chinnaraj, "Soft computing model for analysing the effect of friction stir processing parameters on the intergranular corrosion susceptibility of aluminium alloy AA5083", *Koroze A Ochrana Materialu*, vol. 62, no. 3, pp. 97-107, 2018.

34. **R.Vaira Vignesh,** and R. Padmanaban, "Comparison of ANN training algorithms for predicting the tensile strength of friction stir welded aluminium alloy AA1100", *International Journal of Vehicle Structures And Systems*, vol. 10, no. 2, 2018.

35.R. Vaira Vignes, R. Padmanaban, "Modelling of peak temperature during friction stir processing of magnesium alloy AZ91", *IOP Conference Series: Materials Science and Engineering*, vol. 310, p.012019, 2018.

36. V. R. Barath, **R. Vaira Vignesh**, R. Padmanaban, "Analysing the strength of friction stir welded dissimilar aluminium alloys using Sugeno Fuzzy model ", *IOP Conference Series: Materials Science and Engineering*, vol. 310, p.012043, 2018.

37. C. Jayakarthick, A. P. Povendhan, **R. Vaira Vignesh**, R Padmanaban, "Analysing the influence of FSP process parameters on IGC susceptibility of AA5083 using Sugeno – Fuzzy model", *IOP Conference Series: Materials Science and Engineering*, vol. 310, p.012043, 2018.

38. **R. Vaira Vignesh**, R. Padmanaban, "Influence of friction stir processing parameters on the wear resistance of aluminium alloy AA5083", *Materials Today: Proceedings*, vol. 5, no. 2, pp. 7437-7446, 2018.

39. Capt. B. Kiruthimurugan, V. Balusamy, R. Padmanaban, **R. Vaira Vignesh**, "Study of the effect of parameters in friction surfacing of Monel over Mild Steel using linear – radial basis function model" *Materials Today: Proceedings*, vol. 5, no. 2, pp. 8604-8611, 2018.

40. Capt. B. Kiruthi Murugan, V. Balusamy, R. Padmanaban, **R. Vaira Vignesh**, "Friction surfacing mild-steel with Monel and predicting the coating parameters using fuzzy logic ", *Materials Today: Proceedings*, vol. 5, no. 8, pp. 16402-16410, 2018.

41.R. Vaira Vignesh, R. Padmanaban "Intergranular corrosion susceptibility of friction stir processed aluminium alloy 5083", *Materials Today: Proceedings*, vol. 5, no. 8, pp. 16443-16452, 2018.

42. **R. Vaira Vignesh**, R. Padmanaban "Artificial neural network model for predicting the tensile strength of friction stir welded aluminium alloy AA1100", *Materials Today: Proceedings*, vol. 5, no. 8, pp. 16716-16723, 2018.

43. **R. Vaira Vignesh,** R. Padmanaban, A.P.Povendhan and A.P.Balakumharen "Optimizing the tensile strength of friction stir welded dissimilar aluminium alloy joints using particle swarm optimization", *Materials Today: Proceedings*, vol. 5, no. 11, pp. 24820-24826, 2018.

44. T. Abinaya, **R. Vaira Vignesh**, T. Muthu Vijayan "Solar based Grid Tie Integration System for Efficient Power Management", in International Conference on Energy, Communication, Data Analytics, and Soft Computing, no. 4, pp. 446-451, 2018.
2017

45.R. Vaira Vignesh R. Padmanaban, "Modelling Corrosion Behavior of Friction Stir Processed Aluminium Alloy 5083 Using Polynomial: Radial Basis Function," *Transactions of the Indian Institute of Metals*, vol. 70, no. 10, pp. 2575-2589, 2017.

46.R. Harikeshava, M. Shyam Srinivasan, **R. Vaira Vignesh**, R. Padmanaban, "ANN model for predicting the intergranular corrosion susceptibility of friction stir processed aluminium alloy AA5083", in *2nd International Conference on Communication and Electronics Systems*, pp. 716-720, 2017.

2016

47.R. Padmanaban, **R. Vaira Vignesh**, M. Arivarasu, A. A. Sundar, "Process parameters effect on the strength of frition stir spot welded AA6061," *ARPN Journal of Engineering and Applied Sciences,* vol. 11, pp. 6030-6035, 2016.

48.R. Vaira Vignesh, R. Padmanaban, M. Arivarasu, K. Karthick, A. A. Sundar, J. Gokulachandran, "Analysing the strength of friction stir spot welded joints of aluminium alloy by fuzzy logic," *IOP Conference Series: Materials Science and Engineering,* vol. 149, p. 012136, 2016.

49. **R. Vaira Vignesh**, R. Padmanaban, M. Arivarasu, S. Thirumalini, J. Gokulachandran, M. S. S. S. Ram, "Numerical modelling of thermal phenomenon in friction stir welding of aluminum plates," *IOP Conference Series: Materials Science and Engineering,* vol. 149, p. 012208, 2016.

50. **R. Vaira Vignesh**, R. Padmanaban, "Investigations on the Mechanical Properties of MWCNT reinforced ASTM A48 by Testing & Mathematical modelling," in *10th* International Conference on Intelligent Systems and Control, , pp. 761-767, 2016.

51. **R. Vaira Vignesh**, R. Padmanaban, "Modelling tensile strength of friction stir welded aluminium alloy 1100 using fuzzy logic," in *11th International Conference on Intelligent Systems and Control*, pp. 449-456, 2017.

2015

52.C. Krishnaraj **R. Vaira Vignesh**, "Characterization of Hybrid Black Toner using the parameters Waster Toner and Nano Phase Carbon," *ARPN Journal of Engineering and Applied Sciences,* vol. 10, no. 14, pp. 6135-6139, 2015.

53.R. Vaira Vignesh, "Single Variable Algorithm Optimized Hybrid Black Toner Synthesis from Waste Toner and Nano Phase Carbon", Karpagam Journal of Engineering Research, vol. 2, Special Issue on IEEE sponsored International Conference on Intelligent Systems and Control – ISCO'15, pp. 286-294, 2015.

54. **R. Vaira Vignesh**, "Optimization of Hybrid Black Toner Synthesis from Waste Toner", International Journal of Innovative Research in Science, Engineering and Technology, ISSN: 2319-8753, vol. 4, Special Issue – 2, pp. 222 – 227, 2015.