

Peer Reviewed International Journal Last 5 years

Alex, A.J., Vaira Vignesh R, **Padmanaban, R.** and Govindaraju, M., 2020. Effect of Fe particles on the microstructural evolution and mechanical properties of friction welded Al-Cu components. Australian Journal of Mechanical Engineering, pp.1-11.

Muralimanokar, M., Vaira, V.R., **Padmanaban, R.** and Suganya, P.G., 2020. Characterization of AZ31-NbC surface composite fabricated by friction stir processing. Koroze a ochrana materiálu, 64(1), pp.29-37.

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, 2020

Vignesh, R.V., **Padmanaban, R.** and Govindaraju, M., 2020. Study on the corrosion and wear characteristics of magnesium alloy AZ91D in simulated body fluids. Bulletin of Materials Science, 43(1), p.8.

Ilangovan, S., Vignesh, R.V., **Padmanaban, R.** and Gokulachandran, J., 2019. Effect of composition and aging time on hardness and wear behavior of Cu-Ni-Sn spinodal alloy. Journal of Central South University, 26(10), pp.2634-2642. (Published : 14 Nov 2019)
<https://link.springer.com/article/10.1007/s11771-019-4200-x>

R VairaVignesh, **R Padmanaban**, M Govindaraju and G SuganyaPriyadharshini, "Investigations on the corrosion behaviour of magnesium alloy surface composites AZ91D-ZrO₂ fabricated by friction stir processing", Transactions of the IMF, 10.1080/00202967.2019.1648005. (Published 29 April 2019)
<https://www.tandfonline.com/doi/abs/10.1080/00202967.2019.1648005>

M. Govindaraju, R. VairaVignesh and **R. Padmanaban** " Effect of heat treatments on the microstructure and mechanical properties of friction stir processed magnesium alloy AZ91D" Intl. Jnl of Metal Science and Heat treatment, Vol 5 (767), May 2019.
<https://link.springer.com/article/10.1007/s11041-019-00422-1>

R. VairaVignesh, **R. Padmanaban**, M. Govindaraju, and Dr K Mohandas “Research and development in magnesium alloys for industrial and biomedical applications – A Review”, Metals and Materials International, July 2019, <https://doi.org/10.1007/s12540-019-00346-8>
<https://link.springer.com/article/10.1007/s12540-019-00346-8>

A. YukeshAravind, R. VairaVignesh, R. Padmanaban, M. Govindaraju, “Study on the Mechanical and Corrosion behavior of AA5052 Tailor Welded Blanks Fabricated using Friction Stir Welding” J. Mater. Environ. Sci., 2019, Volume 10, Issue 7, Page 624-636

R VairaVignesh, **R Padmanaban**, and M Govindaraju , “ Synthesis and Characterization of Magnesium Alloy Surface Composite (AZ91D - SiO₂) by Friction Stir Processing for Bioimplants” , Silicon, (Published 18-June 2019), <https://doi.org/10.1007/s12633-019-00194-6>
<https://link.springer.com/article/10.1007/s12633-019-00194-6>

Vignesh, R.V., **Padmanaban, R.** and Govindaraju, M., "Investigations on the Surface topography, Corrosion behavior, and Biocompatibility of Friction Stir Processed Magnesium Alloy AZ91D". Surface Topography: Metrology and Properties, (Published 14-June 2019), <https://doi.org/10.1088/2051-672X/ab269c>. <https://iopscience.iop.org/article/10.1088/2051-672X/ab269c>

VR Barath, G Padmanabham, **R Padmanaban**, M Tak. "Adaptive Process Control for Uniform Laser Hardening of Complex Geometries Using Iterative Numerical Simulation", Materials Performance and Characterization, Nov. 2019, Vol. 8, Issue 6. https://www.astm.org/DIGITAL_LIBRARY/JOURNALS/MPC/PAGES/MPC20180095.htm

Chinnaraj K, Sathya Prasad M, Lakshmana Rao C, **Padmanaban R**. "Study of the Influence of coiling-uncoiling induced residual stresses on the fatigue behavior of truck frame rail sections ", Journal of Engineering Science and Technology, June 2019, Vol.14, Issue 3 pages, 1161-1172. http://jestec.taylors.edu.my/Vol%2014%20issue%203%20June%202019/14_3_4.pdf

R Vairavignesh, **R Padmanaban**, M Govindaraju and G SuganyaPriyadarshini, "Mechanical properties and corrosion behaviour of AZ91D-HAP surface composites fabricated by friction stir processing", Materials Research Express, Vol.6, No 8, May 2019. <https://doi.org/10.1088/2053-1591/ab1ded>. (Published 10-May 2019) (<https://iopscience.iop.org/article/10.1088/2053-1591/ab1ded/meta>)

Chinnaraj, K., Sathya Prasad, M., Lakshmana Rao, C., and **Padmanaban. R.**, "Investigation of Residual Stresses in Cold-Formed Steel Sections with Nonlinear Strain-Hardened Material Model," *SAE Int. J. Mater. Manf.* 11(3):229-240, 2018, <https://doi.org/10.4271/05-11-03-0022>. (Published 2018-09-17) <https://www.sae.org/publications/technical-papers/content/05-11-03-0022/>

Abijith, M.N., Nair, A.R., Aadharsh, M., Vignesh, R.V., **Padmanaban, R.** and Arivarasu, M., 2018. Investigations on the Mechanical, Wear and Corrosion Properties of Cold Metal Transfer Welded and Friction Stir Welded Aluminium Alloy AA2219. *Jordan Journal of Mechanical & Industrial Engineering*, 12(4). (Dec 2018) http://jjmie.hu.edu.jo/vol12-4/jjmie_90_18-01.pdf

Vairavignesh R, **Padmanaban R**, Chinnaraj K. " Soft computing model for analysing the effect of friction stir processing parameters on the intergranular corrosion susceptibility of aluminium alloy AA5083" *Koroze a ochranamateriálu* (Journal of association of corrosion engineers), 62(3) 97-107 (2018). (Published 2018-08-06) [https://www.degruyter.com/dg/viewarticle/j\\$002fkom.2018.62.issue-3\\$002fkom-2018-014\\$002fkom-2018-0014.xml](https://www.degruyter.com/dg/viewarticle/j$002fkom.2018.62.issue-3$002fkom-2018-014$002fkom-2018-0014.xml)

R. Vairavignesh, **R. Padmanaban** and Madhav Dutta " Influence of FSP on the microstructure, micro-hardness, intergranular corrosion susceptibility and wear resistance of AA5083" Submitted (1-11-17) to Tribology – Materials, Surfaces and Interfaces. Published Online 11 June 2018, <https://doi.org/10.1080/17515831.2018.1483295> <https://www.tandfonline.com/doi/abs/10.1080/17515831.2018.1483295?journalCode=ytrb20>

1. Mobin Mathew, Ravi N Bathe, G Padmanabham, **R Padmanaban** and S Thirumalini, " A study on the micromachining of Molybdenum using nanosecond and femtosecond LASERS" , The International Journal of Advanced Manufacturing Technology, 2017, published online 23-12-2017, <https://doi.org/10.1007/s00170-017-1454-z>
2. R Vairavignesh and **R Padmanaban** " Forecasting tribological properties of wrought AZ91D magnesium alloy using soft computing model" *Russian Journal of Non Ferrous Metals*, 59(2):135-141, DOI: 10.3103/S1067821218020116.
3. J. Gokulachandran and R Padmanaban, " Prediction of remaining useful life of cutting tools : A Comparative study using soft computing methods " , *International Journal of Process Management and Benchmarking*, 2018, Vol.8, No.2 , pp. 156-181
4. M.Arivarasu, P. Roshith, R. Padmanaban, S .Thirumalini, K V. PhaniPrabhakar and G. Padmanabham , "Investigations on metallurgical and mechanical properties of CO2 laser beam welded Alloy 825" *Canadian Metallurgical Quarterly*, 2017, 56, 232-244. <https://doi.org/10.1080/00084433.2017.1315847>

5. R Vairavignesh and **R Padmanaban**, "Modelling Corrosion Behavior of Friction Stir Processed Aluminium Alloy 5083 Using Polynomial: Radial Basis Function" Transactions of the Indian Institute of Metals, accepted on 15-3-2017. Published online on 11-04-2017. DOI: 10.1007/s12666-017-1110-1.
6. Chinnaraj, K. and **Padmanaban. R**, "Analytical Prediction of Residual Stresses in Cold Formed Steel Sections with Elastic- Perfectly Plastic Material Model," SAE Technical Paper 2017-26-0169, 2017, <https://doi.org/10.4271/2017-26-0169>
7. **R. Padmanaban**, V. Balusamy and K. N. Nouranga "Effect of process parameters on the tensile strength of friction stir welded dissimilar aluminum joints" Journal of Engineering Science and Technology. June 2015, Vol. 10, issue 6 pages 790-801.
8. V. Ratna Kishore, J. Arun, **R. Padmanaban**, and V. Balasubramanian " Parametric studies of dissimilar friction stir welding using Computational fluid dynamics simulation" International Journal of Advanced Manufacturing Technology , September 2015, Volume 80, Issue 1, pp 91–98, IF: (1.78). DOI 10.1007/s00170-015-6995-4

Scopus indexed Publications (Conferences)

1. V. Advait, Vaisikan S, Thirumalini S, R Padmanaban, M Arivarasu and T RamPrabhu, " Comparative studies on pulsed GTAW and AGTAW on dissimilar alloy C-22 and AISI 316L weldments" Materials Today: Proceedings, April 2020, <https://doi.org/10.1016/j.matpr.2020.01.613>
2. K. B. Arjun, R. Harikeshava, C. R. Sreenath, G. Srihari, R. Vairavignesh, **R. Padmanaban**, "Effect of load, sliding distance and sliding velocity on the wear properties of aluminum alloy AA5052", IOP Conf. Series: Materials Science and Engineering 577 (2019) 012016 IOP Publishing doi:10.1088/1757-899X/577/1/012016 <https://iopscience.iop.org/article/10.1088/1757-899X/577/1/012016>
3. Pawan Kumar Chellu, **R. Padmanaban**, R. Vairavignesh, Abhishat S Menon, S. M. Shariff, G. Padmanabham, "Experimental Study on Laser Welding of AISI 304 Steel with Design of Experiments Approach", IOP Conf. Series: Materials Science and Engineering 577 (2019) 012117 IOP Publishing doi:10.1088/1757-899X/577/1/012117 <https://iopscience.iop.org/article/10.1088/1757-899X/577/1/012117>
4. A. Ashwin, R. B. Hari Lakshman, C. B. Chand Swaroop, M. Vignesh, R. Vairavignesh, **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* 561 (2019) 012046, doi:10.1088/1757-899X/561/1/012046 <https://iopscience.iop.org/article/10.1088/1757-899X/561/1/012046>
5. K. Rajesh Kannan, R. Vairavignesh, Kota PavanKalyan, 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* 128, 020004 (2019); <https://doi.org/10.1063/1.5117916> Published Online: 23 July 2019 <https://aip.scitation.org/doi/abs/10.1063/1.5117916>
6. Pachigolla Kesava Sai Srujan, Hari Krishna Kaka, R. Vairavignesh, Kota PavanKalyan, **R. Padmanaban**, M. Govindaraju, "Cost-effective manufacturing of piping components with consistent quality through continuous furnace brazing", *AIP Conference Proceedings* 2128, 030006 (2019); <https://doi.org/10.1063/1.5117949>, Published Online: 23 July 2019 <https://aip.scitation.org/doi/abs/10.1063/1.5117949>
7. B. Kiruthi Murugan, V. Balusamy, R. Padmanaban and R. Vairavignesh, " Friction surfacing mild-steel with Monel and predicting the coating parameters using fuzzy logic", SCICON' 16, 2017, Materials Today: Proceedings, 5 (2018) 16402–16410, published online 11-8-2018. <https://www.sciencedirect.com/science/article/pii/S2214785318310939>

8. R. Vairavignesh, and R. Padmanaban "Intergranular corrosion susceptibility of friction stir processed aluminium alloy 5083", SCICON' 16, 2017, Materials Today: Proceedings, 5 (2018) 16443–16452, published online 11-8-2018.<https://www.sciencedirect.com/science/article/pii/S2214785318310988>
9. R. Vairavignesh and R. Padmanaban " Artificial Neural Network model for predicting the tensile strength of friction stir welded aluminium alloy AA1100" SCICON' 16, 2017, Materials Today: Proceedings, 5 (2018) 16716–16723, published online 11-8-2018.<https://www.sciencedirect.com/science/article/pii/S2214785318311416>
10. R Vairavignesh and R Padmanaban, "Influence of friction stir processing parameters on the wear resistance of aluminium alloy 5083" IMME17, 2017, Materials Today: Proceedings, 5 (2018), 7437-7446. Online 11-4-18
11. Capt. KiruthiMurugan B, V Balusamy, R Padmanaban and R Vairavignesh, " Parameters effect in friction surfacing of mild steel with Monel using linear – radial basis function" IMME17, 2017, Materials Today: Proceedings, 5 (2018), 8604-8611. Online 11-4-18.
12. R Vairavignesh and R Padmanaban " Comparison of ANN training algorithms for predicting the tensile strength of friction stir welded aluminium alloy AA1100", ICMSC – 2017, International Journal of Vehicle Structures & Systems, 2018, Vol. 10, No 2, doi: 10.4273/ijvss.10.2.05.
13. Hari Keshava, Shyam Srinivasan M, R Vairavignesh and RPadmanaban "ANN model for predicting the intergranular corrosion susceptibility of friction stir processed aluminium alloy AA5083", IEEE Explore ,22 March 2018, in 2017 2nd International Conference on Communication and Electronics Systems (ICCES). 2018,DOI: 10.1109/CESYS.2017.8321174,
14. C Jayakarthish, A P Povendhan, R Vairavignesh and R Padmanaban, "Analysing the influence of FSP process parameters on IGC susceptibility of AA5083 using Sugeno – Fuzzy model", IConAMMA-2017, IOP Conference Series: Materials Science and Engineering, 2018, Vol. 310, 012045, doi:10.1088/1757-899X/310/1/012045.
15. V R Barath, R Vairavignesh, R Padmanaban " Analysing the strength of friction stir welded dissimilar aluminium alloys using Sugeno Fuzzy model", IConAMMA-2017, IConAMMA-2017, IOP Conference Series: Materials Science and Engineering, 2018, Vol. 310, 012043, doi:10.1088/1757-899X/310/1/012043
16. R Vairavignesh and RPadmanaban "Modelling of peak temperature during friction stir processing of magnesium alloy AZ91", IConAMMA-2017, IOP Conference Series: Materials Science and Engineering, 2018, Vol. 310, 12019,doi:10.1088/1757-899X/310/1/012019.
17. Nair, A.R., Niranjhan, P., Abijith, M.N., Arivarasu, M., Manikandan, M., Padmanaban, R. and Arivazhagan, N., Potentiodynamic corrosion studies on laser beam welded austenitic stainless steel AISI 321. In IOP Conference Series: Materials Science and Engineering 2017, Vol. 263, No. 6, p. 062031. doi:10.1088/1757-899X/263/6/062031
18. Cap.Kiruthi Murugan, V.Balusamy and R.Padmanaban " Process Parameter effects in the Friction Surfacing of Monel over Mild steel", 11th International Conference on Intelligent Systems and Control (ISCO),2017, pp. 203-207, IEEE. DOI: 10.1109/ISCO.2017.7855981
19. Vignesh, R.V. and R. Padmanaban. "Modelling tensile strength of friction stir welded aluminium alloy 1100 using fuzzy logic", 11th International Conference on Intelligent Systems and Control (ISCO),2017, pp.449-456. IEEE. DOI:10.1109/ISCO.2017.7856034
20. Deepak P, Jualeash M J, Jishnu J, Srinivasan M P, Arivarasu M, Padmanaban R, ThirumaliniS , "Optimization of process parameters of pulsed TIG welded maraging steel C300", IConAMMA-2016, IOP Conf. Series: Materials Science and Engineering ,2016, 149, 012007 doi:10.1088/1757-899X/149/1/012007

21. J Abhilash, D Senthilkumar, G Padmanabham, K V Phani Prabhakar, Padmanaban R and S Thirumalini "The effect of welding direction in CO₂LASER - MIG hybrid welding of mild steel plates", IConAMMA-2016, IOP Conf. Series: Materials Science and Engineering ,2016, 149, 012007, doi:10.1088/1757-899X/149/1/012215
22. R VairaVignesh, R Padmanaban, M Arivarasu, S Thirumalini and J Gokulachandran, " Numerical modelling of thermal phenomenon in friction stir welding of aluminum plates", IConAMMA-2016, IOP Conf. Series: Materials Science and Engineering ,2016, 149, 012007 doi:10.1088/1757-899X/149/1/012208
23. R VairaVignesh, R Padmanaban, M Arivarasu, K P Karthick, A Abiaramasundar and J Gokulchandran ,"Analysing the strength of friction stir spot welded joints of aluminium alloy by fuzzy logic",IConAMMA-2016, IOP Conf. Series: Materials Science and Engineering ,2016, 149, 012007 doi:10.1088/1757-899X/149/1/012136
24. R. Padmanaban, R. VairaVignesh, M. Arivarasu, Karthick K.P and A. AbiramaSundar , "Process Parameters Effect on the Strength of Friction Stir Spot Welded AA6061" ICAETSD-16, ARPN Journal of Engineering and Applied Sciences , May 2016, VOL. 11, NO. 9, pp 6030 -35. SJR – 0.2
25. R.Padmanaban, Vighnesh A , Muthukumaran V and Sunny Basil " A Study on Process Parameters and Tool Geometry Effect on Friction Stir Welding of AA1100 " ICET-2K15,International Journal of Applied Engineering Research, 2015, Vol 10 No.1,1266-1270.

Book Chapters

1. S. Ilangoan, **R. VairaVignesh**, R. Padmanaban, and J. Gokulachandran, "Comparison of Statistical and Soft Computing Models for Predicting Hardness and Wear Rate of Cu-Ni-Sn alloy" *Progress in Computing, Analytics, and Networking*, Advances in Intelligent Systems and Computing, vol. 710, pp. 559-571, 2018. DOI: [10.1007/978-981-10-7871-2_54](https://doi.org/10.1007/978-981-10-7871-2_54) **Springer**
2. **R. VairaVignesh** and R. Padmanaban, "Modelling Corrosion Phenomenon of Magnesium Alloy AZ91 in Simulated Body Fluids", *Advances in Mechanics and Mathematics*, vol. 41, pp. 471-486, 2018. DOI: [10.1007/978-3-030-02487-1_30](https://doi.org/10.1007/978-3-030-02487-1_30) **Springer** (Online Feb 2019) https://link.springer.com/chapter/10.1007/978-3-030-02487-1_30
3. M. Arun Siddharth, R. Padmanaban, **R. VairaVignesh**, "Simulation of Friction Stir Welding of Aluminium Alloy AA5052 – Tailor Welded Blanks", *Intelligent Systems Design and Applications*, Advances in Intelligent Systems and Computing, vol. 940, pp. 1-10, 2020. DOI: [10.1007/978-3-030-16657-1_11](https://doi.org/10.1007/978-3-030-16657-1_11)**Springer**
4. **R. VairaVignesh**, R. Padmanaban, M. Govindaraju, G. SuganyaPriyadharshini, "Corrosion protection of Magnesium Alloys in Simulated Body Fluids using Nanophase Al₂O₃ ", Corrosion Protection at the Nanoscale, *Micro and Nano Technologies*, ISBN: 978-0-12-819359-4 **ElsevierMarch 2020 (Published)**<https://www.elsevier.com/books/corrosion-protection-at-the-nanoscale/rajendran/978-0-12-819359-4>