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PAPERS PUBLISHED IN LAST FIVE YEARS

2020

1. M. Sathishkumar, YashJitendraBhakat, K. Gokulkumar, R. Oyyaravelu, N. Arivazhagan, **M. Manikandan**,. Investigation of Double Pulsed Gas Metal Arc Welding (DP-GMAW) Technique to Preclude Carbide Precipitates in Aerospace Grade Hastelloy X. Journal of Materials Engineering and Performance. ASM International.
2. T.A. VigneshwaraKumaran, S.A. Nithin Joseph Reddy, S. Jerome, N. Anbarasan, N. Arivazhagan, **M. Manikandan**, M. Sathishkumar. Development of Pulsed Cold Metal Transfer and Gas Metal Arc Welding Techniques on High Strength Aerospace Grade AA7475-T761. Journal of Materials Engineering and Performance. ASM International.
3. M, Sathishkumar; **Manikandan, M.** "Development of Pulsed Current Arc Welding to Preclude Carbide Precipitates in Hastelloy X weldment using ERNiCr-3". Journal of Materials Engineering and Performance. 29, 5395–5408(2020) ASM International.
4. M, Sathishkumar; **Manikandan, M.** "Influence of pulsed current arc welding to preclude the topological phases in the aerospace-grade Alloy X." Journal of Materials: Design and Applications. 23(4), 2020, 637-653.
5. M Natesh, **M. Manikandan**. "Hot Fissuring Mitigation in Arc Welding Of Nickelvac 23 Superalloy". Journal of Manufacturing Processes. 56, 2020, 228-237.
6. M Natesh, **M. Manikandan**. "Influence of filler wires to suppress the microsegregation and to improve mechanical properties of conventional arc welded nickel based superalloyIncoloy 20". Transactions of the Indian Institute of Metals. 73(5), 2020, 1333-1362

7. M, Sathishkumar; **Manikandan, M.** Effect of Welding Speed on Aspect Ratio of Hastelloy X Weldment by Keyhole Plasma Arc Welding (K-PAW). Materials Today: Proceedings 22P4 (2020) pp. 3294-3301
8. Effect of Frequency on Microstructural and Corrosion Demeanour of Alloy C- 276 Weldment. Materials Today: Proceedings 22P4 (2020) pp. 3276-3282
9. M Natesh, **M. Manikandan.** Exploration of Mechanical and Metallurgical Characterization of Incoloy 20 Weldment using Gas Tungsten Arc Welding Methods. , Materials Today Proceedings, 27 (2020), 2930 – 2934.
10. M Sathishkumar, P Subramani, M Natesh, M Venkateshkannan, N Arivazhagan, **M Manikandan.**Effect of hot corrosion demeanour on aerospace-grade Hastelloy X made by pulsed and constant current arc welding in molten salts at 820 °C.IOP Conf. Series: Materials Science and Engineering 912 (2020) 032060
11. B Arulmurugan, M Sathish Kumar, D Balaji, S Sathish, S Rajkumar, N Arivazhagan, C D Naiju, and **M Manikandan.** Investigation on the effect of Pulsed Frequency on Microstructure and Hardness of Alloy C-2000 By Current Pulsing. SAE Technical Paper 2020-28-0420, 2020.
12. M Natesh, M Sathishkumar,Naunidhhyot Singh Gulati, Abhinav Srivastava, ^aNimishLooned, S.A. Nithin Joseph Reddy, N Arivazhagan, C D Naiju and **M Manikandan**Effect of Austenitic Filler Wires on Duplex Stainless Steel 2205 Weldment Made by Gas Tungsten Arc Welding. SAE Technical Paper 2020-28-0431, 2020.
13. M Sathishkumar, N Arivazhagan, K Gokulkumar, C G Mohan, C D Naiju and **M Manikandan.**Study on the High Temperature Tensile Properties of Aerospace Grade Hastelloy X Joined by Pulsed Current Arc Welding. SAE Technical Paper 2020-28-0421, 2020.
14. M Sathishkumar, P Subramani, N Arivazhagan, K Gokulkumar,S Jerome, C D Naiju,**M Manikandan.** Hot Corrosion Demeanour of Key-hole Plasma Arc Welded Aerospace Grade Hastelloy X in molten Salts Environment. SAE Technical Paper 2020-28-0422, 2020
15. P Subramani, M Sathishkumar, **M Manikandan,** C D Naiju, N Anbarasan and S Jerome. Studies on Metallurgical and Mechanical Properties of Plasma Arc Welded Aerospace 80A Grade Alloy. SAE Technical Paper 2020-28-0466, 2020.

16. M, Sathishkumar; **Manikandan, M.** Hot corrosion behaviour of continuous and pulsed current gas tungsten arc welded Hastelloy X in different molten salts environment".Materials Research Express. 6(2019) 126553
17. M Sathishkumar, C D Naiju, **M Manikandan.**Investigation of Metallurgical, Mechanical Properties of Hastelloy X by Keyhole Plasma Arc Welding Process. SAE Technical Paper. 2019 -28 – 0152
18. Aashish John, Kiran Jacob Johny, B Arulmurugan, S Rajkumar, N Arivazhagan, C D Naiju, **M Manikandan.** Investigation on Microstructure and Mechanical Properties of Corrosion Resistance Alloy C-200 fabricated by conventional arc welding technique. 2019-28-0177 SAE Technical Paper
19. M Sathishkumar, **M Manikandan.** Preclusion of carbide precipitates in the Hastelloy X weldment using the current pulsing technique. Journal of Manufacturing Processes, 45(2019), 9-21
20. SA, Nithin Joseph Reddy; R, Sathishkumar; K, Gokul Kumar; S, Jerome; Jebaraj, A Vinoth; Arivazhagan, N; **Manikandan, M.** Friction based joining process for high strength aerospace aluminium alloy. Mater. Res. Express 6(8) 2019, 0865a3
21. Sandeep Varin, Mayank Agarwal, Aditya Chugh, **Manikandan M,** Prabhakaran S, Kalainathan S, Pratik Shukla, Jonathan Lawrence, Arivazhagan N. Effect of Laser Shock Peening on Commercial Pure Titanium-1 weldment fabricated by Gas Tungsten Arc welding technique. Transactions of Indian Insitute of Metals. 72(6), 1569-1573.
22. V Sreenivasulu ,**M Manikandan.** Hot Corrosion Studies of HVOF Sprayed carbide and metallic powder coatings on alloy 80A at 900 °C. Materials Research Express 6 (2019) 036519.
23. P Subramani, **M Manikandan.** Development of Gas tungsten arc welding using current pulsing technique to preclude the chromium carbide precipitate in the aerospace-grade alloy 80A. International Journal of Minerals, Metallurgy and Materials. 26(2), 2019, 210-22.
24. P Subramani, NirmalPadgelwar, Sanket Shetty, AnirudhaPandit, V Sreenivasulu, N Arivazhagan, Duoli WU, **M Manikandan.** Hot Corrosion studies on Detonation-gun sprayed NiCrAlY and 80Ni-20Cr coatings on alloy X22CrMoV12-1 at 600 °C. 72(6), 1639-1642. <https://doi.org/10.1007/s12666-019-01567-6>

25. P Subramani, **M Manikandan**. Hot Corrosion Demeanor of Alloy 80A Weldments Fabricated through Tungsten Inert Gas Welding Technique. Transactions of the Indian Institute of Metals. 72(6), 1575-1578.
26. B Arulmurugan, KunjanModi, AmrutkarPranit Sanjay, PatilApurvaYashwant, N Rickwith, C G Mohan, P Subramani, M Agilan, **M Manikandan**, and N Arivazhagan. Effect of post-weld heat treatment on the microstructure and tensile properties of Electron Beam Welded 21st century Nickel based Super alloy 686. Sadhana, 2019, 44:38
27. S.A. Nithin Joseph Reddy, S. Prabhakaran, S. Kalainathan, N. Arivazhagan, **M. Manikandan**. Effect of Laser Shock Peening to Improve Metallurgical and Mechanical Properties of Alloy C-276 Fabricated by Gas Tungsten Welding Techniques. Laser in Engineering. 2019, 42, 245-256.

2018

28. P Subramani, **M Manikandan**. Development of welding technique to suppress the microsegregation in the aerospace-grade alloy 80A by conventional current pulsing technique. Journal of Manufacturing Processes. 2018(34) 579-592.
29. V Sreenivasulu, **M Manikandan**. High-temperature corrosion behaviour of air plasma sprayed Cr_3C_2 -25NiCr and NiCrMoNb powder coating on alloy 80A at 900°C Surface and Coatings Technology. 337 (2018) 250-259
30. B Arulmurugan, **M Manikandan**. Improvement of Metallurgical and Mechanical Properties of Gas Tungsten arc weldments of alloy 686 by Current Pulsing. Transcation of Indian Institute of Metals. 71 (12), 2018, 2953 - 2970
31. VinothJebaraj A, Sampath Kumar T, **Manikandan M**. Investigation of structure property relationship of the dissimilar weld between austenitic stainless steel 316L and duplex stainless steel 2205. Transcation of Indian Institute of Metals. 71(10), 2018, 2593 – 2604.
32. **Manikandan M**, Arul Murugan B, Agilan M, Jerome S, Srikanth A, Arivarasu M, Arivazhagan N. Investigation on Metallurgical and Mechanical Properties of 21st Century Nickel-based Superalloy 686 by Electron Beam Welding Technique. Sadhana (2018) 43:193
33. S A Nithin Joseph Reddy, E Thrinadh, S Prabhakaran, S Kalainathan, N Arivazhagan, **M Manikandan**. Surface modification technique to enhance metallurgical and

mechanical properties of alloy C-276 weldment by laser shock peening without coating. *Sadhana* (2018) 43:117

34. AkshayPrasanna, P Subramani, V Sreenivasulu, N Arivazhagan, Duoli WU, **M Manikandan**. High-temperature corrosion behaviour of HVOF sprayed Cr₃C₂-25NiCr coated on alloy X22CrMoV12-1 at 600 oC. *Journal of Thermal Spray and Engineering*. Volume 1. Issue 1, Page 7-12, DOI: [10.1007/s12582-018-1474-1](https://doi.org/10.1007/s12582-018-1474-1)
35. **Manikandan M**, Danny Raj A, Sathish Kumar M, Arivazhagan N, Gunachandran R Mohan Kumar J.K, Vignesh V, Yoganathan. Investigation on Microstructure, Microsegregation and Mechanical Properties of ATIG welded Alloy C-276. *Materials Today: Proceedings* 5 (2018) 6702–6710
36. A Srikanth, **M Manikandan**. Investigation on Microstructure and Mechanical Properties of Continuous and Pulsed Current Gas Tungsten Arc Welded alloy 600. *IOP Conf. Series: Materials Science and Engineering* 310 (2018) 012073.
37. AngadSurve, SharnappaBhosage, Akshay Mehta, Srikanth A, Arivarasu M, **Manikandan M**, Gokulkumar K, Deva.N.Rajan. Investigation on Microstructure and Mechanical Properties of ATIG welded alloy C-276 with Fe₂O₃ flux. *IOP Conf. Series: Materials Science and Engineering* 310 (2018) 012080 doi:10.1088/1757-899X/310/1/012080
38. B Arulmurugan and **M Manikandan**. Investigations on Microstructure and Corrosion behavior of Superalloy 686 weldments by Electrochemical Corrosion Technique. *IOP Conf. Series: Materials Science and Engineering* 310 (2018) 012071 doi:10.1088/1757-899X/310/1/012071
39. Srikanth A, Subramani P, VenkateshKannan, Mageshkumar K, Puneeth T, **Manikandan M**, Arivazhagan N, Siva Rama Krishna A. Investigation on Microstructure, Microsegregation and Mechanical Properties of Gas Tungsten Arc Weldment of Alloy 600 by ERNiCrMo-10. *Materials Today: Proceedings* 5 (2018) 13244–13250
40. Subramani P, Sanket Shetty, Anirudhapandit R, Hari P R, Gokul Kumar K **Manikandan M**, Arivazhagan N, Siva Shanmugam N. Investigations on the Microstructure, Microsegregation and Hardness Properties of Bead on Plasma Arc Welded C-276 Alloy. *Materials Today: Proceedings* 5 (2018) 13628–13636
41. Arivarasu M, **Manikandan M**, Jualeash M J, Deepak P, Padmanaban R, Arivazhagan N. Investigations on Mechanical and Metallurgical Properties of Pulsed GTA Welded Maraging Steel C300. *Materials Today: Proceedings* 5 (2018) 13612–13619

42. Rebin Sanford B, Venkatesh K M, Arivarasu M, **Manikandan M**, Hari K T, Mithun K G, Surya PR Arivazhagan N. Studies on hot corrosion behaviour of A-TIG welded AISI 316 weldments. *Materials Today: Proceedings* 5 (2018) 13334–13339
43. Venkatesh Kannan. M, Arivarsu. M, **Manikandan M**, Arivazhagan. N. A Review on Friction Stir Welding. *Materials Today: Proceedings* 5 (2018) 13227–13235
44. Muthu S M, Mohana Bharathi C, Vishal Gukhan N, Vignesh Kumar S, Venkatesh Kannan M, Arivarasu M, **Manikandan M**, Arivazhagan N. Hot Corrosion Studies on Dissimilar Weldments C-22 and AISI 316L in Molten Salt $K_2SO_4 + 60\%wt NaCl$ Environment. *Materials Today: Proceedings* 5 (2018) 13340–13346.
45. Dhananjay Parashar Tumu, P Subramani, K Gokul Kumar, **M Manikandan**, C G Mohan, N Arivazhagan, Deva N. Rajan. Investigation on microstructure and tensile properties of dissimilar weld joints between AISI 316L and duplex 2205 stainless steel. *IOP Conf. Series: Materials Science and Engineering* 402 (2018) 012075 doi:10.1088/1757-899X/402/1/012075
46. Chaitanya Gandhi, Nikhil Dixit, Omkar Aranke, M Arivarasu, N Siva Shanmugam, **M Manikandan**, N Arivazhagan. Characterization of AA 7075 weldment using CMT Process. *Materials Today: Proceedings* 5 (2018) 24024–24032.

2017

47. Srikanth A, **Manikandan M**. Development of Welding Technique to avoid the Sensitization in the Alloy 600 by Conventional Gas Tungsten Arc Welding Method. *Journal of Manufacturing Processes*. 2017 (30) 452-466
48. **Mankandan M**, Arul Murugan B. Development of Welding Technology for Improving the Metallurgical and Mechanical Properties of 21st Century Nickel based superalloy 686. *Materials Science & Engineering A*. 2017 (691) 126-140. 10.1016/j.msea.2017.03.042
49. **Manikandan M**, Gunachandran R, Vigneshwaran M, Sudhakar S, Srikanth A, Arivarasu M, Venkateshkannan M, Arivazhagan N, Deva N. Rajan. Comparative studies on Metallurgical and Mechanical properties of bimetallic combination on Incoloy 800 and AISI 316L fabricated by Gas Metal and Shield Metal Arc Welding. *Transactions of the Indian Institute of Metals*. 2017 70(3) 749-757 10.1007/s12666-017-1087-9.
50. **M. Manikandan**, N. Arivazhagan, M. Arivarasu, K. Mageshkumar, Deva N. Rajan, B. Arul Murugan, P. Prasanth, S. Sukumar, R. Vimalanathan. Analysis of

Metallurgical and Mechanical Properties of Continuous and Pulsed Current Gas Tungsten Arc Welded Alloy C-276 with Duplex Stainless Steel. Trans Indian Inst Met (2017) 70(3):661–669.

51. **Manikandan M**, Arivarasu M, VinothJebaraj A, Arivazhagan N. The Effect of Post-Weld Heat Treatment on Microstructure and Tensile Properties of Alloy C-276 Welded Joints Fabricated by Pulsed Current Gas Tungsten Arc Welding. *Ciência&Tecnologia dos Materiais* 29 (2017) 39–45.
52. Adithya R Nair, P Niranjhan, M N Abijith, M Arivarasu, **M Manikandan**, R Padmanaban and N Arivazhagan. Potentiodynamic corrosion studies on laser beam welded austenitic stainless steel AISI 321. IOP Conf. Series: Materials Science and Engineering 263 (2017) 062031 doi:10.1088/1757-899X/263/6/062031

2016

53. **Manikandan M**, Arivarasu, M, N Arivazhagan, T Puneeth1, N Sivakumar B Arul Murugan, M Sathishkumar, S Sivalingam. High Temperature Corrosion studies on Pulsed Current Gas Tungsten Arc Welded Alloy C-276 in Molten Salt Environment. IOP Conf. Series: Materials Science and Engineering **149** (2016) 012020 doi:10.1088/1757-899X/149/1/012020

2015

54. **ManikandanM**, Arivazhagan N, Nageswara Rao M, Reddy G.M, “Improvement of Microstructure and Mechanical Behavior of Gas Tungsten Arc Weldments of Alloy C-276 by Current Pulsing”, *ActaMetallurgicaSinica (English Letter)*, 2015, 28(2), 208-215, DOI 10.1007/s40195-014-0186-4
55. **Manikandan M**, Sasikumar P, Arul Murugan B, Sathishkumar M, Arivazhagan N, Microsegregation studies on PCTIG welding of Alloy C-276. *International Journal of Scientific & Engineering Research*, Volume 6, Issue 12, December-2015