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## LIST OF PUBLICATIONS

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1. **SANJAY KUMAR**, S.P. Tewari, and Singh, J.K., 2019. “Effect of Current on the microstructural and mechanical properties of MIG welded AA6061 aluminum alloy”. (IJRTE), ISSN: 2277-3878, Volume-8 Issue-5, January 2020.
2. **SANJAY KUMAR**, S.P. Tewari, and Singh, J.K., 2019. “Microstructural evolution and mechanical properties of MIG welded AA6061 aluminum alloy”. IJMPERD, ISSN(P): 2249–6890; ISSN(E): 2249–8001 Vol. 10, Issue 1, Feb 2020, 709–718
3. **Kumar, S.**, Tewari, S.P. and Singh, J.K., 2020. “Microstructure and Mechanical Properties of MIG Welded Butt Joint of 6063 Aluminum Alloy”. IJRTE, (Revision Submitted).

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**References**

Ahmad, R& Bakar, MA 2011, 'Effect of a post-weld heat treatment on the mechanical and microstructure properties of AA6061 joints welded by the gas metal arc welding cold metal transfer method', *Materials and Design*, vol. 32, no. 10, pp. 5120-5126.

Akio Hirose, Hirotaka Todaka, Hiroto Yamaoka, Nobutaka Kurosawa& Kojiro F Kobayashi 1999, 'Quantitative evaluation of softened regions in weld heat affected zones of 6061 T6 aluminum alloy characterizing of the laser beam welding process', *Metallurgical And Materials Transactions A*, vol. 30, pp. 2115-2120.

Allum, C J & Quintino, L 1985, 'Control of fusion characteristics in pulsed current MIG welding', *Met. Construct.*,pp. 242-245.

Ambriz, RR& Jaramillo, D 2014, 'Mechanical behavior of precipitation hardened aluminum alloys welds [C]//Light Metal Alloys Applications', *InTech*, 2014: DOI: 10.5772/58418.

American Welding Society (2004). *Welding handbook, welding processes Part 1*. Miami Florida: American Welding Society. ISBN 0-87171-729-8

Arun M "effect of welding process on mechanical and metallurgical properties of aa6061 aluminium alloy lap joint" *International Journal of Mechanical Engineering and Research*, ISSN 0973-4562 Vol. 5 No.1 (2015).

B.V.R.Ravikumar<sup>1</sup>, K.Swathi, B.L.N.KrishnaSai "Mechanical and Micro Structural Characterization of Al 5083 and Al 6082 Butt Joints Made By GTAW" *International Journal of Innovative Research in Science, Engineering and Technology* Vol. 3, Issue 12, December 2014 ISSN: 2319-8753.

Baach, H, Nadkarni, SV & Vishvanasth, PS 1981, 'Submerged arc welding: Combined increased deposition rates with improved mechanical properties', Proceedings of the National Conference, Trichi, India.

Balasubramanian, V, Ravisankar, V& Reddy, GM 2007, 'Effect of pulsed current and post weld aging treatment on tensile properties of argon arc welded high strength aluminium alloy [J]', Materials Science and Engineering A, vol. 459, no. 1–2, pp. 19–34.

Becker, DW 1979, 'The role of pulsed GTA welding variables in solidification and grain refinement', Welding Journal, vol. 58, no. 5, pp. 143–152.

Bilgin, M.B. and C. Meran, "The effect of tool rotational and traverse speed on friction stir weldability of AISI 430 ferritic stainless steels." Materials & Design, 2011. 33(0): pp. 376-383.

C. L. Lin (2004) Use of the Taguchi Method and Grey Relational Analysis to Optimize Turning Operations with Multiple Performance Characteristics, Materials and Manufacturing Processes, 19:2, 209-220, DOI: 10.1081/AMP-120029852

C.W. Tan, Z.G. Jiang, L.Q. Li, Y.B. Chen, X.Y. Chen, Microstructural evolution and mechanical properties of dissimilar Al–Cu joints produced by friction stir welding, Materials and Design 51 (2013) 466–473.

Caddle, RN 1967, 'The Influence of Physical properties on penetration in arc welding', Trans of ASME, Journal of Engineering for industry, vol. 37, no. 5, pp. 328-332.

Campbell, SW, Galloway, AM & McPherson, NA 2011, 'Techno- economic evaluation on the effects of alternating shielding gases for advanced joining processes. Proc

IMechE, Part B: J Engineering Manufacture, vol.225, pp. 1863–1872.

Campbell, SW, Galloway, AM, McPherson, NA& Gillies, A 2012, ‘Evaluation of gas metal arc welding with alternating shielding gases for use on AA6082T6’, Proc IMechE, J Eng Manuf., vol.226, no.6, pp. 992 -1000.

Cary, H 1988, ‘Welding Technology’, Prentice Hall, 2nd ed. USA.

Chakravarti, AP, Thibau, R &Bala, SR 1985, ‘Cooling characteristics of bead-on-plate welds’, Met. Constr. (March), pp. 178R–183R.

ChandanKaushal, Lochan Sharma, “To Determine Effects of Gas Metal Arc Welding (GMAW) Parameters on Mechanical Properties of Aluminium Alloys” International Journal of Innovative Research in Science, Engineering and Technology, Vol. 4, Issue 6, June 2015.

ChandanKaushal, Lochan Sharma,“ To find effects of GMAW parameters on Mechanical Properties of Aluminum Alloys”ChandanKaushal Int. Journal of Engineering Research and Applications www.ijera.com ISSN : 2248-9622, Vol. 4, Issue 11(Version - 6), November 2014, pp.88-92.

Choi, J & Mazumder, J 2002, ‘Numerical and experimental analysis for solidification and residual stress in the GMAW process for AISI 304 stainless steel’, Journal of Materials Science, vol. 37, pp. 2143-2158.

Connor, LP 1987, ‘Welding Handbook’, American Welding Society, 8th ed. vol.1, USA.

Cornu J 1988, ‘Advanced welding system’, Part – 2, IFS publication ltd, UK, 1988, pp.

97–123 and 243.

D. M. Arya, V. Chaturvedi, J. Vimal, “Application of Signal to Noise Ratio Methodology for Optimization of MIG Welding Process Parameters,” *International Journal of Engineering Research and Applications*, 2013, Vol. 3, Issue 4, pp.1904-1910.

D.Sindhu, M.Ruban, “The Study on Effect of Process Parameters on Weld Deposits in Pulsed Gas Metal Arc Welding”, Vol. 5, Issue 4, April 2016.

Demir, H.; Gunduiz, S. The effects of aging on the machinability of 6061 aluminum alloy. *J. Mater. Des.* 2009, 30, 1480–1483.

Devletian, JH & Wood, WE 1983, ‘Factors affecting porosity in aluminum welds. A review’, WRC Bulletin No. 290, Welding Research Council, New York, N.Y.

Ding, JK, Wang, DP, Wang, Y& Du, H 2014, ‘Effect of post weld heat treatment on properties of variable polarity TIG welded AA2219 aluminium alloy joints’, *Transactions of Nonferrous Metals Society of China*, vol. 24, pp. 1307–1316.

Dongjie Li, Shanping Lu, Wenchao Dong, Dianzhong Li & Yiyi Li 2012, ‘Study of the law between the weld pool shape variations with the welding parameters under two TIG processes’, *Journal of Materials Processing Technology*, vol. 212, pp. 128-136.

Dongxia Yang, Xiaoyan, Nie Zuoren, Li, Dingyong, He, Hui, Huang. Guanzhen& Zhang 2012, ‘Microstructure characteristics of TIG welded Al-Mg alloy with small amount Er addition’, *Rare Metal Materials and Engineering*, vol. 41, no. 10, pp. 1713-1716.

Elangovan, K.; Balasubramanian, V. Influence of post weld heat treatment on tensile

properties of friction stir welded AA6061 aluminum alloy joints. *Mater. Charact.* 2008, 59, 1168–1177.

Elsadig, O. Eltai and E. Mahdi, “The Corrosion and Mechanical Properties of AA 6061 T6 Joined by MIG Welding Method,” *Proceedings of Global Engineering, Science and Technology Conference 3-4 October 2013, Bay View Hotel, Singapore*, ISBN: 978-1-922069-32-0.

ESAB and AGA (1999) *Facts about MIG/MAG welding*. ESAB Welding Equipment AB.

Fortain, JM & Gadrey, S, 2013, ‘How to select a suitable shielding gas to improve the performance of MIG and TIG welding of Aluminium alloys’, *Welding International*, vol. 2, no.12, pp. 145-157.

Fujii, H., L. Cui, N. Tsuji, M. Maeda, K. Nakata, and K. Nogi, "Friction stir welding of carbon steels." *Materials Science and Engineering A*, 2006. 429(1-2): pp. 50-57

G hargopal, PVR ravindrareddy, G Chandra mohanreddy, J V subrahmanyam “Parameter design for MIG welding of AL 65032 alloy using taguchi technique”. *Journal of scientific and industrial research*, Volume: 70, October 2011, pp. 844-850.

Gallais, C.; Simar, A.; Fabreque, D.; Denquin, A.; Lapasset, G.; de Meester, B.; Brechet, Y.; Pardoën, T. Multiscale Analysis of the Strength and Ductility of AA 6056 Aluminum Friction Stir Welds. *Metall. Mater. Trans.* 2007, 38, 964–981.

Gan, W., Z.T. Li, and S. Khurana, "Tool materials selection for friction stir welding of L80 steel." *Science and Technology of Welding and Joining*, 2007. 12(7): pp. 610-613.

Garrett, RP, Lin, J& Dean, TA 2005, 'An investigation of the effects of solution heat treatment on mechanical properties for AA 6xxx alloys: Experimentation and modelling [J]', *International Journal of Plasticity*, vol. 21, no. 8, pp. 1640-1657.

Giuseppe Casalino, Sabina Campanelli, Michelangelo Mortello, Influence of Shoulder Geometry and Coating of the Tool on the Friction Stir Welding of Aluminium Alloy Plates *Procedia Engineering*, 69 ( 2014 ) 1541 – 1548

Goyal, VK, Ghosh, PK & Saini JS 2009, 'Analytical studies on thermal behavior and geometry of weld pool in pulsed current gas metal arc welding', *Journal of Materials Processing Technology*, vol. 209, no. 3, pp. 1318 – 1336.

Groover, M.P. *Fundamentals of Modern Manufacturing, Materials, Processes and Systems*, 3rd ed.; John Wiley and Sons: Hoboken, NJ, USA, 2007.

Gunaraj, V &Murugan, N 1999, 'Application of response surface methodology for predicting weld bead quality in submerged arc welding of pipes', *Journal of Materials Processing Technology*, vol. 88, pp. 266-275.

Gunaraj, V &Murugan, N 2002, 'Prediction of heat-affected zone characteristics in SAW of structural steel pipes', *Welding Journal*, vol. 81, no. 11, pp. 45s- 53s.

Gunnert, HV 2001, 'Penetrations and Travel Speed in Metal Arc Welding', *Weld Journal*, vol. 27, p. 542.

Gurave HS &Stout RD 1963, 'Solidification phenomenon in inert GMAW', *Welding Journal*, vol. 42, no. 7, pp. 298s – 310s.

H. Guo, J. Hu, H.L.Tsai, "Formation of weld crater in GMAW of aluminum alloys,"

International Journal of Heat and Mass Transfer 52 (2009) 5533–5546.

Hatch, J.E. Aluminum: Properties and Physical Metallurgy, 10th ed.; American Society for Metals: Metals Park, OH, USA, 1983.

He, WX, Tai, NJ, Kang, GS, Jun, WL & Feng, CD 2009, ‘Investigation on TIG welding of SiCp-reinforced Aluminium–matrix composite using mixed shielding gas and Al–Si filler’, Materials Science and Engineering: A, vol. 499, no.1-2, pp. 106-110.

Heidarzadeh, T. Saeid, Prediction of mechanical properties in friction stir welds of pure copper, Materials and Design 52 (2013) 1077–1087

HemantChauhan, N.D.Chauhan, ParthivTrivedi, “ Review on an Effect of Process Parameters on Mechanical and Metallurgical Properties of Aluminium Weld Joints using Gas Metal Arc Welding (GMAW) Process”, IJSRD - International Journal for Scientific Research & Development| Vol. 2, Issue 10, 2014 | ISSN (online): 2321-0613.

Hilton, DE & Norrish, J 1988, ‘Shielding gases for arc welding’, Welding and Metal Fabrication, vol. 5, no. 6, pp. 189–196.

Hilty, E.; Menzemer, C.; Manigandan, K.; Srivatsan, T. Influence of welding and heat treatment on microstructure, properties and fracture behavior of a wrought aluminum alloy. Emerg. Mater. Res. 2014, 3, 230–242.

Hilty, E.; Menzemer, C.; Srivatsan, T. Influence of Welding and Heat Treatment on Microstructural Development and Properties of Aluminum Alloy 6005. In Proceedings of the 22nd PFAM Conference, Singapore, 18–20 December 2013.

Himmelbauer, K (2005) The CMT-process ± A revolution in welding technology.



Fronius International GmbH.

Houldcraft PT 1997, 'Welding process and control parameters', Cambridge university press, London.

Houldcroft, P and John, R (1988) Welding and cutting, Cambridge, Woodhead-Faulkner.

Howden, DG 1971, 'An up-to-date look at porosity formation in aluminum weldments', Welding Journal, vol. 50, no. 2, pp. 112–114.

Hu, B & Richardson, IM 2007, 'Microstructure and mechanical properties of AA7075(T6) hybrid laser/GMA welds', Mater Sci Eng A, vol. 459, pp. 94–100.

Huisman, G (1999) Introduction of a new MIG process, advantages and possibilities.

Ibrahim Sevim, Fatih Hayat, Yakup Kaya, Nizamettin Kahraman & Sadettin Aahin 2013, 'The study of MIG weldability of heat-treated aluminum alloys', Int J Adv Manuf Technol, vol. 66, no. 9–12, pp. 1825–1834.

IIW Doc. 212-952-99. UniversitaÈt der Bundeswehr Hamburg, Laboratorium fuÈr Werkstoffkunde und SchweiÙtechnik, Hamburg, Germany.

Izzatul Aini Ibrahim, SyarulAsrafMohamat, Amalina Amir, AbdulGhalib "The effect of Gas Metal Arc Welding (GMAW) processes on different welding parameters".Elsevier, International Symposium on Robotics and Intelligent Sensors,2012, pp. 1502 – 1506

Jackson, CE &Shrubsall, AE 1953, 'Control of Penetration and melting ratio with welding technique', Weld Journal, vol. 32, no. 4, pp. 172s-178s.

Jannet, S, Mathews, PK& Raja, R 2013, 'Comparative investigation of friction stir

welding and fusion welding of 6061-T6 and 5083-O aluminum alloy based on mechanical properties and microstructure’, *Journal of Achievements in Materials and Manufacturing Engineering*, vol. 61, no. 2, pp. 181-186.

Javier A Vargas, Jaime E Torres, Jovanny A Pacheco & Roque J Hernandez 2013, ‘Analysis of heat input effect on the mechanical properties of Al-6061-T6 alloy weld joints’, *Materials and Design*, vol. 52, pp. 556–564.

Jeffus, LF 2002, ‘Welding: principles and applications’, 5th ed. USA: Cengage Learning.

Jing Zhang, Boquan Chen, Baoxiang Zhang, Effect of initial microstructure on the hot compression deformation behaviour of a 2219 aluminum alloy, *Materials and Design* 34 (2012) 15–21.

Jonsson, PG, Eagar, TW & Szekely, J 1995, ‘Heat and metal transfer in gas metal arc welding using argon and helium’, *Metall. Mater. Trans. B, Process Metall. Mater. Process. Sci.*, vol. 26, pp. 383–395.

Juan, W, Yajiang, L & Peng, L 2003, ‘Effect of weld heat input on toughness and structure of HAZ of a new super high strength steel’, *Bull. Mater. Sci.*, vol. 26, no. 3, pp. 301–305.

K. Pal, S. Bhattacharya & S. K. Pal, “Optimization of weld deposition efficiency in pulsed MIG welding using hybrid neuro-based techniques,” 2011, *International Journal of Computer Integrated Manufacturing*, vol. 24:3, pp. 198-210.

K. Srinivasan, V. Balasubramanian, “Effect of Heat Input on Fume Generation and Joint Properties of Gas Metal Arc Welded Austenitic Stainless Steel,” *Journal of Iron*

and Steel Research, International, 2011, vol. 18(10), pp. 72-79.

Kamlesh Kumar, Prakash Mohan, Manoj Masanta influence of welding current on mechanical property of 3 mm thick 1050 aluminium butt welded joint by using AC TIG welding method, Materials Today: proceedings 5(2018) 24141-24146

Kang, BY, Prasad, YKDV, Kang, MJ, Kim, HJ & Kim, IS 2009, 'Characteristics of alternate supply of shielding gases in aluminium GMA welding', J. Mater. Process. Technol., vol.209, pp. 4716–4721.

Kannan, T & Murugan, N 2006, 'Prediction of ferrite number of duplex stainless steel-clad metals using RSM', Welding Journal, pp. 91-100, 2006.

Karunakaran, N & Balasubramanian, V 2011, 'Effect of pulsed current on temperature distribution, weld bead profiles and characteristics of gas tungsten arc welded aluminum alloy joints', Transaction of Non-ferrous Metals Society of China, vol. 21, pp. 278 – 286.

Kihara, H & Masubuchi, K 1954, 'Studies on the shrinkage and residual welding stress of constrained fundamental joint', Transportation Technical Research Institute, Report No. 7.

Kim, HT & Nam, SW 1996, 'Solidification cracking susceptibility of high strength aluminum alloy weldment [J]', Scripta Materialia, vol. 34, no. 7, pp. 1139-1145.

Kim, IS, Son, JS, Kim, IG, Kim, YK & Kim, OS 2003, 'A study on relationship between process variables and bead penetration for robotic CO<sub>2</sub> arc welding', Journal of Materials Processing Technology, vol. 136, pp. 139-145.

Kissell, R.; Ferry, R. Aluminum Structures—A Guide to Their Specifications and Design; JohnWiley and Sons: London, UK; Washington, DC, USA, 1995.

Konkol, P.J. and M.F. Mruczek, "Comparison of friction stir weldments and submerged arc weldments in HSLA-65 steel." *Welding Journal*, 2007. 86(7): pp. 187s-195s.

Kou, S & Le, Y 1986, 'Nucleation Mechanisms and Grain Refining of Weld Metal', *Welding Journal*, vol.65, pp. 305s-313s.

Krishnan, KN 2002, 'On the formation of onion rings in friction stir welds', *Material Science and Engineering*, vol. 327, pp. 246-251.

Krzysztof Dudzik, "Mechanical Properties of 5083, 5059 And 7020 Aluminum Alloys and Their Joints Welded by MIG," *Journal of KONES Powertrain and Transport*, Vol. 18, No. 3 2011.

Kuk, JM, Jang, KC, Lee, DG & Kin, IS 2004, 'Effects of temperatures and shielding gas mixtures on fatigue life of 5083 aluminium alloy', *Journal of Materials Processing Technology*, vol. 155 &156, pp. 1408 – 1414.

Kumar Pawan &Datta, CK 2008, 'Influence of current & frequency on AA7039 using GTAW Process', *IIW – International Conference*, pp. 997–1002.

Lakshminarayanan, AK, Balasubramanian, V & Elangovan, K 2009, 'Effect of welding processes on tensile properties of AA6061 aluminium alloy joints', *Int J Adv Manuf Technol.*, vol. 40, pp. 286–296.

Lancaster, JF 1987, 'Metallurgy of welding – 4thEd, London, Allen and Unwin.

Leo, P.; D'Ostuni, S.; Casalino, G. Hybrid welding of AA5754 annealed alloy: Role of

post weld heat treatment on microstructure and mechanical properties. *Mater. Des.* 2016, 90, 777–786.

Leo, P.; Renna, G.; Casalino, G.; Olabi, A.G. Effect of power distribution on weld quality during hybrid laser welding of an Al–Mg alloy. *Opt. Laser Technol.* 2015, 73, 118–126.

Lesnewich, A 1943, ‘Control of melting rate and metal transfer in gas shielded metal arc welding’, *Weld J*, vol. 22, pp. 2–42.

Li Cui, Xiaoyan Li, Dingyong He, Li Chen, Shuili Gong, Effect of Nd:YAG laser welding on microstructure and hardness of an Al–Li based alloy, *Materials Characterization* 71 ( 2012 ) 95 – 102

Li Laiping, Liu Xuejun & Qu Wenqing 2013, ‘Research on tensile properties of 2219 aluminium alloy VPTIG welding joint’, *Aerospace Materials & Technology*, vol. 6, pp. 84- 87.

Li, H, Zou, J, Yao, J & Peng, H 2017, ‘The effect of TIG welding techniques on microstructure, properties and porosity of the welded joint of 2219 aluminum alloy’, *Journal of Alloys and Compounds*, doi: 10.1016/j.jallcom.2017.08.157.

Liu, CY, Jing, R, Wang, Q, Zhang, B, Jia, YZ, Ma, MZ & Liu, RP 2012, ‘Fabrication of Al/Al<sub>3</sub>Mg<sub>2</sub> composite by vacuum annealing and accumulative roll bonding process [J]’, *Materials Science and Engineering A*, vol. 558, pp. 510-516 .

Liwei Lu, Tianmo Liu & Yong Chen, 2012, ‘Deformation and fracture behavior of hot extruded Mg alloys AZ31[J]’, *Materials Characterization*, vol. 67, pp. 93-100.

Luijendijk, T 2000, 'Welding of dissimilar aluminium alloys,' *Journal of Materials Processing Technology*, vol. 103, pp. 29 – 35.

M. Asemabadi, M. Sedighi, M. Honarpisheh, Investigation of cold rolling influence on the mechanical properties of explosive-welded Al/Cu bimetal, *Materials Science & Engineering A* 558 (2012) 144–149.

M. V. Patil, "Multi response simulation and optimization of gas tungsten arc welding," *Applied Mathematical Modelling*, 2017, vol. 42, pp. 540–553.

M.A. Mofid, A. Abdollah-zadeh, F. Malek Ghaini, The effect of water cooling during dissimilar friction stir welding of Al alloy to Mg alloy, *Materials and Design* 36 (2012) 161–167.

Madhusudhan Reddy, G, Gokhale, AA & Prasad Rao, K 1998, 'Optimization of pulse frequency in pulsed current gas tungsten arc welding of aluminium – lithium', *J Mater Sci Technology*, vol.14, pp. 61- 66.

Maedler, J.R. NEMA to Gordon Allison; The Aluminum Association: Washington, DC, USA, 12 February 1971.

Malarvizhi, S & Balasubramanian, V 2011, 'Fatigue crack growth resistance of gas tungsten arc, electron beam and friction stir welded joints of AA2219 aluminium alloy' - *Materials and Design*, Elsevier Ltd , vol. 32, pp. 1205– 1214.

Manonmani, K, Murugan, N & Buvanasekaran, G 2005, 'Effect of process parameters on the weld bead geometry of laser beam welded stainless steel sheets'. *International Journal of Joining Materials*, vol. 17, no. 4, pp. 103-109.

Marya, M, Edwards, GR & Liu, S 2004, 'An investigation on the effects of gases in GTA welding of a wrought AZ80 magnesium alloy', *Welding Journal*, vol. 83, no. 7, pp. 203–212.

Matrukanitz, RP 1990, 'Selection and weld ability of heat treatable aluminum alloys', *ASM Handbook-Welding, Brazing and Soldering*, vol. 6, pp. 528-536

Matsuda, F, Nakata, K, Miyanage, Y, Kayano, T & Tuskamoto, K 1978, 'Effect of electromagnetic stirring on weld solidification structure of aluminum alloys. *Trans. JWRI*, vol. 7, no. 2, pp. 33–145.

Miles, M.P., J. Pew, T.W. Nelson, and M. Li, "Comparison of formability of friction stir welded and laser welded dual phase 590 steel sheets." *Science and Technology of Welding and Joining*, 2006. 11(4): pp. 384-388.

Miller, I, Freund, JE & Johnson, M 2001, 'Probability and Statistics for Engineers', Prentice Hall of India Pvt. Ltd., New Delhi, 1999.

Min, D, Shen, J, Lai, S & Shen, J 2009, 'Effect of heat input on the microstructure and mechanical properties of tungsten inert gas arc butt- welded AZ61 magnesium alloy plates', *Mater. Charact.*, vol. 60, pp. 1583–1590.

Miyano, Y., H. Fujii, Y.F. Sun, Y. Katada, S. Kuroda, and O. Kamiya, "Mechanical properties of friction stir butt welds of high nitrogen-containing austenitic stainless steel." *Materials Science and Engineering a-Structural Materials Properties Microstructure and Processing*, 2011. 528(6): pp. 2917-2921.

Mjujibur Rahman, ABM, Kumar, S & Gerson, AR 2007, 'Galvanic Corrosion of Laser Weldment of AA6061 aluminium alloy', *Corrosion Science*, vol. 49, pp. 4339-4351.

Montgomery 2001, 'Design and Analysis of Experiments', John Wiley, New York.

Moreira, PMGP, Santos, T, Tavares, SMO, Richter-Trummer, V, Vilaca, P & De Castro, PMST 2009, 'Mechanical and metallurgical characterization of friction stir welding joints of AA6061-T6 with AA6082-T6', *Materials and design*, vol. 30, no.1, pp. 180-187.

Mr.a.l.dhobale1, Prof. D.S. Galhe effect of arc voltage, welding Current and welding speed on Tensile strength, impact energy And hardness of aa6063 joints Produced by MIG welding IJARIE-ISSN(O)-2395-4396, Vol-2 Issue-6 2016

Munitz, A, Cotler, C, Stern, A & Kohn, G 2001, 'Mechanical properties and microstructure of gas tungsten arc welded magnesium AZ91D plates', *Mater Sci Eng A*, vol. 302, pp. 68–73.

Murugan, N & Parmar, RS 1994, 'Effects of MIG process parameters on the geometry of the bead in the automatic surfacing of stainless steel', *Journal of Material Processing Technology*, vol. 41, pp. 381- 398.

Murugan, N, Parmar, RS & Sud, SK 1993, 'Effect of submerged arc welding process variables on dilution and bead-geometry in single wire surfacing', *Journal of Material Processing Technology*, vol. 37, pp. 767 -780.

N. Ghosh, P. K. Pal, G. Nandi, "Parametric Optimization of MIG Welding on 316L Austenitic Stainless Steel by Grey-Based Taguchi Method," *Procedia Technology*, 2016, vol. 25, pp. 1038 – 1048

N. Ghosh, R. Rudrapati, P. K. Pal, Gotam Nandi, "Parametric Optimization of Gas Metal Arc Welding Process by using Taguchi method on Ferritic Stainless Steel



AISI409,” *Materials Today: Proceedings*, 2017, vol. 4, pp. 2213–2221

Nagesh, DS & Datta, GL 2010, ‘Genetic algorithm for optimization of welding variables for height to width ratio and application of ANN for prediction of bead-geometry for TIG welding process’, *Applied Soft Computing* , vol. 10, pp. 897-907.

Nagesh, DS, Datta, GL, ‘Prediction of weld bead geometry and penetration in shielded metal-arc welding using artificial neural networks’, *Journal of Materials Processing Technology*, vol. 123, pp. 303-312

Nair, BS, Phanikumar, G, Rao, KP& Sinha, PP 2007, ‘Improvement of Mechanical Properties of Gas Tungsten Arc and Electron Beam Welded AA2219 (Al- 6 wt-%Cu) Alloy’, *Science and Technology of Welding and Joining*, pp. 579-585.

Nakamura, T, Hiraoka, K, Takahishi, M &Sasaki, T 2005, ‘Gas metal arc welding with periodic control of shielding gas composition’, *Science and Technology of Welding and Joining*, vol. 10, no. 2, pp. 131-138.

Neelam Vilas Shinde& Martand Tamanacharya Telsang 2016, ‘Effect of alternate supply of shielding gases of tungsten inert gas welding on mechanical properties of austenitic stainless steel’, *Journal of The Institution of Engineers (India): Series C*, vol. 97, no. 3, pp. 299–307.

Nikseresht, Z, Karimzadeh, F, Golozar, MA& Heidarbeigy, M 2010, ‘Effect of heat treatment on microstructure and corrosion behaviour of al6061 alloy weldment’, *Mater Des.*, vol. 31, pp. 2643–2648.

Nourani, M, Milani, A &Annacopoulos, S 2011, ‘Taguchi optimization of process parameters in friction stir welding of 6061 aluminum alloy: A review and case study,’

Engineering, vol. 3, no. 2, pp. 144-155.

Novikov, OM, Persidskii, AS, Radko, EP, Baranovskii, AV & Khasyanov, BA 2012, 'Effect of the composition of the shielding gas on the properties of arc welded joints in aluminium alloys', *Welding International*, vol.26, no.5, pp. 384-387,

Nsbarabokhin, Bushuev, YUG, Shulgina, EV, Kazakov, VA, Dudryashov, ON, Novikov, OM& Makarov, NV 2000, 'Technological special features of welding 1460 high - strength aluminum alloy'. *Welding International*, vol.14, no.6, pp. 468–470.

Oaekcin, A., H.W. Jin, J.Y. Koo, N.V. Bangaru, R. Ayer, G. Vaughn, R. Steeland, and S. Packer. "A Microstructural Study of Friction Stir Welded Joints of Carbon Steels". in *International Offshore and Polar Engineering Conference*. 2004.

P. Sivraj, D. Kanagarajan, V. Balasubramanian "Effect of post weld heat treatment on tensile properties and microstructure characteristics of friction stir welded armour grade AA7075-T651 aluminium alloy". *Defence Technology, Production and hosting by Elsevier*, 10 January 2014, pp. 1-8

P.M.G.P. Moreira, M.A.V. de Figueiredo, P.M.S.T. de Castro, "Fatigue behaviour of FSW and MIG weldments for two aluminum alloys," FEUP, Faculty of Engineering, University of Porto, R. Dr. Roberto Frias, 4200-465 Porto, Portugal.

Palani, PK& Murugan, N 2006, 'Development of mathematical models for prediction of weld bead geometry in cladding by flux cored arc welding', *Int. J. Adv. Manuf. Technol.*, vol. 30, pp. 669-676.

Park, S.H.C., Y.S. Sato, H. Kokawa, K. Okamoto, S. Hirano, and M. Inagaki, "Corrosion resistance of friction stir welded 304 stainless steel." *Scripta Materialia*,

2004. 51(2): pp. 101-105.

Parmar, RS 1997b, 'Welding Engineering and Technology', Khanna Publishers, New Delhi.

Parmar, RS 2004, 'Welding Engineering and Technology', Khanna, New Delhi.

Ponomarev, V and Slivinsky, A (2003) Welding arc and MIG/MAG welding transfer, Kiev.

Pradip D. Chaudhari, Nitin N. More, "Effect of Welding Process Parameters On Tensile Strength" IOSR Journal of Engineering (IOSRJEN) IOSR Journal of Engineering (IOSRJEN) Vol. 04, Issue 05 (May. 2014), ||V5|| PP 01-05.

Quan, LI, Wu, AP, Zhao, Y, Wang, GQ, Yan, DY & Wu, HQ 2015, 'Fracture behavior of double-pass TIG welded 2219-T8 aluminum alloy joints under transverse tensile test', Transactions of Nonferrous Metals Society of China, vol. 25, pp. 1794-1803.

Quintino, L & Allum, CJ 1984, 'Pulsed GMAW: Interaction between process parameters – part 1', Welding and Metal Fabrication, vol. 3, pp. 85-87.

R. Ahmad, M.A. Bakar, "Effect of a post-weld heat treatment on the mechanical and microstructure properties of AA6061 joints welded by the gas metal arc welding cold metal transfer method," Department of Manufacturing and Industrial Engineering, Faculty of Mechanical and Manufacturing Engineering, Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Batu Pahat, Johor, Malaysia.

R. Cao, Gang Yua, J.H. Chena, Pei-Chung Wang, Cold metal transfer joining aluminum alloys-to-galvanized mild steel, Journal of Materials Processing Technology 213 (2013)

1753– 1763

R. Cao, Q. Huang, J.H. Chen, Pei-Chung Wang, Cold metal transfer spot plug welding of AA6061-T6-to-galvanized steel for automotive applications, *Journal of Alloys and Compounds* 585 (2014) 622–632

R. Kumar, S. Kundu and P. Kumar, “Parameters Optimization for Gas Metal Arc Welding of Austenitic Stainless Steel (AISI 304) & Low Carbon Steel using Taguchi’s Technique,” *International Journal of Engineering and Management Research*, 2015, Volume-5, Issue-5, pp. 342-347.

Raja, A, Rohira, K, Samidurai, M 2007, ‘An adaptor for gas tungsten arc welding for pulsed alternating dual shielding gas supply of argon and helium’, *Indian Patent* 248982.

Raja, A, Rohira, K, Samidurai, M 2007, ‘An apparatus and a process for alternating supply of two shielding gases to a gas metal arc welding (GMAW) torch at a pre-set alternating/ pulsing frequency’, *Indian Patent* 255161.

Rajakumar, S, Muralidharan, C & Balasubramanian, V 2011, ‘Predicting tensile strength, hardness and corrosion rate of friction stir welded AA6061-T6 aluminium alloy joints’, *Mat. Des.*, vol. 32, pp. 2878-2890.

Rakesh Kumar & Ulrich Dilthey & D. K. Dwivedi & S. P. Sharma & P. K. Ghosh, “Welding of thin sheet of Al alloy (6082) by using Vario wire DC P-GMAW,” *Int J Adv Manuf Technol* (2009) 42:102–117 DOI 10.1007/s00170-008-1568-4

Rakesh Kumar, Satish Kumar “Study of mechanical properties in mild steel using Metal Inert Gas welding”. *International Journal of Research in Engineering and Technology*,

Volume: 03, April 2014, pp 1-6

Rokhlin, SI& Guu, AC 1993, 'A study of arc force, pool depression and weld penetration during gas tungsten arc welding', *Welding Journal*, vol. 72, no. 8, pp. 381–390.

Rokhlin, SI& Guu, AC 1993, 'A study of arc force, pool depression and weld penetration during gas tungsten arc welding', *Welding Journal*, vol. 72, no. 8, pp. 381–390.

Ruan, Y, Qiu, XM, Gong, WV, Sun, TQ & Li, YP 2012, 'Mechanical properties and microstructures of 6082-T6 joint welded by twin wire metal inert gas arc welding with the SiO<sub>2</sub> flux', *Materials and design*, vol. 35, no. 2, pp. 20-24.

Rui Wang, Liang Zhen-xin, Zhang Jian-xun & Dyanamic 2008, 'Process of angular distortion between Aluminium and Titanium alloys with TIG Welding, *Transaction of Non-ferrous Metals Society of China*, vol.18, no.2, pp. 233-239.

S. Missori and A. Sili, "Mechanical Behavior of 6082-T6 aluminum alloy welds,".

S.T. Amancio-Filho, S. Sheikhi, J.F. dos Santos, C. Bolfarini, Preliminary study on the microstructure and mechanical properties of dissimilar friction stir welds in aircraft aluminium alloys 2024-T351 and 6056-T4 *journal of materials processing technology* 206 (2008) 132–142

S.Utkarsh, P. Neel, Mayank T Mahajan, P.Jignesh, R. B.Prajapati“ Experimental Investigation of MIG Welding for ST-37 Using Design of Experiment” *International Journal of Scientific and Research Publications*, Volume 4, Issue 5, May 2014.

S.V. Sapakal, M. T. Telsang, "Parametric Optimization of MIG Welding Using Taguchi Design Method," *International Journal of Advanced Engineering Research and Studies*, 2012, vol. 1, pp. 28-30.

Sacks RJ 1981, 'Welding: Principles and Practices', Glencoe, Peoria, IL.

Saedi, HR &Unkel, W 1988, 'Arc and weld pool behavior for pulsed current GTAW', *Weld Journal*, vol. 67, no. 11, pp. 247s – 255s.

Sahoo, P, Debroy, T, McNallan, MJ 1988, 'Surface tension of binary metal-surfaceactive solute systems under conditions relevant to welding metallurgy', *Metall.Trans., B*, vol. 19, no. 3, pp. 483–491.

Sayer, S, Yeni, C & Ertugrul, O 2011, 'Comparison of mechanical and microstructural behaviors of tungsten inert gas welded and friction stir welded dissimilar aluminum alloys AA 2014 and AA 5083', *Kovove Mater.*, vol. 49, pp. 155–162.

Senthil Kumar, T, Balasubramanian, V & Sanavullah, MY, 2007, 'Influences of Pulsed Current Tungsten inert Gas Welding Parameters on the Tensile Properties of AA6061 Aluminium Alloy', *Materials and Design*, vol.28, no.7, pp. 2080-2092.

Serdar Karaoglu& Abdullah Secgin 2008, 'Sensitivity analysis of submerged arc welding process parameters', *Journal of Materials Processing Technology*, vol. 202, pp. 500-507.

Shamsul, J &Hisyam, M 2007, 'Study of Spot Welding of Stainless-Steel Type 304', *Journal of Applied Science Research*, vol. 3, no. 11, pp. 1494-1499.

Shaogang Wang, Xinqiang Wu, Investigation on the microstructure and mechanical

properties of Ti–6Al–4V alloy joints with electron beam welding, *Materials and Design* 36 (2012) 663–670

Sharp, M.L. *Behavior and Design of Aluminum Structures*; McGraw-Hill: New York, NY, USA, 1992.

Shufen, CAO, Tie-ping, CHEN, Jie, YI, Peng-cheng, GUO & Luoxing, LI 2014, ‘Simulation of temperature, stress and deformation during double pulsed MIG welding of aluminum alloy’, *Transactions of Nonferrous Metals Society of China*, vol. 24, no.7, pp. 1685-1692.

Sivaraj, Kanagarajan & Balasubramanian 2014, ‘Effect of post weld heat treatment on tensile properties and microstructure characteristics of friction stir welded armour grade AA7075-T651 aluminium alloy’. *Defence Technology*, vol.10, no.1, pp. 1-8.

Sivashanmugam, M, Manoharan, N, Ananthapadmanaban, D & Ravi Kumar, S 2009, ‘Investigation of microstructure and mechanical properties of GTAW and GMAW joints of AA7075 Aluminium alloy’, *International journal on Design and Manufacturing Technologies*, vol.3, no.2, pp. 56-62.

Starke, E.A., Jr. *Fatigue and Microstructure*; Meshii, M., Ed.; ASM International: Materials Park, OH, USA, 1979.

Starling, CMD, Marques, PV & Modenesi, PJ 1995, ‘Statistical modelling of narrow-gap GTA welding with magnetic arc oscillation’, *Journal of Material Processing Technology*, vol. 51, pp. 37-49.

System (ANFIS) for predicting weld bead shape parameters during A- TIG welding of Reduced activation Ferritic-Martensitic (RAFM) steel’, *Trans Indian Inst Met*, vol. 66,

no. 1, pp. 57-63.

T., H. Fujii, K. Genchi, S. Iwaki, S. Matsuoka, and K. Nogi, "High Quality-High Speed Friction Stir Welding of 304 Austenitic Stainless Steel." *Tetsu to Hagane-Journal of the Iron and Steel Institute of Japan*, 2008. 94(11): pp. 539-544.

T.S. Srivatsana, U. Bathini, A. Patnaik, T. Quick, A study of cyclic fatigue, damage initiation, damage propagation, and fracture of welded titanium alloy plate, *Materials Science and Engineering A* 527 (2010) 6649–6659

Tan & Ögel 2007, 'Influence of heat treatment on the mechanical properties of AA6066 alloy', *Turk J Eng Environ. Sci*, vol.31, no.1, pp. 53-60.

Tao, W, Yang, Z& Chen, Y 2013, 'Double sided fiber laser beam welding process of T joints for aluminium aircraft fuselage panels: Filler wire melting behavior, process, stability and their effects on porosity defects', *Optics & Laser Technology*, vol. 52, pp. 1- 9.

Tarang, YS &Yang, WH 1998, 'Optimisation of the weld bead geometry in gas tungsten arc welding by the Taguchi method', *IntJ Adv., Manuf., Technol.*,vol. 14, no. 8, pp. 549-554.

Tarng, YS, Tsai, HL & Yeh, SS 1993, 'Modeling, optimization and classification of weld quality in tungsten inert gas welding', *International Journal for Machine Tools Manufacturing*, vol. 39, pp. 1427-1438.

Tazetdinov, RG, Novikov, OM, Persidskii, AS, Khasyanov, BA, Ivanov, EN & Plaksina, LT 2013, 'Arc welding in shielding gases with alternate pulsed supply of dissimilar gases', *Welding International*, vol. 27, no. 4, pp. 311-314.



Temmar, M, Hadji, M & Sahraoui, T 2011, 'Effect of post weld aging treatment on mechanical properties of tungsten inert gas welded low thickness 7075 aluminium alloy joints', *Mater Des*, vol. 32, pp. 1532–1536.

Temmar, M, Hadji, M & Sahraoui, T 2011, 'Effect of post weld aging treatment on mechanical properties of tungsten inert gas welded low thickness 7075 aluminium alloy joints', *Mater Des*, vol. 32, pp. 1532–1536.

Thao, DT, Kim, IS, Na, HH, Jung, SM & Shim, JY 2014, 'Development of mathematical model with a genetic algorithm for automatic GMA welding process', *International journal for Advanced Manufacturing Technology*, vol. 73, no. 5–8, pp. 837–847.

The Aluminum Association. *Aluminum Design Manual*; Aluminum Association of America: Washington, DC, USA, 2010.

Tseng, KH & Hsu, CY 2011, 'Performance of activated TIG process in austenitic stainless steel welds', *Journal of Materials Processing Technology*, vol. 211, no. 3, pp. 503-512.

Ueji, R., H. Fujii, L. Cui, A. Nishioka, K. Kunishige, and K. Nogi, "Friction stir welding of ultrafine grained plain low-carbon steel formed by the martensite process." *Materials Science and Engineering A*, 2006. 423(1-2): pp. 324-330.

Usta, M, Glicksman, ME & Wright, RN 2004, 'The effect of heat treatment on Mg<sub>2</sub>Si coarsening in aluminum 6105 alloy'. *Metall Mater Trans A*, vol.35A, pp. 435–8.

V. Chauhan, R. S. Jadoun, "Parametric Optimization of MIG Welding for Stainless Steel (SS-304) And Low Carbon Steel Using Taguchi Design Method," *International*

Journal of Recent Scientific Research, 2015, Vol. 6, Issue, 2, pp. 2662-2666.

Vasudevan, M, Kuppaswamy, MV & Bhaduri, AK 2010, 'Optimising process parameters for gas tungsten arc welding of an austenitic stainless steel using genetic algorithm', Transactions of The Indian Institute of Metals, vol. 63, no. 1, pp. 1-10.

Vikas Chauhan and Dr. R. S. Jadoun "Parametric optimization of MIG welding for stainless steel (SS304) and low carbon steel using Taguchi design method". International Journal of Recent Scientific Research, Vol. 6, Issue 2, February 2015, pp. 2662-2666

Vishnuvaradhan, S, Chandrasekhar, N, Vasudevan, M & Jayakumar, T 2013, 'Intelligent modeling using Adaptive Neuro Fuzzy Inference

Vural, M 2014, 'Welding Processes and Technologies', Compre. Mater. Proc. vol. 6, pp. 3-48.

W Xu and M F Gittos, "Material and Structural Behavior of MIG Butt Welds in 6000 Series Aluminium Alloy Extrusions for Rail Vehicles," TWI Limited, Granta Park, Great Abington, Cambridge, CB1 6AL.

W Xu and M F Gittos: 'Material and structural behaviour of MIG butt welds in 6005A-T6 aluminium alloy extrusions under quasi-static and impact loading'. TWI Report No. 14054/1/04, February 2004.

Wagoner, N. Reynolds Metals Company to R; Hartmann, Hapco: Abingdon, VA, USA, 5 August 1963.

Wajira Mirihanage and Nanda Munasinghe, "Modification of AA 5083 WELD Joint

characteristics,” International Symposium of Research Students on Materials Science and Engineering December 20-22, Chennai, India Department of Metallurgical and Materials Engineering, Indian Institute of Technology Madras.

Wang, L, Jin, L, Huang, W, Xu, M & Xue, J 2016, ‘Effect of Thermal Frequency on AA6061 Aluminum Alloy Double Pulsed Gas Metal Arc Welding’, *Journal of Materials and Manufacturing Processes*, vol.31, no.16, pp. 2152-2157

Warmuzek, M.; Mrowkaand, G.; Sieniawski, J. Influence of Heat Treatment on Precipitation of Intermetallic Phases in Commercial AlMnFeSi Alloy. *J. Mater. Process. Technol.* 2004, 157–158, 624–632.

Weman, K (2003) *Welding processes handbook*, Cambridge, Woodhead.

Wu Dafang, Wang Yuewu, Pan Bing, Mu Meng, Zhu Lin, Experimental research on the ultimate strength of hard aluminium alloy 2017 subjected to short-time radioactive heating, *Materials and Design* 40 (2012) 502–509

Wu, Y &, Wang, Y 2010, ‘Effect of Filler Metal and Post welding Heat Treatment on Mechanical Properties of Al-Zn-Mg Alloy Weldments’, *Journal of Materials Engineering & Performance*, vol. 19, no.9, pp. 1362-1369.

Xu,W.; Gittos, M.F. *Materials and Structural Behavior of MIG Butt Welded in 6005-T6 Aluminum Alloy Extrusions under Quasi Static and Impact Loading*; TWI Report Number 14054/1/04; TheWelding Institute: Cambridge, UK, 2004.

Yamauchi, N & Agusa, K 1981, ‘A state of the art report of minor element effects on the gas shielded arc welding phenomena in Japan’, *J Jpn Weld*, vol. 50, pp. 1059–1065.

Yang Dongxia, Li Xiaoyan, He Dingyong, Huang Hui, Zhang Liang, Study on microstructure and mechanical properties of Al–Mg–Mn–Er alloy joints welded by TIG and laser beam, *Materials and Design* 40 (2012) 117–123

Yang, CG, Guo, XM, Hong ZF & Qian BN 2005, ‘Effect of electromagnetical stirring on the structure and mechanical properties of weld metal of 2219Al-Cu alloy’, *Acta Metallurgica Sinica*, vol.41, no.10, pp. 1077-1081.

Yang, CG, Guo, XM, Hong ZF & Qian BN 2005, ‘Effect of electromagnetical stirring on the structure and mechanical properties of weld metal of 2219Al-Cu alloy’, *Acta Metallurgica Sinica*, vol.41, no.10, pp. 1077-1081.

Yarmuch, MAR & Patchett, BM 2007, ‘Variable AC Polarity GTAW Fusion Behavior in 5083 Aluminum’, *Welding Research*, vol. 86, pp. 196 – 200.

Yeo, D 1990, ‘Apparatus and method for producing multi-level heat input for weld formation using a single current level power supply’. U.S. Patent No. 4, vol. 918, p. 287.

Y. Balram et al.2019, ‘Effect of filler wires on weld strength of dissimilar pulse GTA Monel 400 and AISI 304 weldments’. *Materials Today: Proceedings*, CMR Institute of Technology, Kandlakoya, Medchal, Hyderebad.

Yi Han, Ke Ma, Lian Li, Wei Chen, Hiromi Nagaumi, Study on microstructure and mechanical properties of Al–Mg–Si–Cu alloy with high manganese content, *Materials and Design* 39 (2012) 418–424

Zhao, CX, Steijn, V, Richardson, IM, Kleijn, CR, Kenjeres, S & Saldi, Z 2009, ‘Unsteady interfacial phenomena during inward weld pool flow with an active surface

oxide', *Sci Technol Weld Joining*, vol.14, pp. 132–40.

Zhao, H & Debroy, T 2001, 'Weld Metal Composition Change during Conduction Mode Laser Welding of Aluminum Alloy 5182', vol. 32B, pp. 163 – 172.

Zhua, ZY, Deng, CY, Wang, Y, Yang, ZW, Ding, JK & Wang, DP 2015, 'Effect of post weld heat treatment on the microstructure and corrosion behavior of AA2219 aluminum alloy joints welded by variable polarity tungsten inert gas welding', *Materials & Design*, vol. 65, pp. 1075-1082.