Optimization on the mechanical parameters and impact of welding parameters of pulsed TIG welding of Al-Zn-Mg alloy

Prasanth Ponnusamy1, PON Maheskumar2, A Mohanraj3, G M Pradeep4

S Nanthakumar5, Sk Hasane Ahammad6 and Girimurugan R7\*

1Assistant Professor, Department of Mechanical Engineering, Tagore Institute of Engineering and Technology, Salem 636 112, Tamilnadu, India

2Assistant Professor, Department of Mechanical Engineering, Nandha College of Technology, Perundurai 638 052, Tamilnadu, India.

3Assistant Professor, Department of Mechanical Engineering, K S R Institute for Engineering and Technology, Tiruchengode 637 215, Tamilnadu, India

4Assistant Professor, Department of Mechanical Engineering, Velammal Institute of Technology, Chennai 601 204, Tamilnadu, India

5Assistant Professor (Senior Grade), Department of Mechanical Engineering, PSG Institute of Technology and Applied Research, Coimbatore 641 062, Tamilnadu, India

6Assistant Professor, Department of Electronics and Communication Engineering, Koneru Lakshmaiah Education Foundation, Vaddeswaram 522 302, Andhra Pradesh, India

7Assistant Professor, Department of Mechanical Engineering, Nandha College of Technology, Perundurai 638 052, Tamilnadu, India.

\*Corresponding Author: rgirimuruganmech@gmail.com

**Abstract**. As a function of pulsed Tungsten Inert Gas (TIG) weld processing factor, authors have studied the relationship between dilution and mechanical qualities including impact toughness, notch tensile strength (NTS), hardness in the as-welded condition. Welds made with a pulsed TIG torch have a minimum NTS and impact toughness than the base metal (BM) because of the grains of the inter-dendritic network formed during the welding process. Weldment’s made from heat-treatable (Al-Zn-Mg) aluminium alloys have their process parameters for pulsed TIG welding optimized employing the Taguchi analysis so as to get the best possible mechanical qualities. Notch tensile strength is shown to be inversely proportional to impact toughness.

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