Article Abstract

Title:	Effect of electric and magnetic field on welding parameters in plasma welding
Author(s):	R. K. Tyagi[1]*, R. S. Pandey[2], Arbind Kumar[3], K. K. Srivastava[4]
Address(es):	[1,*3]Department of Mechanical Engineering, Birla Institute of Technology Mesra, Ranchi, INDIA [3] Department of Physics, Amity University Noida, INDIA [4] Central University Ranchi Jharkhand, INDIA [*]Corresponding Author: e-mail: tyagi_rk1[AT]rediffmail.com, Tel +91-9911393047
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Abstract:	Plasma welding parameters have been systemically investigated by using experimental factors/constraints along with numerical analysis and the help of mathematical formulation as well as computer technique. In this paper, KSF6 gas has been used to generate plasma which contains velocity shear instability. The plasma welding parameters like Debye length, temperature of ions and the number of ions has been examined by taking experimental parameters. The results obtained by theoretical calculations are identical to the experimental results. In this work, influences of electric and magnetic field on Debye length, temperature of ions and the number of ions have been quantified. Theoretical investigation on one hand, while plasma welding parameters on the other increased by increasing the values of homogenous DC electric field. It also decreased by increasing the value of magnetic field. The controlling of welding parameters by electric and magnetic field has been discussed.
Keywords:	Plasma, Velocity Shear Instability, Welding parameters, Plasma welding.