

3rd International Conference and Exhibition on Materials Science & Engineering

October 06-08, 2014 Hilton San Antonio Airport, USA

An ANOVA approach for the process parameters optimization of Al-Si alloy sand casting

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This research paper aims to propose a novel approach using ANOVA technique for the strategic investigation of process parameters and their effects on the mechanical properties of Al-alloy cast. The two process parameters considered here were permeability of sand and pouring temperature of aluminium alloy. ANOVA has been employed for the first time to determine the effects of these selected parameters on the impact strength of alloy. The experimental results show that this proposed technique has great potential for analyzing sand casting process. Using this approach it has been determined the treatment mean square, response mean square and mean square of error as 8.54, 8.255 and 0.435 respectively. The research concluded that at the 5% level of significance, permeability of sand is the more significant parameter influencing the impact strength of cast alloy.

Biography

Manjinder Bajwa has completed his Master of Technology at the age of 25 years from PEC University of Technology, Chandigarh, India in 2010. He is the coordinator of manufacturing department in Lovely Professional University, India. He has published more than 5 papers in reputed journals and presented more than 5 papers in national and international conferences.

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