Article Abstract

Title:	Development of light weight ALFA composites
Author(s):	J. Babu Rao*, D. Venkata Rao and N.R.M.R. Bhargava
Address(es):	Department of Metallurgical Engineering, Andhra University, Visakhapatnam – 530 003, INDIA *Corresponding Author: e-mail:baburaojinugu@yahoo.com
Journal:	*International Journal of Engineering, Science and Technology*, Vol. 2, No. 11, 2010, pp. 50-59.
Abstract:	Composites are most promising materials of recent interest. Metal matrix composites (MMCs) possess significantly improved properties compared to unreinforced alloys. There has been an increasing interest in composites containing low density and low cost reinforcements. Among various dispersoids used, fly ash is one of the most inexpensive and low density reinforcement available in large quantities as solid waste by-product. In the present investigation, pure aluminium – 5 to 15% (by weight) fly ash composites were made by stir casting route. Phase identification and structural characterization was carried out on fly ash by X-ray diffraction studies. Scanning electron microscopy and optical microscopy was used for microstructure analysis. There was a uniform distribution of fly ash particles in the matrix phase and also existing a good bonding between matrix and fly ash. The hardness of the composites increased whereas the density of the composites decreased with increasing the amount fly ash than the pure aluminium. Enhanced mechanical properties were observed with increasing amount of fly ash under compression.
Keywords:	Light metals, Aluminium, MMCs, Fly Ash, Stir casting