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SPEX mechanical milling preparation of the Al metal matrix composite powders, reinforced by nanometer size SiC particles

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Abstract: The effect of SPEX mechanichal milling on a mixture of Al-SiC composites has been investigated. Results of XRD, SEM and commulative size distribution analysis show that the size of crystallites is decreased as milling time increses to 12 hours, while lattice strains are increased. Meanwhile the crytallite size increases with increasing miling time between 12 and 24 hours, but the lattice strains decreas. In addition, average particle size of the composite decreses at initial 6 hours but increases for longer milling times. SEM and TEM micrographs of the productions indicate homogeneous distribution of 50 nm size SiC particles into Al matrix, where the homogeneuty increases with increasing milling time.

Keywords: *Metal matrix composit, Mechanichal mixing, SPEX milling. Al-SiC.*