Title: 14 point Times New Roman font, no bold or italic, centered, capitalize main words

Author's Name:12 point Times New Roman, Bold, Centered
Itallic: Presenting Author
*: Corresponding Author

Margins: 1" top and bottom, 0.75" left and right

Thermal Stability, Grain Growth Kinetics and Mechanical Properties of Bulk Ultrafine Grained AA6063/SiC Composites with Varying Reinforcement Size

O.B. Bembalge*, S.K. Panigrahi
[1]Department of Mechanical Engineering
Indian Institute of Technology Madras, Chennai- 600036, India
Email: email of *Presenting Author*/Corresponding Author*

ABSTRACT: 14 point Times New Roman font, Bold, Centered,

ABSTRACT

%SiC composites with varying reinforcement sizes (12 µm (coarse), 1 µm (fine), 45 nm (nano)) have been developed by a hybrid route of stir-casting and cryorolling. In the present work, the influence of annealing temperatures (423 K to 573 K) on the precipitation evolution, particle stimulated nucleation (PSN), recrystallization, grain growth kinetics and thermal stability of developed bulk UFG composites [illegible] microstructural evolution is correlated with mechanic[illegible] composites have shown evidence of recrystallized [illegible] microstructure up to 473 K and 523 K, respectively. Su[illegible] UFG microstructure up to 573 K was observed in the UF[illegible] of nano SiC particles and precipitates along grain boundaries. This ultimately resulted in increased grain growth activation energy and strength of the UFG nanocomposite. However, the overall increase in strength is maximum in the UFG nanocomposite due to the dominant effect of dislocation strengthening, grain boundary strengthening and precipitation strengthening mechanisms. A thorough examination of the microstructural evolution of UFG composites at different annealing temperatures along with their mechanical behavior is presented in this paper.

ABSTRACT Content: 12 point Times New Roman font, Not bold, Justify, Maximum No of words: 500.

Keywords: Metal matrix composite, ultrafine-grained material, thermal stability, particle stimulated nucleation.

Note :Please submit along with Copy Right Form duly signed