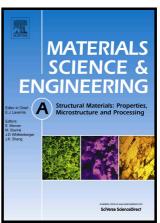
# Author's Accepted Manuscript

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## **ACCEPTED MANUSCRIPT**

A comprehensive analysis of extrusion behavior, microstructural evolution, and mechanical properties of 6063 Al–B $_4$ C composites produced by semisolid stir casting

Amir Pakdel <sup>a,b,\*</sup>, Agnieszka Witecka <sup>c</sup>, Gaulthier Rydzek <sup>b</sup>, Dayangku Noorfazidah Awang Shri <sup>d</sup>,

Valeria Nicolosi <sup>a,e</sup>

<sup>a</sup> Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN) and Advanced
 Materials Bio-Engineering Research Centre (AMBER), School of Chemistry, Trinity College
 Dublin, Dublin, Ireland

<sup>b</sup> World Premier International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), Tsukuba, Japan

<sup>c</sup> Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland
 <sup>d</sup> Faculty of Mechanical Engineering, Universiti Malaysia Pahang, Pekan, Pahang, Malaysia
 <sup>e</sup> I-FORM Advanced Manufacturing Research Centre, University College Dublin, Dublin, Ireland

\*Corresponding author's E-mail: pakdela@tcd.ie

#### **Abstract**

In this study, composites of aluminum alloy 6063 reinforced with 10 wt.% boron carbide microparticles were successfully fabricated by a combination of spark plasma sintering and stir casting methods, followed by hot extrusion. A systematic study on the relationship between extrusion process variables (i.e. extrusion ratio, temperature, and punch speed) and porosity, particle refinement, particle distribution and consequently tensile properties and fracture behavior of the composites was performed. Extensive electron microscopy analysis and tensile testing of the

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