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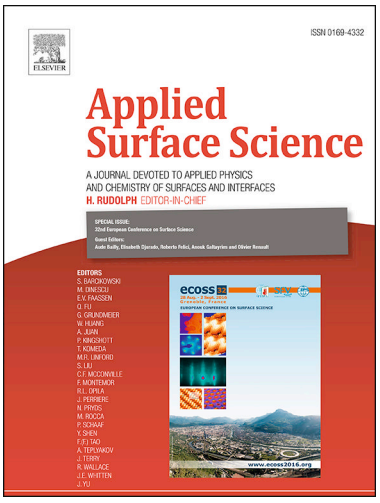

Full Length Article

Through-thickness thermal conductivity enhancement of graphite film/epoxy composite via short duration acidizing modification

Han Wang, Shaokai Wang, Weibang Lu, Min Li, Yizhou Gu, Yongyi Zhang, Zuoguang Zhang

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Through-thickness thermal conductivity enhancement of graphite film/epoxy composite via short duration acidizing modification

Han Wang[1,2], Shaokai Wang*[1], Weibang Lu[2], Min Li[1], Yizhou Gu[1], Yongyi Zhang*[2], Zuoguang Zhang[1]

[1]Key Laboratory of Aerospace Advanced Materials and Performance (Ministry of Education), School of Materials Science and Engineering, Beihang University, No. 37 Xueyuan Road, Haidian District, Beijing 100191, China.

Corresponding email: wsk@buaa.edu.cn

[2]Advanced Materials Division, Suzhou Institute of Nano-Tech and Nano-Bionics, No. 398 Ruoshui Road, Suzhou 215123, China.

Corresponding email: yyzhang2011@sinano.ac.cn

Keywords: graphite film, thermal conductivity, interface modification

Abstract

Graphite films have excellent in-plane thermal conductivity but extremely low through-thickness thermal conductivity because of their intrinsic inter-layer spaces. To improve the inter-layer heat transfer of graphite films, we developed a simple interfacial modification with a short duration mixed-acid treatment. The effects of the mixture ratio of sulfuric and nitric acids and treatment time on the through-thickness thermal properties of graphite films were studied. The modification increased the through-thickness thermal conductivity by 27% and 42% for the