

SEMINAR - סמינר

הנדך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתקיים ביום ג' 14.02.2017 (יח' בשבט, תשע"ז), בבניין דן קאהן, אודיטוריום 1, 13:30.

ירצה:

Prof. Qiang Guo

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על הנושא:

Enhanced mechanical properties of bulk graphene/aluminum composites with a nanolaminated structure

The seminar will be given in English

להלן תקציר ההרצאה:

Bulk graphene-reinforced Al matrix composites of various reinforcement concentrations were fabricated via a modified powder metallurgy approach. These composites possess a nanolaminated, brick-and-mortar architecture, where layers of ~200nm-thick pure Al platelets are stacked in a staggered arrangement, and are separated by graphene sheets, each containing several graphene monolayers. The composite containing 1.5 vol. % graphene were shown to have an uniaxial tensile strength of 302 ± 3 MPa, about 50% higher than that of unreinforced Al matrix prepared using the same fabrication route (201 ± 6 MPa). Moreover, the composite possess a uniform elongation of $3.4\pm 0.2\%$, only slightly lower than that of the Al matrix ($4.3\pm 0.4\%$), and have a significantly lower strain hardening capability. Combined with post-mortem and in situ transmission electron microscopic (TEM) analysis, our findings were interpreted in terms of the uniform distribution of graphene in the Al matrix, the effective load transfer between the graphene sheets and Al platelets, and the interaction between mobile dislocations and the graphene-Al interfaces.

בברכה,

המארח: פרופ"מ שמוליק אוסובסקי

פרופ"מ שאול אוסובסקי
מרכז הסמינרים