

Accepted Manuscript

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PII: S0032-5910(16)30383-7
DOI: doi: [10.1016/j.powtec.2016.06.045](https://doi.org/10.1016/j.powtec.2016.06.045)
Reference: PTEC 11753

To appear in: *Powder Technology*

Received date: 3 December 2015
Revised date: 2 June 2016
Accepted date: 30 June 2016



Please cite this article as: Xin Gao, Hongyan Yue, Erjun Guo, Hong Zhang, Xuanyu Lin, Longhui Yao, Bao Wang, Mechanical properties and thermal conductivity of graphene reinforced copper matrix composites, *Powder Technology* (2016), doi: [10.1016/j.powtec.2016.06.045](https://doi.org/10.1016/j.powtec.2016.06.045)

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Mechanical properties and thermal conductivity of graphene reinforced copper matrix composites

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Abstract

The dispersion of graphene in copper matrix significantly affects the mechanical and physical properties of graphene reinforced copper matrix composite (Gr/Cu). In our present study, graphene oxide (GO) with the negative charge was prepared by a modified Hummers' method and Cu powders were coated by hexadecyl trimethyl ammonium bromide (CTAB) to obtain the surface positive charge. GO-Cu powders were prepared by electrostatic self-assembly and Gr/Cu composites were fabricated by powder metallurgy. Morphologies of GO-Cu powders, microstructures and tensile fractographs of the Gr/Cu composites were observed. The effect of graphene contents

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