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Thermal conductivity of mass-graded graphene flakes

Jigger Cheh, Hong Zhao

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In this letter we study thermal conduction in mass-graded graphene flakes by nonequilibrium molecular dynamics simulations. It is found that mass-graded graphene flakes reveal no thermal rectification effect in thermal conduction process. The dependence of thermal conductivity upon the heat flux and the mass gradient are studied to confirm the generality of the result. The mechanism leading to the absence of thermal rectification effect is also discussed.

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Subjects: Materials Science (cond-mat.mtrl-sci); Mesoscale and Nanoscale Physics (cond-

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