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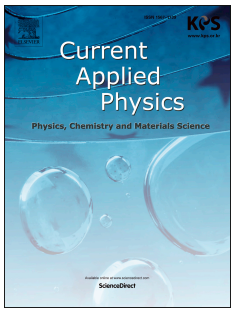

The effective stiffness of an embedded graphene in a polymeric matrix

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Highlighted

The effective stiffness of an embedded graphene in a polymeric matrix

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Abstract

Modeling the real sizes of an embedded graphene and the surrounding polymer of a representative volume element in a molecular dynamics simulation is a tedious task. The less computational limitations made the continuum-based method a good candidate for modeling of nanocomposites. However, having a good knowledge of mechanical properties of the embedded graphene in a polymeric matrix is a challenge for employing a continuum-based method. Since the applied stress on the graphene/epoxy nanocomposites has not been directly transferred to the embedded graphene, it brings the following question to mind. Is the stiffness of the embedded graphene different from that of the isolated one? To answer to this question, a model was developed by combining the molecular dynamic simulation and

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