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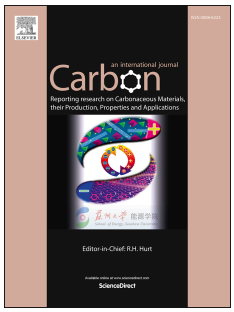

Tunable ballistic thermal conductance of electrons in strained graphene nanoribbons

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Tunable ballistic thermal conductance of electrons in strained graphene nanoribbons

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Abstract

The thermal transport properties of electrons in graphene nanoribbon (GNR) subjected to strain fields are studied by non-equilibrium Green's function approach. The results show that the stretching of the carbon-carbon bond in strained GNR can enhance the ballistic thermal conductance of electrons. The enhancement originates from that the change of C-C bond length can modulate the nearest-neighbor π-orbital overlap and reduce the threshold energies of electron transport modes. A brief analysis of these results is given.

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