

Effect of magnetic zigzag edges in graphene-like nanoribbons on the thermoelectric power factor

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This study shows that magnetic edge states of graphenelike nanoribbons enhance effectively the thermoelectric performance. This is due to the antiparallel alignment of magnetic moments on opposite zigzag edges and the confinement effect, which jointly lead to the appearance of a gap in the electronic energy spectrum. Consequently, the Seebeck coefficient as well as the thermoelectric power factor get strongly enhanced at room temperature for energies not far away from the charge neutrality point. Moreover the corresponding figure of merit (ZT) is also improved as a result of the reduced electronic thermal conductance.

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