

Abstract Submitted
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Enhancement of thermoelectric efficiency by quantum interference effects in trilayer silicene flakes LUIS ROSALES, NATALIA CORTÉS, Universidad Técnica Federico Santa María, Valparaíso, Chile, LEONOR CHICO, Instituto de Ciencia de Materiales de Madrid, Cantoblanco, Spain, MÓNICA PACHECO, PEDRO ORELLANA, Universidad Técnica Federico Santa María, Valparaíso, Chile — In recent years, the enhancement of thermoelectric efficiencies has been accomplished in nanoscale systems by making use of quantum effects. We exploit the presence of quantum interference phenomena such as bound states in the continuum and Fano antiresonances in trilayer silicene flakes to produce sharp changes in the electronic transmission of the system. By applying symmetric gate voltages the thermoelectric properties can be tuned and, for particular flake lengths, a great enhancement of the figure of merit can be achieved. We show that the most favorable configurations are those in which the electronic transmission is dominated by the coupling of bound states to the continuum, tuned by an external gate.
References: [1] N. Cortés et al., J. Phys.: Condens. Matter **29**, 015004 (2017).

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