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Tailoring The Spin Dependent Electronic Transport of Low Dimensional Materials AYDIN MAMMADOV, SERKAN CALISKAN, University of Houston-Clear Lake, Department of Physical and Applied Sciences — Density Functional Theory combined with Non Equilibrium Green's Function Formalism is employed to examine graphene-like structures containing either transition metals (TMs) or defects. After the structural optimization, first principles calculations are performed to exhibit spin polarized electronic structure and transport properties of these materials. It is revealed that structural defects can induce spin polarization which can further be enhanced through TMs. They can be utilized to manipulate the spin dependent behavior and achieve half metallic property which plays a crucial role for the envisaged spintronic devices.

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