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Electron Hole Asymmetry in Graphene Coupled to an SiO₂ Substrate ROBERT HIGGINBOTHAM, University of Notre Dame, NAN SUN, GERALD ARNOLD, STEVEN RUGGIERO — The conductance of graphene generally exhibits an asymmetry in the electron and hole branches. We propose a contribution to this asymmetry that is based upon the coupling between the graphene and an SiO₂ substrate. Treating the coupling in the tight-binding approximation, we calculate an exact Green's function for the coupled graphene/SiO₂ system.

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