

Abstract Submitted
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Fabrication of a space-charge-induced carrier guiding semiconductor device AYESHA LAKRA, The City College of New York — Space-charge potentials are a crucial element in the understanding of charge transport in a semiconductor device. To understand the space-charge-induced carrier guiding, my group devised an experiment to visualize the dynamics of space-charge formation in a diamond with nitrogen vacancies (NV). My main contribution was the fabrication of a semiconductor device where I patterned two electrodes on a type 1b synthetic diamond. The fabrication process consisted of e-beam deposition and a lift-off UV photolithography. The device was connected to a high voltage power supply and the NV charge was excited by green and orange laser pulses which generated electrical fields. This semiconductor device will be useful for the group's overall aim of guiding space-charge carriers.

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