

Abstract Submitted
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The Quantum Interference Transistor¹ DAVID CARDAMONE,
CHARLES STAFFORD, SUMIT MAZUMDAR, University of Arizona — We propose a new class of molecular transistor based on quantum interference. This new type of transistor is smaller than most proposed molecular transistors, yet possesses the important characteristics of traditional macroscopic devices. The proposed device has a broad, step-like I-V characteristic and amplifies current in a controllable way. Numerical calculations making use of the non-equilibrium Green function technique and Landauer-Büttiker formalism illustrate this.

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