

Abstract Submitted
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Towards Jellybean-Coupled Spin Qubits SEBASTIAN PAUKA¹, XANTHE CROOT², DAVID REILLY³, The University of Sydney, JOHN WATSON⁴, MICHAEL MANFRA⁵, Purdue University — Semiconductor-based spin qubits are interesting platforms for investigating the scalability of elementary quantum computers. Here, we present results taken on a GaAs five-quantum dot device in which an intermediary, multi-electron jellybean dot is used as a coherent, exchange-based spin coupler. Our geometry, together with the use of positively biased accumulation gates, allows for the routine loading and charge sensing of all dots in the 5-dot array. Control of the jellybean dot and capacitive coupling of two singlet-triplet qubits is demonstrated.

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