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Readout and Control Technology for Spin Qubits JAMES COLLESS, DAVID REILLY, The University of Sydney — Scale-up of spin qubits will require the development of new technological approaches that enable readout and control in multi-qubit device architectures. We report results demonstrating a fast readout method based on quantum capacitance that is well suited to detecting spin-states in qubit geometries beyond two quantum dots. Control protocols and device architectures for the selective rotation of single spins using on-chip transmission lines and ac-magnetic field gradients will be presented.

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