

Abstract Submitted  
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**Superconducting qubits using titanium nitride** MATTHIAS STEFFEN, JOSEPHINE CHANG, IBM, DAVID PAPPAS, MIKE R. VISSERS, MARTIN SANDBERG, JIANSONG GAO, NIST, LYNNE GIGNAC, JOHN BRULEY, CHRIS BRESLIN, MARKO HOPSTAKEN, CHRIS LIRAKIS, IBM — Recent results in the community strongly implicate surface loss as a dominant source of decoherence (primarily energy relaxation) for superconducting transmon qubits. Resonators and qubits made of titanium nitride (TiN) showed significant device improvement compared with lift-off aluminum, with quality factors of up to approximately 1 million. We present more detailed characterization results of the TiN films including the substrate-metal interface.

Matthias Steffen  
IBM

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