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Developing TiN resonators with high kinetic inductance PENG XU, YANIV ROSEN, ARUNA RAMANAYAKA, BAHMAN SARABI, JAIM IFTEKHAR, KEVIN OSBORN, Laboratory for Physical Sciences, College Park, MD — Titanium nitride (TiN) has recently become a material of interest in the superconducting resonator and quantum computing communities due to its high quality factors and high kinetic inductances. By introducing an RF-induced DC voltage bias to the substrate during growth, we have found a reliable method of sputtering superconducting TiN. With optimized bias voltage and thickness, we have fabricated resonators where the kinetic inductance is over ten times greater than the geometric inductance. We report on progress towards increasing this value while maintaining high quality factors.

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