



## Design, fabrication, and testing of a TiN/Ti/TiN trilayer kinetic inductance detector array for 3 mm CMB observations

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Kinetic inductance detectors (KIDs) are a promising technology for astronomical observations over a wide range of wavelengths in the mm and sub-mm regime. Simple fabrication, in as little as one lithographic layer, and passive frequency-domain multiplexing, with readout of up to  $\sim 1000$  pixels on a single line with a single cold amplifier, make KIDs an attractive solution for high pixel-count detector arrays. We are developing an array that pushes KIDs' present low-frequency limit to expand their usefulness in mm-wave applications, with a particular focus on CMB B-mode measurement efforts in association with the QUBIC telescope. We have designed, fabricated, and tested a 20-pixel prototype array using a simple quasi-lumped microstrip design and pulsed DC reactive magnetron sputtered TiN/Ti/TiN trilayer resonators, optimized for detecting 80-100 GHz (3 mm) signals. Here we present a discussion of design considerations for the array, as well as resonator characterization measurements.