

Abstract Submitted
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Broad-band Cryogenic Microwave Filtering Scheme for Operating Devices at Sub 0.1 Kelvin Temperatures KRISTEN HERRMANN, ANDREI KOGAN, University of Cincinnati, KOGAN GROUP TEAM — We developed compact low-pass filters for transport experiments with single-electron devices at temperatures below 0.1 Kelvin. The filter assembly consists of a coil made of a long thin copper wire placed in a chamber filled with stainless steel powder. The transmission of the filter at frequencies between 40 MHz and 20 GHz was measured using a Vector Analyzer (Anritsu Lightning) with a characteristic impedance of 50 Ohm. Our designs show significant reduction of the test signal at frequencies 2 GHz and above. The filter design, construction, and selection of the optimal parameters will be discussed.

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