A TES Bolometer for THz FT-Spectroscopy

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Abstract — We recently reported on a Transition Edge Sensor (TES) composite bolometer for Fourier Transform spectroscopy which was designed, built and characterized. The design is based on a superconducting thermistor with SQUID readout, SiN membrane technology and a thin film metal mesh absorber which is optimized for the spectral range from 0.1 THz to 3 THz. A noise equivalent power (NEP) of 3.8×10^{-13} W/Hz$^{0.5}$ was achieved with a linear dynamic range of at least four orders of magnitude.

Keywords (Index Terms) — Bolometer, absorber, TES, teraherz, spectrometer, Fourier transform.