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Title:Multi-channel terahertz grating spectrometer with quantum-cascade laser and microbolometer array

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Abstract:We report on a terahertz absorption spectrometer, which combines a grating monochromator, a quantum-cascade laser (QCL), and a microbolometer camera. The emission modes of the laser are spectrally resolved by the monochromator and imaged onto the camera. An absorption cell is placed between the QCL and the monochromator, and the absorption spectrum of methanol around 3.4 THz is measured by integrating simultaneously the signal of each of its Fabry-Pérot;rot modes as a function of the laser driving current. The frequency coverage of the spectrometer is about 20 GHz.

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