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Title: Heterodyne Mixing of Sub-Terahertz Output Power from Two Resonant Tunneling Diodes Using InP Schottky Barrier Diode
Author: Suzuki, S Karashima, K Ishigaki, K Asada, M
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Abstract: We report on the heterodyne of output powers from GaInAs/AlAs resonant tunneling diodes (RTDs) oscillating at around 430 GHz using a Ni-InP Schottky barrier diode (SBD) integrated with a bow-tie antenna. The RTDs have approximately the same frequencies and total output powers of 430/435 GHz and 145/148 mu W, respectively. The full width at half maximum of the linewidth of the detected signal was 5 MHz. From this result, the linewidth of each RTD was estimated to be 2.5 MHz. The obtained linewidth was theoretically discussed.