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[402] Integrated THz emission and detection in thin-film lithium niobate

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Recently integrated THz detectors based on nonlinear polymers have shown high-sensitivity electric field measurements well-suited for quantum sensing. To expand its application for example to telecommunications a platform combining the ability of detection and emission of signals in the THz-frequency range is required. Since optical rectification - the typical nonlinear THz generation process - has a quadratic dependency on the pump signal, the low power resistance of nonlinear polymers prevents the development of efficient integrated on-chip emitters. Therefore want to combine this design with a more stable nonlinear material using the platform of thin-film lithium niobate for on-chip THz emission and detection.

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