Dispersive QPM-SHG from $\chi^{(2)}$ nonlinear photonic crystal of LiNbO_3 with tetragonal symmetry

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Abstract: We observe space dispersive, second harmonic green generations from a 2D QPM-periodically poled LiNbO_3 pumped by a Nd:YAG laser. The angular-tuning and phase-matching temperature analyses reveals a simultaneous quasi-phase-matching mechanism up to five reciprocal lattice vectors in the 2D $\chi^{(2)}$ nonlinear photonic structure of tetragonal symmetry.

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