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Title:Terahertz beat frequency generation from two-mode lasing operation of coupled microdisk laser
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Abstract:We propose a coupled microdisk laser as a compact and tunable laser source for the generation of a coherent continuous-wave terahertz radiation by photomixing. Using the Schro¨dinger-Bloch model including the nonlinear effect of active medium,we find single-mode and two-mode lasings depending onthe pumping strength.We explain the transitions of lasing modes in terms of resonant modes that are the solutions of the Schro¨dinger-Bloch model without active medium and nonlinear interaction. In particular, a two-mode lasing is shown to generate a terahertz oscillating frequency originating from the light beating of two nearly degenerated resonant modes with different symmetries. © 2012 Optical Society of America.
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