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Abstract:We demonstrate four-wave mixing in silicon-on-insulator coupled-resonator optical waveguides consisting of 35 and 65 microring resonators, using a cw pump with coupled power below 20mW and observed parametric conversion across more than 10 THz. The conversion efficiency is enhanced by +16 dB relative to a silicon straight waveguide of equivalent length, due to the slowing factor of the coupled-resonator structure. © 2011 Optical Society of America.