

Abstract Submitted
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Ultrasound Generation from Arrays of Microcavity Plasmas JINHONG KIM, SUNG-JIN PARK, GARY EDEN, University of Illinois, Department of Electrical and Computer Engineering — The generation of ultrasound (20 – 250 kHz) by arrays of microcavity plasmas has been demonstrated. When the microplasmas are excited by a sinusoidal voltage (20 – 60 kHz), harmonics as high as $m = 12$ are detected by a condenser microphone. Each of the ultrasound harmonics matches the harmonics observed in the Fourier representation of the microplasma array current. The intensity of ultrasound can be adjusted by altering the geometry of the microcavity plasmas. Due to the limited bandwidth of the condenser microphone, the highest detectable frequency of in these experiments is 250 kHz at present. As an alternative to microphone detection, a modified Michelson interferometer has been constructed and has successfully detected ultrasound emission from the plasma arrays at frequencies up to 400 kHz.

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