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Plasma Photonic Crystals using Arrays of Microplasma Jets Devices HEE JUN YANG, JINHONG KIM, SUNG-JIN PARK, J. GARY EDEN, Univ of Illinois - Urbana — Photonic crystals composed of microplasma and air can be made with arrays of microplasma jets devices. Compared to the solid-state photonic crystals, plasma photonic crystals are reconfigurable at electronic speeds. Also, both spatial period and refractive index can be controlled in plasma photonic crystals. Diameter of each microplasma jet is 400 μm and pitch to pitch distance is 1 mm and operated in He gas flow. With a distributed Bragg reflector (DBR) structure with periodicity of 1 mm, attenuation of wave occurs at 150 GHz. Calculations and characteristics of plasma photonic crystals will be discussed. Two-dimensional microplasma photonic crystals at 157 GHz have been demonstrated.

Hee Jun Yang
Univ of Illinois - Urbana

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