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Plasma Photonic Crystals for Microwave Manipulation BEN-JAMIN WANG, MARK CAPPELLI, Stanford University — A plasma photonic crystal was constructed for microwave manipulation and the performance of the device was characterized. A linear waveguide and square plasma photonic crystal was constructed from arrays of plasma glow discharge tubes. The transmission spectrums of the devices were measured and characterized. Finite difference time domain (FDTD) simulations of the designed 2D waveguide plasma devices in air were completed. The introduction of point and line defects in the plasma arrays allowed for waveguiding behavior and electromagnetic band gaps to be observed.

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