Large Arrays of Microplasmas: Science, Applications, and the Road Ahead
J. GARY EDEN, University of Illinois at Urbana-Champaign

The science and technology of microcavity plasma devices has advanced rapidly over the past 5 years. Large arrays, comprising $> 10^5$ devices, have been realized and electron number densities as large as $> 10^{17} \text{ cm}^{-3}$ have been generated reproducibly on a pulsed basis. This presentation will review briefly the characteristics of microplasmas generated within cavities as small as 10 $\mu$m. A view of future scientific opportunities will be offered and the recent discovery of a hybrid plasma/semiconductor device, based upon coupling of electron-hole and gas phase plasmas, will be reported.