Science and Technology of Microplasmas and Their Impact on Applications

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***Abstract*— Recent progress in the science and technology of low temperature plasmas confined to microcavities has provided a pathway to novel micro devices including lighting, sensors, chemical reactors, and biomedical tools. Confining plasma to small cavities or channels at atmospheric pressure changes its properties in a profound way. Such "microcavity plasmas" can be produced in various geometries and in arrays numbering hundreds of thousands of plasmas fabricated into sheets. This presentation will discuss the progress of the microplasma technology and will demonstrate "light tiles," a new form of lighting that is flat and thin, and water disinfection systems that have been made possible by fashioning plasmas on the microscopic scale. Also, continuous evolution of this technology for various biomedical applications will be discussed.**