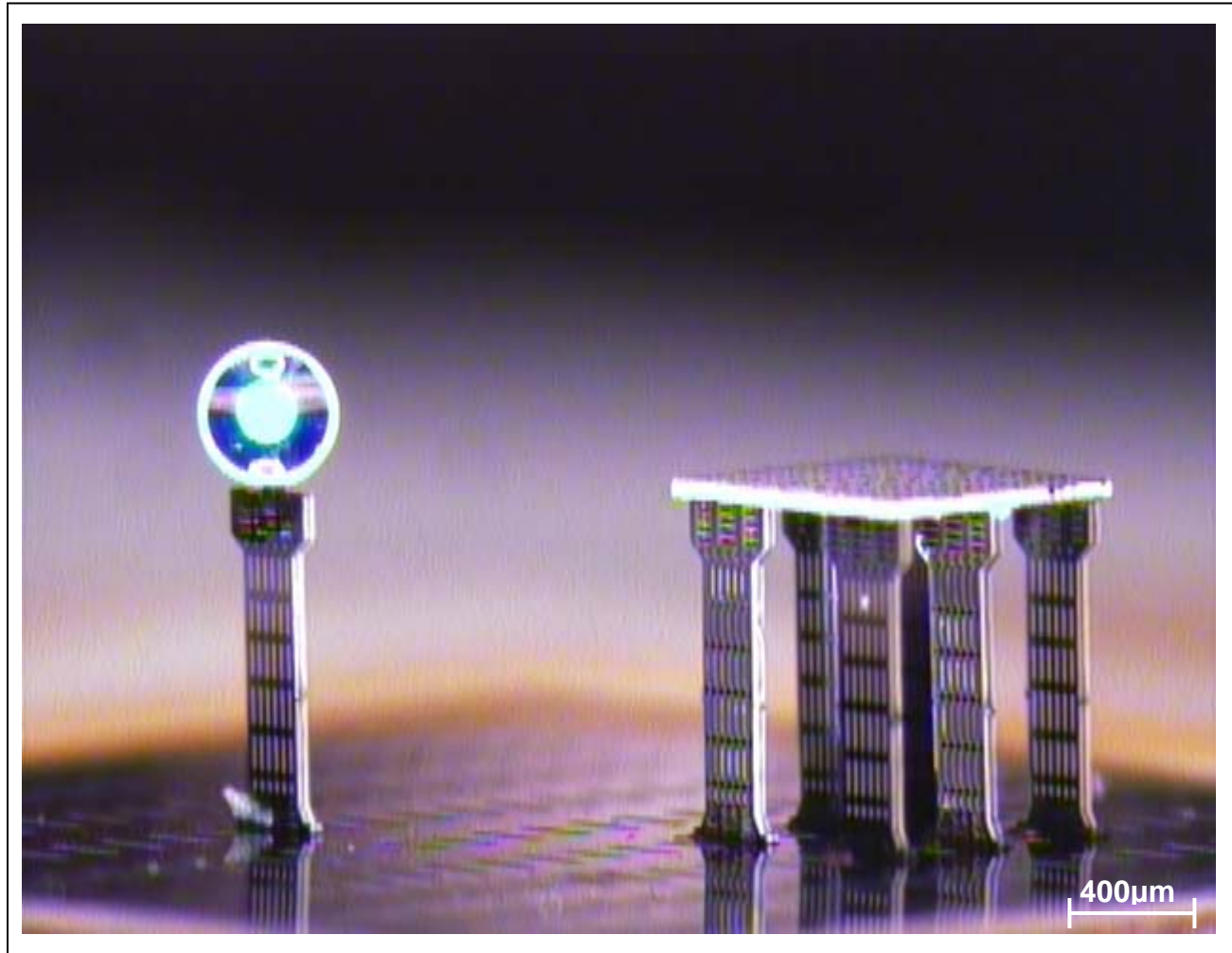


DETC2009-87523 Temple of Zeus – A micro replica

Aditya N. Das, Rakesh Murthy

Automation & Robotics Research Institute, University of Texas at Arlington, TX



Picture Description:

A miniature replica of “*Temple of Zeus*” has been built on a 1cm^2 silicon die. The micro components have been fabricated on SOI (silicon-on-insulator) wafer using photolithography patterning and DRIE (deep-reaction-ion-etching) process. These micro components have been picked up and manipulated using a vacuum micro needle mounted on a high precision microassembly robot. After alignment the components are bonded to the silicon substrate using epoxy adhesive. A spherical sapphire lens has also been mounted on a micro tower made of silicon. This lens acts as a light source which illuminates the micro temple by diffusing a ray of light onto it. This micro replica of “*Temple of Zeus*” and other micro structures as well, have been built as a part of research on automated 3D microassembly at ARRI’s *Texas Microfactory* which demonstrates the versatility in developing robust, cost efficient and heterogeneous microsystems of future.