
COLLOQUIUM

ROBOTIC BEES: OVERVIEW, ACTUATION, AND POWER

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MBG AUDITORIUM

REFRESHMENTS AT 4:00PM

This talk will present an overview of the technologies involved in the development of insect-size flying robots, from manufacturing and assembly to sensing and characterization. All of these areas present opportunities for interesting research, as there are few existing components or manufacturing techniques in the required size and weight range. Over the past 5-10 years, this research has led to the development of a “Robobee” – an 80 mg flapping-wing robot actuated by piezoelectric bimorphs, and capable of controlled hovering with >130 mg of lift.

Currently, tethers are required to provide power and control – in this presentation, progress and challenges in actuation and power will be discussed, with the goal of enabling the transition from tethered to fully autonomous flight. For example, laser annealing as a means to improved actuator energy density and batteries and solar cells as structural elements, as well as system-wide scaling considerations.