

E201/ME160 UC Berkeley Ocean Engineering Seminar

Spring 2024

Navigating the Minuscule: Biomimicry in Mobile Microrobotics

By

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Friday, March 1st, 2024, Room 3110, Etcheverry Hall,
2:30pm-4:00pm

Abstract In this talk, we explore the intersection of biomimicry and bio-inspired design in the burgeoning field of mobile micro-robotics. Drawing on two decades of innovation, we examine how learning from the movements and interactions of organisms has propelled the development of micro-robots capable of sophisticated microscale manipulations. We will address the design and power challenges these tiny robots face and how biology offers elegant solutions. The discussion will highlight three types of micro-robots: chemically powered, physically actuated, and bio-hybrid systems, showcasing the potential of biomimicry in advancing micro-robotic technologies for a range of applications.

Speaker Biography Dr. Amir Nourhani received doctorates in Chemical Engineering (2012) and Physics (2014) from the Pennsylvania State University. Since then, he has held postgraduate positions at UC Berkeley, Northern Arizona University, and UC San Diego. Currently, he is an assistant professor in the departments of mechanical engineering, biology, mathematics, and a core faculty of Biomimicry Research and Innovation Center at the University of Akron. Dr. Nourhani's research interests span theory and experiment in the fields of fluid dynamics and soft matter, particularly active and out-of-equilibrium systems, with a focus on reconfigurable and bio-hybrid micro-robots for potential biomedical, environmental and energy applications.

Hosted by: Prof. Reza Alam (reza.alam@berkeley.edu)