

# Chemical and Biomolecular Engineering

## *Fall 2009* Seminar Series

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### “Chemotaxis of Non-Biological Particles”

#### Abstract

For bacteria and microscopic organisms, randomness is a key feature during movement. In recent years we and other researchers have begun to fabricate artificial microscopic motors, often out of metallic or bi-metallic particles. The goal has usually been to obtain directed motion, avoiding randomness, and so the movement is often by electric fields or magnetic fields for instance. But sometimes it seems useful to keep the random motion, so that the particles can sample a region of space, even while wanting particles to move in a directed manner. Is there a way to have macroscopic directed motion, with microscopic random motion of the particles? In this talk we will explore possibilities for accomplishing this goal, including methods of fabricating the motors and modeling their motion. We will draw parallels to bacterial chemotaxis, phototaxis, and quorum sensing, for non-biological motors.

Wednesday, October 7, 2009, 3:00 P.M.  
Wu and Chen Auditorium, Levine Hall

