

Abstract Submitted  
for the MAS15 Meeting of  
The American Physical Society

**Designing self-phoretic colloids and active swimmers**<sup>1</sup> AMIR NOURHANI, PAUL E. LAMMERT, Penn State University — The emerging field of powering at nanoscale began around 2004 with the discovery of self-phoretic swimmers such as electrocatalytic bimetallic nanomotors. While the field is still in its infancy, the last decade has witnessed a remarkable progress in designing different kinds of nanomotors. These autonomous movers typically harvest energy from their environment to sustain their deterministic locomotion. Within a unified formulation, encompassing self-electrophoresis, self-diffusiophoresis, and self-thermophoresis, generic performance characteristics of self-phoretic particles as a function of geometrical design — particle shape and source/sink distribution — are studied within the family of spheroids, both oblate and prolate.

<sup>1</sup>This work was supported by the NSF under grants No. DMR-0820404 and DMR-1420620 through the Penn State Center for Nanoscale Science.

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Date submitted: 02 Oct 2015

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