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Understanding Cooperative Chirality at the Nanoscale SHANGJIE YU, PENGPENG WANG, Department of Physics, University of Maryland, College Park, ALEXANDER GOVOROV, Department of Physics and Astronomy, Ohio University, MIN OUYANG, Department of Physics, University of Maryland, College Park — Controlling chirality of organic and inorganic structures plays a key role in many physical, chemical and biochemical processes, and may offer new opportunity to create technology applications based on chiroptical effect. In this talk, we will present a theoretical model and simulation to demonstrate how to engineer nanoscale chirality in inorganic nanostructures via synergistic control of electromagnetic response of both lattice and geometry, leading to rich tunability of chirality at the nanoscale. Our model has also been applied to understand recent materials advancement of related control with excellent agreement, and can elucidate physical origins of circular dichroism features in the experiment.

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