



SEMINAR SERIES



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Tuning Multimetallic Phosphide Nanorods and Hetero-Nanostructures for Electrocatalysis

The design of nanostructured catalysts with controlled composition and interfaces is essential for advancing energy conversion technologies. In this talk, a unified strategy that combines programmable synthesis with interface engineering will be presented. First, a seed-mediated approach enables the synthesis of multimetallic phosphide nanorods (CoMP_x, M = Fe, Ni, Mn, Cu) with tunable composition and well-defined one-dimensional structures via core/shell intermediates and solid-solution conversion, providing a platform to systematically study composition–property relationships. Building on this foundation, modular multi-interface nanocrystals (Co₂P/Pd–Au) is demonstrated for ethanol oxidation electrocatalysis. The Co₂P/Pd interface enhances catalytic kinetics and Pd utilization, while the Pd–Au interface mitigates CO poisoning, resulting in outstanding activity and stability. Together, this talk highlights how programmable synthesis and interface design can be integrated to develop high-performance catalysts for sustainable energy applications.

Thursday, March 26, 2026 - 11:30 a.m.

Darrah Auditorium

(McCreary Hall Room 101)

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