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Presentation: Late News - Hot Topic Oral Presentation

Symposium: **ES05: Cooperative Catalysis for Energy and Environmental Applications**

Abstract Title: Bioinspired Hard-soft Matter Interfaces for Applications in Cooperative Electrocatalysis and Photoelectrosynthesis

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Abstract Body:

Human-engineered systems capable of generating fuels from sustainable energy sources provide an approach to satiating modern societies' energy demands, with minimal environmental impact. Strategies to address this challenge for science and the imagination often draw inspiration from the biological process of photosynthesis that powers our biosphere and supplied the fossil fuels global economies rely on. In this context, the active sites of enzymes have inspired researchers to develop molecular complexes that capture key structural and functional principles of nature's catalysts. However, not all aspects of biological energy transducing systems are or should be targets of chemical mimicry in designing an artificial photosynthesis, and some of the more favorable properties associated with solid-state heterogeneous catalysts have motivated molecular based surface-modification strategies. In this presentation, I will discuss efforts from our research group to develop heterogeneous–homogeneous architectures that combine the form factors of their underpinning solid-state supports with molecular coatings, enabling cooperative control and tunability of physical properties.¹⁻⁶

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[6] D. Khusnutdinova, B. L. Wadsworth, M. Flores, A. M. Beiler, E. A. Reyes Cruz, Y. Zenkov, G. F. Moore, *ACS Catal.*, 8, 9888–9898 (2018); DOI: 10.1021/acscatal.8b01776.