
The 189th iCeMS SEMINAR

Fri 31 Jul 2015
16:00-17:30

Designer Interfaces for Energy Storage and Recovery

Lecturer: **Dr Yogesh Surendranath**
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Venue: **Room A2-307**
Katsura Campus, Kyoto University

The widespread utilization of renewable energy will require energy dense and cost-effective methods for storage. This challenge could be met by coupling renewable electricity to the reduction of carbon dioxide and/or protons to fuels and the oxidation of water to O₂, providing, in net, a viable scheme for artificial photosynthesis. Likewise, the resulting fuels could be recombined in a fuel cell to comprise a net carbon-neutral cycle for energy storage and recovery. Realizing these goals requires the development of new electrocatalysts with enhanced selectivity, efficiency, and durability. We adopt a bottom-up approach to the design and discovery of new electrocatalysts that emphasizes controlling surface structure with atomic and molecular precision. The approach has led to the discovery of a new earth-abundant catalyst for oxygen reduction to water and the elucidation of key design principles for the efficient reduction of CO₂ to fuels. Our latest findings in both of these areas will be discussed.

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Hosted by: iCeMS (Institute for Integrated Cell-Material Sciences), Kyoto University

