

# UniSysCat Colloquium

Prof. Yang Shao-Horn

Massachusetts Institute of Technology

Start Time: Wednesday, October 6, 2021 05:00 pm

End Time: Wednesday, October 6, 2021 06:00 pm

Online

## Scientific Challenges Towards Mitigating Climate Change

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There is an urgent need to reduce our global carbon dioxide emissions to mitigate climate change. While low-cost electricity from solar and wind provides exciting opportunities to reduce emissions, converting electricity to efficient carbon-free or carbon-neutral energy carriers at scale such as stored electrons, fuels and heat remains challenging to deep decarbonization. Electrochemical reactions are central to electrification via batteries, electrolysis in making chemicals, fuels and materials, and negative emission technologies, which represent three important capabilities to connect electricity with our energy demands. Fundamental research on surface and molecular sciences, electron/ion transfer, and ion transport is instrumental to address scientific challenges and make breakthroughs in the core technologies such as lithium batteries and production of hydrogen-based carriers and metals.

In this lecture, we will address scientific challenges and recent progress in regulating surface oxygen activity and tuning interfacial hydrogen bonds to enhance the functions of lithium batteries, and electrocatalysis of water splitting.

Prof. Dr. Beatriz Roldan Cuenya

Organizer