

Colloquium Thermo- and Fluid Dynamics

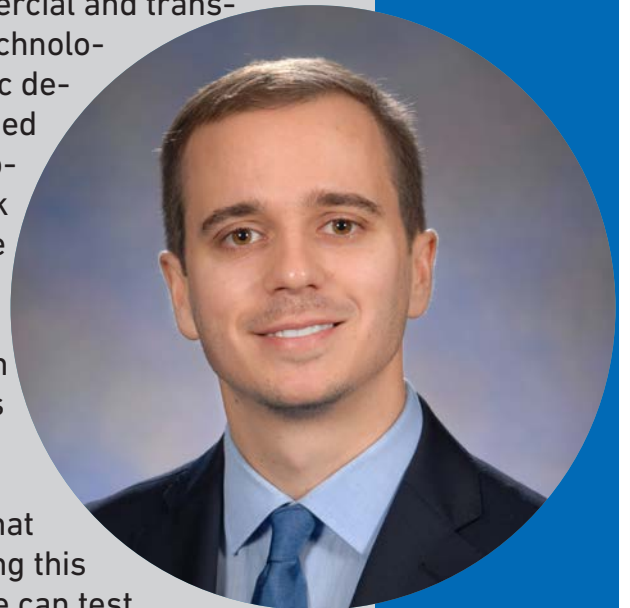
Solar Energy Conversion and Storage by Splitting H₂O and CO₂

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Solar energy is a vast and energy rich resource, capable of providing clean, renewable, and sustainable energy to residential, commercial and transportation sectors. While commercial solar conversion technologies, such as photovoltaic modules, have seen a dramatic decrease in cost over the last several decades, they still need to be integrated with relatively expensive storage technologies because of sunlight's intermittent nature. This talk describes the work we are doing in our laboratory to use solar thermal heat (i.e. brute force!) to split H₂O and CO₂ into H₂ and CO, long-duration energy storage vectors that can be used directly to produce power, such as H₂ in fuel cell electric vehicles, or as precursors to liquid fuels synthesis. In our lab we are focused on understanding the fundamental thermodynamic and kinetic limitations that govern this chemistry, discovery of new materials that can help promote the reactions more efficiently, and using this understanding to develop scalable solar reactors that we can test at the University of Florida's High Flux Solar Simulator Laboratory.



Date: Wednesday, 2 November 2022

Time: 16:15 - 17:15h

Place: ETH Zurich, ML F 36

Host: Prof. Aldo Steinfeld, PREC