

Batteries versus Electrogenerated Fuels

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Abstract

Energy from renewable sources may be stored as liquid fuels or in batteries, both technologies are becoming more important as we face increases in atmospheric CO₂ levels along with increasing prices for fossil fuels. Both storage methods also have fundamental and practical limitations. For example, the efficiency of converting raw feedstocks like CO₂ and water to liquid fuels is low, and conventional batteries provide relatively low vehicle ranges. In this talk, we discuss the needs for energy storage, recent advances in lithium-ion batteries (particularly new types of silicon anodes) and the potential to electrochemically generate (energy dense) fuels such as methanol from the electrochemical reduction of CO₂ at high efficiencies.

Biography

John Flake currently serves as the Affolter Professor Chemical Engineering at Louisiana State University. He holds a Ph.D. in Chemical Engineering from Georgia Tech and has worked at industrial labs including IBM's T.J. Watson Research Center and Motorola's APRDL Center.