

Chemical Sciences Seminar Series

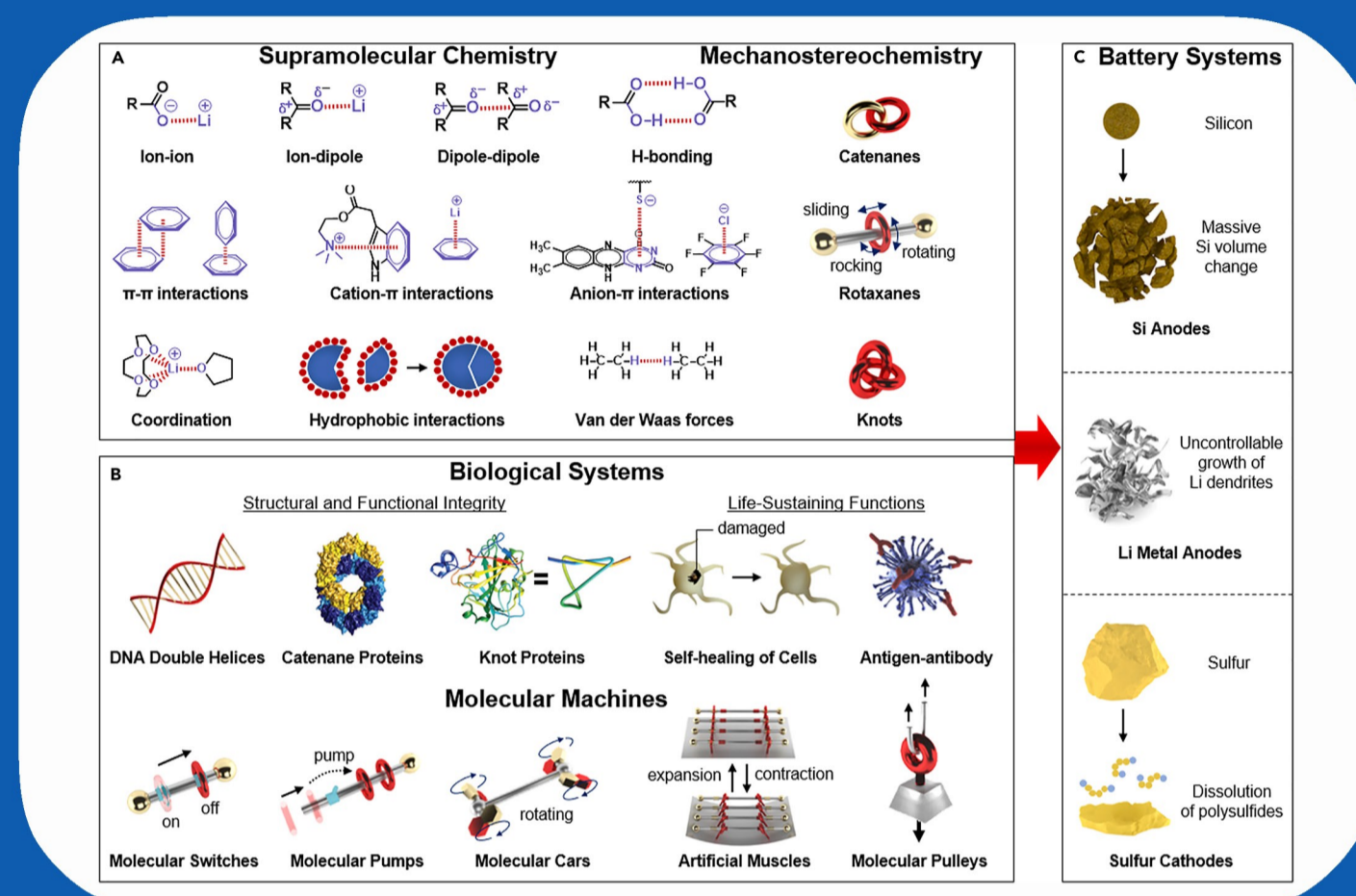
Tailoring Supramolecular Polymers for High Capacity Electrodes in Lithium-Ion Batteries

Virtual Venue: May 27 2021, 19:00 - 20:00 (GMT +3), Zoom Meeting ID: 984 2691 2986



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Three high-energy density electrode materials – namely, silicon (Si) anodes, lithium (Li) metal anodes, and sulfur cathodes operating by alloying, electroplating, and electrochemical reactions, respectively – have gained discernable interest owing to their unparalleled theoretical capacity. Nevertheless, these electrode materials entail new intrinsic drawbacks such as massive volume change for Si, uncontrollable lithium dendritic growth for Li metal, and the formation of soluble lithium polysulfides as well as their shuttling for sulfur cathodes. Accordingly, supramolecular chemistry and/or mechanically interlocked molecules/polymers such as rotaxanes and/or supramolecular polymer networks can play a pivotal role to address these challenges facing rechargeable batteries. In this presentation, the concepts of supramolecular chemistry and their working principles in high energy density electrode materials in Li-ion batteries will be discussed.



Live Stream:

<https://www.youtube.com/c/TUBITAKTBAE>