# Li and Na Organic Batteries with Porphyrinoid Electrodes

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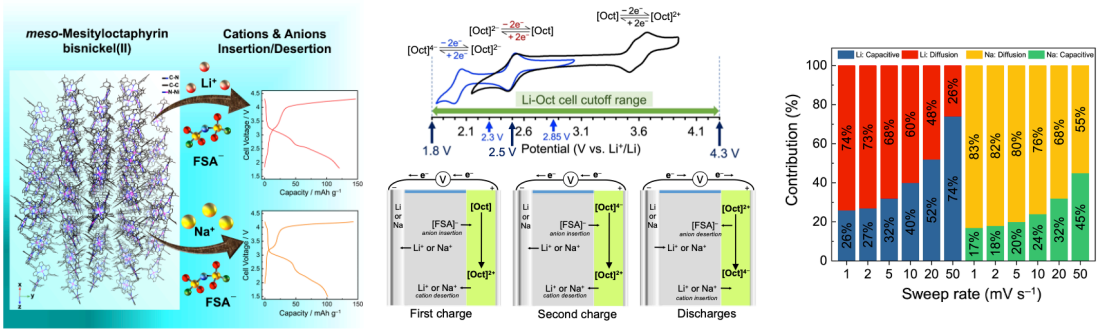
A recent demand to accomplish superior rechargeable batteries is to seize efficient organic electrode materials for conserved and producible cell performances. In the spotlight on structural diversity, tunability, and persistency of organic electrode materials, specific π-conjugation platforms comprising multiple oxidation states have been explored in the current study to induce electromagnetic variability/compatibility.

Our first organic battery derived from nickel(II) norcorrole (NiNc), the smallest stable antiaromatic porphyrinoid enabling gram-scale preparation, has precisely exposed significant potentials for both lithium electrode-cooperated Li-NiNc batteries and lithium electrode-dissociated NiNc-NiNc batteries.[1] The organic batteries fabricated with an inexpensive alkali metal, Na, were subsequently investigated to enhance the inherent battery potentiality in enabling efficient dual ionic charge/discharge behaviors.[2] Furthermore, we comprehend hollow spheres in variable molecular alignment derived from specific substituents onto the main skeleton influencing the kinetic quantity of the dual-ion mobility.[3] Li-organic batteries compromising immensely elongated pai-conjugated expanded porphyrinoids were investigated with [28]hexaphyrin(1.1.1.1.1.1) persuading attractive electrochemistry,[4] and the sequential electrophysical contributions of pseudo-capacitive processes over diffusion-controlled processes preceding in Li and Na organic cells were determined using ocatphyrin(1.0.1.0.1.0.1.0).[5] The Li- and Na-Oct cells induced precisely fast charge/discharge performances and long-term cyclabilities.

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