The 80th GREEN Seminar

Development of high-power dual-ion batteries that can be charged and discharged within a few minutes

Chair: Dr. Y. TATEYAMA (GREEN)

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In the search for new battery technologies with higher energy and power densities, lower cost and faster charging capability, dual-ion battery (DIB) which involves the use of both cations and anions to store energy has emerged as one of the potential candidates. In particular, graphite has been demonstrated to effectively accommodate anions such as PF_6^-. However, the high cutoff voltage above 5 V vs. Li/Li^+ on the graphite cathode leads to continuous side reactions such as electrolyte decomposition, yielding to low Coulombic efficiency (CE < 90%) and poor cycle life. In this seminar, I will first talk about our initial work to understand factors affecting the capacity and stability of anion intercalation into and deintercalation from graphite. Then, I will discuss how we engineer the electrolyte and also the cathodic electrolyte interface (CEI) to improve cycle performance and power capability of the DIB. Finally, I will talk about the current challenges and future outlooks of DIB.

Venue: Online (Zoom)

Date: May 10th, Tuesday Time: 16:00-17:00

Registration for ONLINE participation: https://forms.gle/rBoXh8JX9s4Kt9BS8

(*Registration Deadline: Evening on 9th May)

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