

ANALYTICAL SEMINAR

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Battery Research at Nazarbayev University

Lithium-ion batteries (LIBs) lead the market for portable electronics and electric vehicles. However, the current LIB technologies cannot meet the performance requirements for advanced portable devices and long-range electric transport due to their limited capacity and high cost. Along with this, the use of toxic transition metal oxides as cathode in LIBs leads to serious ecological concerns. Therefore, new alternative chemistries resolving these problems are considered, such as Li/S batteries. LIBs have also serious safety issues due to flammability of low conductive and expensive organic electrolytes, which restricts their application in large-scale energy storage, e.g. in renewable energy (wind, solar etc.) sector. Rechargeable hybrid aqueous batteries (ReHAB) have been developed with aqueous electrolytes, with low-toxicity, low cost and excellent safety. These attributes make them excellent candidates for large scale applications. The recent development of these projects will be overviewed.

Friday,
June 23
2:00 pm
Room
8335