Contribution ID: **1294** Type: **Oral**

Structural studies of lithium ion batteries on their functional characteristic

Monday 30 October 2023 14:35 (15 minutes)

The production of activated carbon (AC) from lignocellulosic biomass through chemical activation is gaining global attention due to its scalability, economic viability, and environmental ad-vantages. Chemical activation offers several benefits, including energy efficiency, reduced car-bonization time, and lower temperature requirements. In this study, potassium hydroxide (KOH) was employed for chemical activation, resulting in activated carbon with a high specific surface area of ~3050 m^2/g. The structural analysis revealed the presence of over 15% of few-layered graphene in the activated carbon matrix. X-ray diffraction (XRD) technique was employed to in-vestigate the activated carbon derived from rice husk (RH). The potential applications of activated carbon obtained from rice husks through chemical activation were explored, including its use for heavy metal removal, elimination of organic pollutants, and as an active material in hybrid energy storage devices. Furthermore, a scaling methodology for the production of activated carbon was proposed, facilitating its industrial implementation.

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Session Classification: Applied Research

Track Classification: Applied Research