

**Li₂CO₃ COATED SRI LANKAN VAIN GRAPHITE AS
RECHARGEABLE LITHIUM-ION BATTERY ANODE**

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Abstract

Modification of natural graphite has recently moved into the focus of the preparation of anode materials for lithium ion batteries. It has been reported that, modification of natural graphite by coating Li_2CO_3 formed stable SEI at elevated temperature. The Li_2CO_3 coated graphite shows lower self-delithiation in storage and better capacity retention in long-term cycling.

Recent studies on Sri Lankan natural vein graphite indicate that it has sufficient electrical conductivity to use as potential candidate for Lithium ion rechargeable batteries [7]. Li_2CO_3 coating increases the capacity of natural vein graphite.

The study aims to Li_2CO_3 coating of natural vein graphite to improve its surface structure. Different structural varieties of natural vein graphite powder were coated with Li_2CO_3 to improve its surface structure. This coating Li_2CO_3 is uniformly distributed throughout the graphite surface. According to the FTIR data, absorption peaks corresponding to the Li_2CO_3 clearly appear after the coating. Moreover, Li_2CO_3 precipitate of active sites such as the catalytic site and edge plane. Consequently, the electrical conductivity of the graphite was in same range after the modification.

Key Words: Surface Modification, Li_2CO_3 coating, Solid Electrolyte Interphase