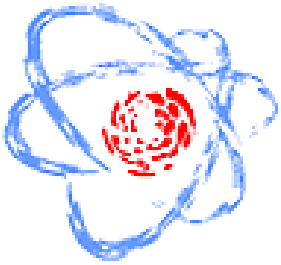

Contribution ID: **216** Type: **not specified**

Li ion batteries, anode materials

Tuesday, 7 June 2022 13:05 (10 minutes)

The rapid pace of economic development requires progressive improvements in modern energy storage devices such as lithium-ion batteries. One of the methods is the use of silicon, which in comparison with commercial carbon, has a higher efficiency in using silicon. Despite this, SiO2 has a number of disadvantages that limit its widespread use as an anode material for lithium-ionic materials associated with changes in volume during the movement of the first lithium, low electrical conductivity and short service life. To solve these disadvantages, an inexpensive and simple method is proposed for obtaining a hybrid SiO2 / C composite in a graphene shell. SiO2, carbon and graphene were obtained from biologically waste material - rice husk. The proposed inexpensive and scalable method for producing a hybrid SiO2 / C @ Graphene composite is a possible solution for creating the next generation of lithium-ion batteries. Today, lithium-ion batteries (LIB) are widely used and are an integral part of everyday human life due to their superior properties such as high energy density, long service life, high power density and low self-discharge rate . Nevertheless, the graphite used for the commercial production of LIBs, the theoretical capacity of which is 372 mAh / g, imposes significant restrictions on the manufacture of highly efficient LIBs. The development of new and / or improvement of existing technologies for the production of efficient anode materials with high specific capacity is a priority task for many research groups.

Summary

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Session Classification: Sectional talks