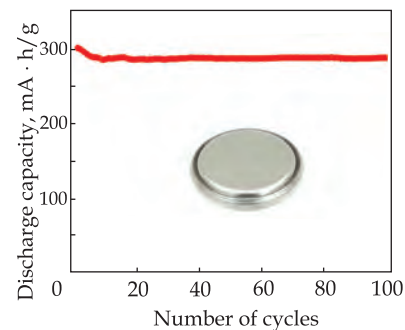


NEW HYBRID NANOCOMPOSITE CATHODE MATERIALS FOR LITHIUM ELECTROCHEMICAL CELLS



Charge-discharge cyclability of nanocomposite cathode based on polypyrrole and V_2O_5

Options for application of lithium electrochemical cells based on developed cathode materials

Areas of Application

The materials are to be used in lithium and lithium-ion batteries for different purposes, particularly, for portable electronic equipment

Advantages

As compared with counterparts, these materials have a higher specific capacity (by 25–70%), stability to degradation (the ability to withstand high current loads), and improved rate response; they are easily obtainable and cheaper

IPR Protection

IPR1, IPR3, IPR5

Specification

Hybrid organic-inorganic nanocomposites are based on conducting polymers (polyaniline, polypyrrole, and polythiophene), grapheme, and electroactive compounds of transition metals (V_2O_5 , $LiFePO_4$, etc.). The materials have a discharge capacity of 250–300 mA·h/g under long-term cycling as active component of cathodes of lithium batteries, including those with high current density

Stage of Development.

Suggestions for Commercialization

IRL3, TRL4

Samples of nanocomposite cathode materials are produced and supplied, upon request

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