Innovative eddy - current electromagnetic non-destructive non-contact method for evaluation conductivity and composition of powdered materials. Increase efficiency of electrode materials and power sources.

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The electrical conductance and composition of powdered materials can be critical parameter for efficiency the lithium batteries, supercapacitors, fuel cells, in building industry (cement), pharmacy and other areas. Innovative eddy current electromagnetic method is inherently a non-contact& non-destructive method that does not suffer from measurement error resulting from contact resistance which plagues direct-contact measurement methods. One of important direction of using this method is the quality control of nanomaterials and thin-layered materials, for which the mechanical contact could be destructive

During presentation we will illustrate how non-contact & non-destructive testing the conductivity of electrode materials that based on sulfides and oxides, and evaluation the properties of conductive additives (graphite and black) allows optimize the properties of electrode materials and final product – Li batteries.

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1. *V.I. Redko, E.M. Shembel*, etc. Method and Apparatus for Measuring Conductivity of Powder Materials Using Eddy Currents. US Patent No. 7,288,941
2. *V.I. Redko, E.M. Shembel*, etc. Method and Device for Rapid Non-Destructive Quality Control of Powdered Materials. US Patent No. 8,102,181 V.I.
3. *V.I. Redko, E.M. Shembel*. etc. Methods and Systems for Non-Destructive Determination of Fluorination of Carbon Powders. US Patent No. 8.309,024.
4. *I. M. Maksuta, A. V. Markevych, L. I. Neduzko, N. D. Zaderey, E. M. Shembel* Method producing the modified active cathode material for lithium-ion batteries. Ukrainian Patent application # a 2015 00834