

**MATERIALS RESEARCH SOCIETY of SERBIA
INSTITUTE of TECHNICAL SCIENCES of SASA
VINČA INSTITUTE of NUCLEAR SCIENCES, UNIVERSITY of BELGRADE
HYDROGEN STORAGE INITIATIVE SERBIA**

PROGRAM AND THE BOOK OF ABSTRACTS

**JOINT EVENT OF THE 11TH YOUNG RESEARCHERS' CONFERENCE: MATERIALS
SCIENCE AND ENGINEERING**

AND

**THE 1ST EUROPEAN EARLY STAGE RESEARCHERS' CONFERENCE ON HYDROGEN
STORAGE**

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Jasmina Grbović Novaković
Nenad Ignjatović**

Joint event of the 11th Young Researchers' Conference: Materials Science and Engineering and the 1st European Early Stage Researchers' Conference on Hydrogen Storage

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NEW FACILE SYNTHESIS ROUTE FOR OBTAINING PHASE PURE LiFePO₄/C COMPOSITE

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Carbon-coated, olivine-structured LiFePO₄ suitable for cathode material in rechargeable lithium batteries has been prepared via simple, both time and energy low-consuming synthesis route. Procedure involves soaking of cellulose-containing substrate with aqueous precursor solution followed by rapid (several minutes long) single heating step. Cellulose acts as (i) reducing agent and (ii) carbon source which suppresses growth and prevents agglomeration of LiFePO₄ particles and also creates a conductive network in LiFePO₄/C composite. The crystalline structure, morphology and charge/discharge performance of the as-prepared composite were investigated by means of XRD analysis, electron microscopy and galvanostatic charge-discharge tests. LiFePO₄/C powder appears to be nanocrystalline (with mean crystallite size of 37 nm) and electrochemically stable achieving 97% (165 mAhg⁻¹) of its theoretical capacity.

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