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Electrochemical alternative energy microstructure fractal perspectives

Vojislav Mitić[1, 2], **Vesna Paunović**[1], **Ljubiša Kocić**[1], **Filip Bastić**[1,2] **Marjanovic** and **Zlatanovic**
[1]University of Nis, Serbia
[2]Serbian Academy of Science and Art, Serbia

It is well known that the microstructure processes influence is very important for electrochemical energy generation. Wordls interest race to develop the new batteries systems, especially based on lithium-ion technologies, are in the research and development focus. Simultaneously, in electric cars technologies development the battery systems getting the increasing role from the point of view how meny times in electrochemical reactions we can perform recharging. Also, beside the electrochemical processes and recharcgable speed the storage capacity has special significance. Based on our previous research in the field of ceramics, generally materials science, enriched by the fractal nature analysis, in this paper we contribute in some fundamental electrochemical laws through fractal corrections in relevant formulas. In that sense, we based this on experiments with BaTiO3-ceramics and different additives (CaZr2O3, Er2O3, Ho2O3, MnCO3, Nb2O5 and Yb2O3) consolidated under the pressing pressure up to 150 MPa and processed in the temperatures from 1190oC to 1380oC. The SEM and EDS analysis are performed. Fractal nature microstructure analysis directly from experiments confirmed new frontiers in direction of electrochemical fractal microelectronics.

Biography

Vojislav Mitic in 1995 has completed his PhD from University of Nis (Serbia). He is a Full Professor at University of Belgrade and Nis. In1995-2006, he was the Director of Electronic Industry Corporation, Serbia – Ei. He has published more than 200 papers in reputed journals and has been serving as an Editorial Board Member of repute. He is a Scientific Adviser at the Institute of Technical Sciences of the Serbian Academy of Sciences and Arts. He is a member of European Academy of Sciences and Arts, member of World Academy of Ceramics and President of Serbian Ceramics Society.

vmitic.d2480@gmail.com

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