



Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION X
New Frontiers in Multifunctional Material Science and Processing

Serbian Ceramic Society
Institute of Technical Sciences of SASA
Institute for Testing of Materials
Institute of Chemistry Technology and Metallurgy
Institute for Technology of Nuclear and Other Raw Mineral Materials

PROGRAM AND THE BOOK OF ABSTRACTS

Serbian Academy of Sciences and Arts, Knez Mihailova 35
Serbia, Belgrade, 26-27. September 2022.

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Fabrication of silver-decorated zinc oxide microrods by hydrothermal method

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We report on hydrothermal synthesis of zinc oxide (ZnO) hexagonal microrods and microtubes. Zinc oxide seeds were deposited onto glass slides by dip coating and used as templates for hydrothermal growth of ZnO microcrystals. The process was carried out in an alkaline reaction medium with acetate and nitrate zinc precursors, using hexamethylene tetramine (HMT) as surfactant. The obtained ZnO microrods were successfully decorated with silver particles via dipping ZnO-containing glass slides in silver nitrate solution and subsequent UV irradiation (5 min). Zinc oxide and Ag/ZnO microparticles were characterized by SEM, EDS and XRD. The presented results are part of the larger concept of developing of anisotropic Ag/ZnO microrods for conversion of chemical to mechanical energy.

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Osteogenic process in subcutaneously implanted bioceramic-based scaffolds loaded with glucocorticoid-treated macrophages

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The use of bioceramic biomaterials can be helpful in bone defects healing process, which can be improved by combining biomaterials with specific cells. Macrophages are cells that, depending on their functional state, can significantly influence the outcome of the tissue response to implanted biomaterials and osteogenic process. Macrophages' functional state can be modulated by various agents which can direct macrophages toward pro- or anti-inflammatory state. Glucocorticoids can affect macrophages by directing them to support tissue repair process. The aim of our study was to examine the effect of addition of glucocorticoid-treated macrophages to the bioceramic-based scaffold on the osteogenic process in mice subcutaneous implantation model *in vivo*. For this purpose, implants made of bioceramic-based scaffold, glucocorticoid-treated mice peritoneal macrophages and blood