Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION IX
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, 20-21. September 2021.

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Prof.dr Vojislav Mitić
Dr Lidija Mančić
Dr Nina Obradović

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INV

Influence of the water flow lens system on performances of the different laboratory made Sb_2S_3-based and commercial solar cells

Vesna Lojpur and Ivana Validžić

Department of Atomic Physics, Vinča Institute of Nuclear Sciences, National Institute of the Republic of Serbia, P.O. Box 522, 11001 Belgrade, University of Belgrade, Serbia

Here, the behavior of different types of solar cells at a low light intensity, measured with and without using the water flow lens (WFL) system is investigated. This system enables the cooling of the surface of the solar cell/modules/panels, indirectly cooling the surrounding, and allows investigating of the influence of higher or lower intensities of the light with the inevitable change in the spectrum. All of these effects are very important and can greatly contribute to the better photovoltaic performance of the observed cells. In this study, laboratory-made and commercial solar cells were studied at 5 % sun and (or) 35 % sun using a tungsten and halogen lamp, respectively. Comparing the obtained results performed when the WFL system is used and left out, it was confirmed that the WFL system facilitates obtaining better photovoltaic properties for all investigated solar cells.

INV

Cobalt-based catalysts in catalyticoxidationoftartrazine activated by Oxone®

Sanja Marinović, Tatjana Novaković, Tihana Mudrinić, Nataša Jović-Jovičić, Marija Ajduković, Aleksandra Milutinović-Nikolić, PredragBanković

University of Belgrade – Institute of Chemistry, Technology and Metallurgy, Department of Catalysis and Chemical Engineering, Njegoševa 12, 11000 Belgrade, Republic of Serbia

Two different types of cobalt-based catalysts were synthesized and tested as Oxone® activators in catalytic oxidation of model dye, tartrazine. First type of catalyst was cobalt impregnated aluminum pillared montmorillonite, and the second one was cobalt-doped alumina. Aluminum pillared montmorillonitewas synthesized from Na-exchanged Wyoming clay and impregnated with cobalt using incipient wetnessimpregnation method. Cobalt-doped alumina catalysts were synthetized using the sol-gel method. Three calcination temperatures were employed: 500 °C, 1000 °C and 1100 °C. The degradation of tartrazine was monitored using Thermo Scientific Evolution 220 UV–Visible Spectrophotometer in the wavelength range from 200–600 nm.In this wavelength range the monitoring of decolorization, along with registering the emergence, followed by degradation,ofdetectable degradation products was achieved.The effect of the different reaction parameters on decolorization and degradation efficiency was tested, includingtheinfluence of the mass of catalyst, reaction temperature and initial pH. It was found that the increase of temperature and the mass of