



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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Structural, magnetic and photocatalytic properties of ZnO nanopowder

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Removal of organic pollutants from the waste water will be the most challenging objective in the future. The photodegradation using the zinc oxide (ZnO) is one of the most promising materials due to low price and high efficiency. Zinc oxide nanoparticles were synthesized by self-propagating room temperature reaction of zinc nitrate with sodium hydroxide. After reaction powder was calcinated at 1100°C for 4 h in furnace. The diffraction patterns were recorded at room temperature and atmospheric pressure in the absence of any re-heating of the samples. The temperature dependence of magnetization was measured in the field of 1000 Oe and temperature range from 2 to 300 K using MPMS5 SQUID magnetometer. Photocatalytic properties were determined using the degradation of organic dye Methylene Blue (MB). Hg UV lamp was used for irradiating the solution of MB and ZnO nanopowder. The photodegradation of MB was monitored by decreasing 664 nm peak during 120 min, after this period of time we observed 95% of reduction from the starting dye concentration. Nanopowder of ZnO shows strong photocatalytic performance and can be used for further investigation and applications.