



Serbian Ceramic Society Conference
ADVANCED CERAMICS AND APPLICATION XI
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, 18-20. September 2023.

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1000 and CoA-1100 can explain the differences in their activity as catalysts in investigated reaction. Both cobalt-doped alumina catalysts were found to be efficient in the degradation of Orange G in the presence of Oxone.

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Simultaneous degradation of two textile dyes Orange G and Basic blue 41

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Cobalt-doped alumina catalyst was tested in peroxymonosulfate-induced degradation of two textile dyes: anionic-Orange G (OG) and cationic-Basic Blue 41 (BB). Oxone®, mixed salt containing peroxymonosulfate as an active component, was used as an oxidizing agent. Catalytic tests were performed in a thermostated reactor equipped with a mechanical stirrer. Dyes degradation was followed using a UV-Vis spectrophotometer. Characteristic peak maximum in UV-Vis spectrum was identified at $\lambda=478$ nm for OG, and at $\lambda=609$ nm for BB. Two OG concentrations were applied: 20 mg dm⁻³ and 50 mg dm⁻³. BB concentration was 20 mg dm⁻³ in all experiments. The reaction temperature was 30 °C. Apart from simultaneous dyes degradation, single-component solution degradation tests were also performed. Both dyes were found to be degradable in single dyes systems, with OG showing a higher degradation rate. When it comes to simultaneous degradation, it was noticed that the degradation of the BB did not occur while OG was present in the system. This phenomenon can probably be attributed to the difference in the molecular structure and charge of the investigated dyes.

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