



**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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DTA/TGA/DTG and dilatometry analyses. Laboratory samples were hydraulically formed and calcined at 1100 and 1200 °C. The microstructure of the samples is recorded by SEM-EDS. The important properties of the semi-industrial probes are tested according to the EN ISO 10545 set of standards, and the tiles are judged to belong to the group that absorbs 0.5 and 3 % of water in a vacuum. The samples were subjected to the standard-defined freeze-thaw tests and found insusceptible and were found to be free of lead and cadmium. Additionally, the L*a*b* color coordinates of the products obtained from clean waste and the composite are displayed.

The convenience of using waste in other ways is sustainable management and an environmentally friendly solution by avoiding landfilling while ensuring the conservation and increased economic benefits of rare natural feldspar deposits.

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Using magnesium ferrite catalyst for degradation of acid violet 109 from aqueous solution by heterogeneous Fenton process

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Organic pollutants and their residues formed after various technological processes can be found all around us (in soil, watercourses, and air). The textile wastewaters contain many hazardous substances which have carcinogenic and mutagenic effects on living organisms. The study divides into two parts; the first part is dedicated to the synthesis and characterization of catalysts, and the second part describes the decolorization of AV 109 solution by the heterogeneous Fenton process using magnesium ferrite as a catalyst. The catalysts are synthesized by the sol-gel technique and sintered at different temperatures (500, 600, and 700 °C). Scanning Electron Microscopy reveals the morphological structure of the ferrite-based catalysts, and the size and form of the used catalysts can describe using some shape factors. Elemental analysis of the supported catalyst surfaces revealed by Scanning Energy Dispersive Spectroscopy. The effect of dye's, hydrogen peroxide's and catalyst's concentrations, pH value, and type of catalyst, on dye removal by the Fenton process was studied. The change of AV 109 concentration during the decolorization was followed using the UV-Visible spectrophotometer.