



Serbian Chemical Society
Serbian Young Chemists' Club



9th Conference of the Young Chemists of Serbia

Book of Abstracts

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The synthesis, characterization, behavior in the Briggs-Rauscher reaction, and photoluminescence properties of newly created phosphate tungsten bronzes doped with cerium and praseodymium

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Phosphate tungsten bronzes (PWBs), due to their intriguing and potentially valuable properties, have consistently garnered research attention [1]. In this study, we introduced two rare-earth metallic elements, namely cerium and praseodymium, as dopants for PWBs. This led to the successful synthesis of novel PWBs doped with cerium and praseodymium, which were subsequently subjected to various characterization techniques, including thermal analyses (TA), Fourier-transform infrared spectroscopy (FTIR), X-ray powder diffraction (XRPD), scanning electron microscopy with energy-dispersive X-ray spectrometry (SEM-EDX), and photoluminescence spectroscopy (PL).

The behavior of cerium and praseodymium doped phosphate tungsten bronzes (Ce-PWB and Pr-PWB) [2], was investigated in the Briggs-Rauscher (BR) oscillatory reaction. The alterations in the oscillatory dynamics, brought about by the incorporation of cerium and praseodymium dopants, served as a means to distinguish between these bronzes. Additionally, this approach provided a method for assessing the catalytic properties of the bronzes. Apart from their nonlinear behavior, these bronzes also exhibited photoluminescence in the visible spectrum, specifically in the blue region.

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