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Structural and Optical Features of Molybdenum-Doped Phosphate Glasses

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The study focuses on the synthesis and characterization of phosphate and borate glass systems modified with transition metal oxides such as molybdenum and tungsten. The incorporation of these oxides was found to influence the short- and medium-range structure of the glass network, leading to changes in coordination states and connectivity of structural units. Subsequent doping with europium ions was carried out to investigate the sensitization effects and energy transfer processes in isotropic glassy media. The optical and luminescence properties were examined using UV–Vis and photoluminescence. The obtained results demonstrate the role of transition metal oxide modifiers in enhancing local field effects and facilitating nonradiative energy transfer to Eu^{3+} centers, resulting in improved emission intensity and color purity. These findings contribute to understanding the structure–property relationships in oxide glasses and provide insight into the design of new luminescent materials for photonic and optoelectronic applications

Type of presence

Presence at Taras Shevchenko National University

Authors: Mr VOINALOVYCH, Artem (Taras Shevchenko National University of Kyiv); Dr TEREBILENKO, Kateryna (Taras Shevchenko National University of Kyiv); Dr ZOZULIA, Valeria (Taras Shevchenko National University of Kyiv)

Presenter: Dr TEREBILENKO, Kateryna (Taras Shevchenko National University of Kyiv)

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