



Influence of Thermal Treatment on Optical and Structure Properties of Europium-Doped SiO₂-HfO₂ Glasses

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Auteur	Zhu, Chaofeng [1], Monteil, André [2], El Jouad, Mohamed [3], Gaumer, Nathalie [4], Chaussedent, Stéphane [5]
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Résumé en anglais	<p>Eu³⁺-doped SiO₂-HfO₂ glasses for optical applications were prepared using sol-gel technology. The effect of heat treatment on structure, emission properties and decay kinetics was investigated. The results show that the energy splitting of the 7F₂ state of Eu³⁺ ions occurs for the samples sintered at temperatures >1000°C. This behavior can be explained by the fact that crystal phases are formed in those samples, which can be confirmed by X-ray diffraction analysis. Moreover, fluorescence line narrowing spectra for the samples sintered at different temperatures were measured, and the results were interpreted in terms of structural changes in the glass matrix and the Eu³⁺ bonding environment.</p>
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