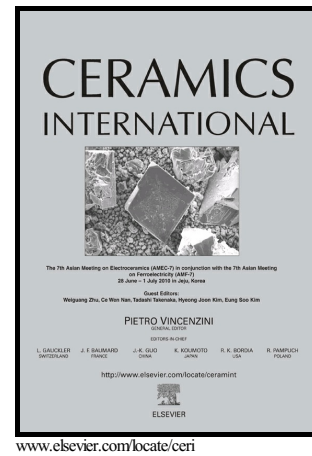


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Influence of the phosphate glass melt on the corrosion of functional particles occurring during the preparation of glass-ceramics

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Abstract

We report our findings on the impact of the glass composition on the corrosion of microparticles occurring during the preparation of glass-ceramics using the direct doping method. Microparticles (MPs) with the composition $Sr_4Al_{14}O_{25}:Eu^{2+},Dy^{3+}$ with blue-green persistent luminescence were chosen as the changes in their spectroscopic properties can be related to the MPs' corrosion. The MPs were added in phosphate-based glasses with different compositions. **When using the same doping parameters, the glass system with the composition $90NaPO_3 - 10Na_2O$ (mol%) was found to be the least corrosive on the MPs whereas the glass system with the composition $90NaPO_3 - 10NaF$ (mol%) is the most corrosive on the MPs probably due to their different viscosity at $575^\circ C$, the temperature at which the MPs are added in the glass melts.**

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