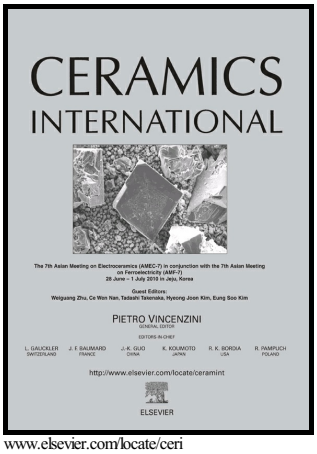

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Influence of the phosphate glass melt on the corrosion of functional particles occurring during the preparation of glass-ceramics

N. Ojha[1], T. Laihinen[2], T. Salminen[1], M. Lastusaari[2,3], L. Petit[1*]

[1]*Laboratory of Photonics, Tampere University of Technology FI-33101 Tampere, Finland*

[2]*Department of Chemistry, University of Turku, FI-20014 Turku, Finland*

[3]*Turku University Centre for Materials and Surfaces (MatSurf), Turku, Finland.*

[*]*Corresponding author. laeticia.petit@tut.fi*

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^oC***, the temperature at which the MPs are added in the glass melts.***