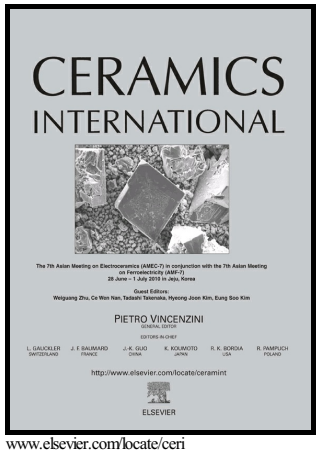

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Abstract

The precipitation of monoclinic Na_3ScF_6 nanocrystals from aluminosilicate glass with specially designed compositions of SiO_2-Al_2O_3-Na_2O-NaF-ScF_3-YbF_3 was achieved for the first time. Impressively, competitive nanocrystallization of cubic $NaYbF_4$ and monoclinic Na_3ScF_6 has been evidenced to be dependent on Na^+ content and F/Na ratio in glass. Adopting Er^{3+} and Eu^{3+} dopants as structural probes, optical spectroscopic analyses verified that these emissive centers preferred to partition into $NaYbF_4$ nanocrystals rather than Na_3ScF_6 ones.