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# Glass formation, physical and structural properties of Rb<sub>2</sub>O-Ce<sub>2</sub>O<sub>3</sub>-P<sub>2</sub>O<sub>5</sub> glass

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## Abstract

Rare earth ion (RE) - doped glass and glass ceramics are of interest for their optical, electric, and magnetic properties. Here we systematically investigated the glass formation, physical and structural properties of pure cerium metaphosphate glass to heavily rubidium-doped cerium metaphosphate glasses. The properties of the glass samples show a large dependence on the rubidium content, and we mainly focus on the impedance result which indicates a mixed electronic and ionic conductivity mechanism. The influence of the large rubidium doping on the glass properties is discussed and determined with Raman spectroscopy.

**Keywords:** Rubidium, Cerium, Phosphate glass, Conductivity

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