

Abstract Submitted
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Rb₂Ti₂O₅ a new superionic conductor REMI FEDERICCI, BRIGITTE LERIDON, STEPHANE HOLE, LPEM - ESPCI, BENOIT BAPTISTE, benoit.baptiste@impmc.jussieu.fr, FLORIN POPA, LUC BROHAN, IMN — Rb₂Ti₂O₅ is a layered material that crystallizes in the space group C2/m and whose titanium atoms present the exceptional 5-coordination. We will demonstrate remarkable highly non linear transport properties in this compound together with colossal relative dielectric constant values (10^8) and huge polarizations (0.1 C.cm^{-2}) between 200K and 330K. We will show that the mechanism at play in this material can not be conventional ferroelectricity caused by a structural phase transition. We will show instead that the electrical transport properties of Rb₂Ti₂O₅ can be explained by electromigration of some ionic species within the material creating charge accumulation at the edges of the material. This solid electrolyte is therefore an interesting candidate for supercapacitors.

Remi Federicci
ESPCI

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