



关键电子材料与器件协同创新中心
信息功能材料与器件研究中心

Electro-mechanical coupling in cubic YSZ

Dr Goran Branković, Principal Research Fellow
Institute for Multidisciplinary Research, University of Belgrade

The influence of dopant concentration and sintering parameters on properties of Sb-doped BaSnO_3 ceramics

Dr Jelena Mitrović, Research Assistant
Institute for Multidisciplinary Research, University of Belgrade

Formations of various native defects in perovskite oxides

Prof. Chul Hong Park
Pusan National University

邀请人：郑嘹赢、田甜、满振勇

报告时间：2023年9月27日 下午13:15

报告地点：嘉定园区G3第一会议室

欢迎感兴趣的老师和研究生参加！

Electro-mechanical coupling in cubic YSZ



Dr Goran Branković
Principal Research Fellow

Institute for Multidisciplinary Research
University of Belgrade
Department of Materials Science

Date: 2023 September 27

Goran Branković is a Principal Research Fellow at Institute for Multidisciplinary Research, Belgrade University.

His expertise is in the fields of Electroceramics (Varistors, Ferroelectrics, Magnetic Materials, Multiferroics), Grain Boundary Phenomena, Materials for Energy Applications (Materials for SOFC, Photovoltaics, Thermoelectrics), Nanomaterial Design and Synthesis, Sintering and Ceramics Processing, Electrochemistry; Solid State Reactions, Thin Films Deposition.

ABSTRACT: Since its discovery, the piezoelectric effect has been exclusively associated with non-centrosymmetric structures. Do we really need a non-centrosymmetric structure to get electro-mechanical coupling, i.e. piezoelectric response? In this lecture, we will show that an electrical signal caused by mechanical stress due to reorientation of cation-oxygen vacancy clusters can be obtained in cubic YSZ.

The influence of dopant concentration and sintering parameters on properties of Sb-doped BaSnO₃ ceramics



Dr Jelena Mitrović
Research Assistant

Institute for Multidisciplinary Research
University of Belgrade
Department of Materials Science

Date: 2023 September 27

Jelena Mitrović is a research assistant at Institute for Multidisciplinary Research, Belgrade University. Her research area includes linear resistors, semiconductor materials, perovskites and perovskites related materials, structural, microstructural, electrical properties of materials, grain boundary resistivity and defect structure.

ABSTRACT: The influence of antimony concentration and different sintering methods on properties of antimony-doped barium stannate, BaSn_{1-x}Sb_xO₃ (BSSO, x = 0,00; 0,04; 0,06; 0,08 and 0,10) was investigated. The conductive electroceramic samples with linear current-voltage (I-U) characteristic and constant electrical resistivity in the temperature range of 25 °C to 150 °C were obtained.

Formations of various native defects in perovskite oxides



Prof. Chul Hong Park

Pusan National University

Date: 2023 September 27

Chul Hong Park is a professor in Busan National University. His research area includes superconductor, semiconductor & device, ferroelectrics-related, magnetic materials, solar cell (perovskite), amorphous oxides, defects, optical property, dynamics and spin structure.

ABSTRACT: The defect formation in perovskite is not well-understood. The theory and calculations have not been extensively investigated. We will compare the formations of native defect between niobate and titanate based on DFT calculations. Perovskite ferroelectric oxides has both covalent and ionic character.

The interaction between O and A atoms are more ionic than those between O and Ti or Nb atoms.

Even the bonding between O and Ti or Nb atoms has both characters. The defect stability and defect structures will be discussed by considering this ionic character. Especially in the niobate, compared to titanate, the bonding between B and O atoms is more ionic. We will discuss that the antisite defects can be formed more easily in niobate.