

Title **Oxygen Surface exchange kinetics for intermediate temperature SOFC applications**

Speaker Dr. Jose Santiso
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Date & Time Friday, Sept. 21, 2012 4:00 p.m.

Place INAMORI Hall, Ito campus, Kyushu University

Abstract

The study of the kinetics of oxygen exchange in transition metal oxides is of increasing relevance not only for its direct application in resistive chemical sensors but also for the study of the fundamental mechanisms for oxygen reduction and evolution reactions (ORR/OER) of oxide catalysts and, particularly, in the search for novel cathode materials for intermediate-temperature solid oxide fuel cell (SOFC) technology.

In this talk we will describe some of the current experimental methods to determine Oxygen surface exchange processes, such as Electric Conductivity Relaxation (ECR) and ^{18}O Isotopic Exchange Depth Profiling (IEDP) experiments, as well as some novel methods, such as time-resolved XRD analysis and Electrochemical Strain Microscopy (ESM).

About the Speaker

Dr. José Santiso received his PhD in Physics from the Autonomous University of Barcelona (Spain) in 1993. He is currently the leader of the PLD and Nanionics Group at the Research Centre for Nanoscience and Nanotechnology (CIN2) in Barcelona. He has been working in deposition and characterisation of epitaxial thin oxide films of different oxide materials, particularly materials with perovskite-related structure, for more than 20 years, and has published about 115 papers in international journals. His primary focus has always been the fundamental studies of the relationship between epitaxial growth, film microstructure, epitaxial strain and the physical properties of the materials, particularly of layered oxide materials and multilayers for their use as components in intermediate temperature SOFCs. Recently, Dr. José Santiso's group, as part of the international team led by Prof. John Kilner (Imperial College London) has received the Somiya 2012 award by the International Union of Materials Research Societies (IUMRS) for their contribution in the Design of ionic and mixed conducting ceramics for fuel cell applications.

Host: Professor Tatsumi ISHIHARA

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