Vincenzo Esposito - DTU Orbit (21/09/2017)

Esposito, Vincenzo
vies@dtu.dk
Department of Energy Conversion and Storage - Professor
Ceramic Engineering & Science

Publications:

Aqueous metal–organic solutions for YSZ thin film inkjet deposition
Publication: Research - peer-review › Journal article – Annual report year: 2017

Effect of spherical porosity on co-fired dense/porous zirconia bi-layers cambering
Publication: Research - peer-review › Journal article – Annual report year: 2017

Enhanced densification of thin tape cast Ceria-Gadolinium Oxide (CGO) layers by rheological optimization of slurries
Publication: Research - peer-review › Journal article – Annual report year: 2017

Ex-situ tracking solid oxide cell electrode microstructural evolution in a redox cycle by high resolution ptychographic nanotomography
Publication: Research - peer-review › Journal article – Annual report year: 2017

NOx Selective Catalytic Reduction (SCR) on Self-Supported V-W-doped TiO2 Nanofibers
Publication: Research - peer-review › Journal article – Annual report year: 2017

Nucleophilic stabilization of water-based reactive ink for titania-based thin film inkjet printing
Publication: Research - peer-review › Journal article – Annual report year: 2016

Oxygen Permeation and Stability Study of (La0.6Ca0.4)0.98(Co0.8Fe0.2)O3-δ Membranes
Publication: Research - peer-review › Journal article – Annual report year: 2017

Releasing cation diffusion in self-limited nanocrystalline defective ceria thin films
Publication: Research - peer-review › Journal article – Annual report year: 2017

When two become one: an insight into 2D conductive oxide interfaces
Pryds, N. & Esposito, V. 2017 In : Journal of Electroceramics. 38, 1, p. 1-23
Publication: Research - peer-review › Journal article – Annual report year: 2016

Accelerated ceria–zirconia solubilization by cationic diffusion inversion at low oxygen activity
Publication: Research - peer-review › Journal article – Annual report year: 2016
Design and optimization of porous ceramic supports for asymmetric ceria-based oxygen transport membranes
Publication: Research - peer-review › Journal article – Annual report year: 2016

Editorial
Publication: Research - peer-review › Editorial – Annual report year: 2016

Fabrication of doped Titania (TiO2) nanofibers to serve as catalysts in NH3-Selective CatalyticReduction (SCR)
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

High ionic conductivity in confined bismuth oxide-based heterostructures
Sanna, S., Esposito, V., Christensen, M. & Pryds, N. 2016 In : A P L Materials. 4, 5 p., 121101
Publication: Research - peer-review › Journal article – Annual report year: 2016

Synthesis and characterization of 2D layered gadolinium-doped cerium oxide (CGO) nanomaterials
Poras Reis de Moraes, L., Marani, D., Esposito, V., Zanetti De Florio, D. & Coral Fonseca, F. 2016
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Method for producing and controlling the morphology of metal-oxide nanofiber and/or nanotube catalysts.
Publication: Research › Patent – Annual report year: 2016

Effect of chemical redox on Gd-doped ceria mass diffusion
Publication: Research - peer-review › Journal article – Annual report year: 2015

Enhancement of the chemical stability in confined δ-Bi2O3
Publication: Research - peer-review › Letter – Annual report year: 2015

Fabrication of doped Titania (TiO2) nano-catalysts in the shape of nanofibers
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Fabrication of thin yttria-stabilized-zirconia dense electrolyte layers by inkjet printing for high performing solid oxide fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2015

Fast mass interdiffusion in ceria/alumina composite
Publication: Research - peer-review › Journal article – Annual report year: 2015

Instability of supercritical porosity in highly doped ceria under reduced oxygen partial pressure
Publication: Research - peer-review › Journal article – Annual report year: 2014
Structural instability and electrical properties in epitaxial Er$_2$O$_3$-stabilized Bi$_2$O$_3$ thin films

Publication: Research - peer-review › Journal article – Annual report year: 2014

Thermo-mechanical properties of SOFC components investigated by a combined method

Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Three-Dimensional Nanofiber Cathode for Low Temperature and High Temperature Fuel Cells

Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2014

Viscoelastic properties of doped-ceria under reduced oxygen partial pressure
Teocoli, F. & Esposito, V. 2014 In : Scripta Materialia. 75, p. 82-85

Publication: Research - peer-review › Journal article – Annual report year: 2013

Viscoelastic properties of doped-ceria under reduced oxygen partial pressure
Teocoli, F., Ni, D. W. & Esposito, V. 2014

Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2014

A method for the densification of ceramic layers, especially ceramic layers within solid oxide cell (SOC) technology, and products obtained by the method
Esposito, V. 2013

Publication: Research › Patent – Annual report year: 2013

Camber Evolution and Stress Development of Porous Ceramic Bilayers During Co-Firing

Publication: Research - peer-review › Journal article – Annual report year: 2013

Densification and grain growth during sintering of porous Ce$_{0.9}$Gd$_{0.1}$O$_{1.95}$ tape cast layers: A comprehensive study on heuristic methods

Publication: Research - peer-review › Journal article – Annual report year: 2013

Enhanced mass diffusion phenomena in highly defective doped ceria

Publication: Research - peer-review › Journal article – Annual report year: 2013

Influence of porosity on densification and grain growth kinetics of Ce$_{0.9}$Gd$_{0.1}$O$_{1.95}$ tape

Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Modeling sintering of multilayers under influence of gravity

Publication: Research - peer-review › Journal article – Annual report year: 2013

Shape distortion and thermo-mechanical properties of dense SOFC components from green tape to sintered body

Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2014
Shape distortion and thermo-mechanical properties of SOFC components from green tape to sintering body
Teocoli, F., Ni, D. W., Tadesse Molla, T., Brodersen, K., Ramousse, S., Frandsen, H. L. & Esposito, V. 2012
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Strain induced ionic conductivity enhancement in epitaxial Ce0.9Gd0.1O2.22d
Publication: Research - peer-review › Journal article – Annual report year: 2012

Analysis of Key Factors Controlling Sintering of Dense and Porous CGO Bi-layers
Tadesse Molla, T., Frandsen, H. L., Esposito, V., Bjørk, R., Foghmoes, S. P. V., Olevsky, E. & Pryds, N. 2011
Publication: Research › Poster – Annual report year: 2011

Nanostructured PLD-grown gadolinia doped ceria: Chemical and structural characterization by transmission electron microscopy techniques
Publication: Research - peer-review › Journal article – Annual report year: 2010

The effects of thermal annealing on the structure and the electrical transport properties of ultrathin gadolinia-doped ceria films grown by pulsed laser deposition
Publication: Research - peer-review › Journal article – Annual report year: 2010

Enhanced conductivity in pulsed laser deposited Ce0.9Gd0.1O2.22d/SrTiO3 heterostructures
Publication: Research - peer-review › Journal article – Annual report year: 2010

Enhancement of ionic conductivity in Sm-doped Ceria (SDC)/Yttria-stabilized Zirconia (YSZ) hetero-epitaxial structures
Sanna, S., Esposito, V., Tebano, A., Licoccia, S., Traversa, E. & Balestrino, G. 2010 In : Small. 6, 17, p. 1863-1867
Publication: Research - peer-review › Journal article – Annual report year: 2010

Novel Y2-xPrxRu2O7 (x = 0–2) Pyrochlore Oxides Prepared Using a Soft Chemistry Route and their Electrical Properties
Publication: Research - peer-review › Journal article – Annual report year: 2010

Pulsed laser deposition of gadolinia doped ceria layers at moderate temperature – a seeding approach
Publication: Research - peer-review › Poster – Annual report year: 2010

A wet-chemical route for the preparation of Ni–BaCe0.9Y0.1O3–δ cermet anodes for IT-SOFCs
Publication: Research - peer-review › Journal article – Annual report year: 2009

Fabrication and Electrochemical Properties of Epitaxial Samarium-Doped Ceria Films on SrTiO3-Buffered MgO Substrates
Publication: Research - peer-review › Journal article – Annual report year: 2009
Improved total conductivity of nanometric samaria-doped ceria powders sintered with molten LiNO3 additive
Publication: Research - peer-review › Journal article – Annual report year: 2009

Master sintering curve for Gd-doped CeO2 solid electrolytes
Publication: Research - peer-review › Journal article – Annual report year: 2009

Nafion-Mesoporous Silica as Electrolyte for Ethanol Fuel Cells
Publication: Research - peer-review › Journal article – Annual report year: 2009

Design of electroceramics for solid oxides fuel cell applications: Playing with ceria
Esposito, V. & Traversa, E. 2008 In : Journal of the American Ceramic Society. 91, 4, p. 1037-1051
Publication: Research - peer-review › Journal article – Annual report year: 2008

Cathode performance of nanostructured La1-aSraCo1-bFebO3- on a Ce0.8Sm0.2O2 electrolyte prepared by citrate-nitrate auto-combustion
Publication: Research - peer-review › Journal article – Annual report year: 2007

Ceria-Based Thin Film Hetero-structure Growth and Characterization for SOFC Applications
Publication: Research - peer-review › Conference article – Annual report year: 2007

Fabrication of Ce1-xGdxO2-0.5x Electrolytes with Tunable Dense Microstructures for IT-SOFC Applications
Publication: Research - peer-review › Conference article – Annual report year: 2007

Synthesis and Densification of Nanometric Ce0.8Sm0.2O1.9-δ
Esposito, V., Fronzi, M. & Traversa, E. 2007 In : MRS Online Proceedings. 972
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2007

Applicability of Bi2Ru2O7pyrochlore electrodes for ESB and BIMEVOX electrolytes
Publication: Research - peer-review › Journal article – Annual report year: 2006

Bi2Ru2O7 Pyrochlore Electrodes for Bi2O3 based Electrolyte for IT-SOFC Applications
Publication: Research - peer-review › Journal article – Annual report year: 2006

Chemical vapour deposition of multi-walled carbon nanotubes from Nickel/yttria stabilize zirconia catalysts
Publication: Research - peer-review › Journal article – Annual report year: 2006

Electrode performance of nanostructured La1-aSr/a-bCo1-bFe/a-bO3-a on a Ce0.8Sm0.2O2 electrolyte prepared by citrate nitrate auto-combustion
Mixed ionic-electronic YSZ/Ni composite for SOFC anodes with high electrical conductivity

Synthesis and characterization of $Y_2Ru_2O_7$ and $Y_{2-x}Pr_xRu_2O_7$ for cathode application in intermediate temperature solid oxide fuel cells

Synthesis, Characterization and Densification of Samaria Doped Ceria (SDC) ultra-fine Powders
Esposito, V., Luong, B. H., Fronzi, M. & Traversa, E. 2006 In : E C S Transactions. 1, 7, p. 35-50

Alternative chemical route to mesoporous titania from a titanatranne complex
Trakanprapai, C., Esposito, V., Licoccia, S. & Traversa, E. 2005 In : Journal of Materials Research. 20, 1, p. 128-134

Composite Mesoporous Titania Nafion-Based Membranes for Direct Methanol Fuel Cell Operation at High Temperature

Electrical properties of YSZ/NiO composites prepared by a liquid mixture technique

$Pb_2Ru_2O_{6.5}$ as a low temperature cathode for bismuth oxide electrolytes

Preparation and Electrochemical Characterization of Perovskite/YSZ Ceramic Films

Process for the production of nanocrystalline oxides and mixed oxides of the lanthanides group, obtained products and their use
Licoccia, S., Traversa, E., Rainer, A., Esposito, V. & Trakanprapai, C. 2005

EIS study of humidity sensor based on mesostructured porous silica thin film material

Projects:

GIANT-E: Microstructural forging of electromechanically active bulk ceria
Kabir, A., Esposito, V. & Van Nong, N.
15/04/2017 → 14/04/2020
Project: PhD
Fabrication and electrical properties of advanced thin film materials for resistive switching memories
Li, Y., Pryds, N., Esposito, V. & Traulsen, M. L.
01/04/2017 → 31/03/2020
Project: PhD

Giant-E - Ceria Thin Films Giant Electrostrictors
Santucci, S., Esposito, V., Lubomirsky, I. & Pryds, N.
15/02/2017 → 14/02/2020
Project: PhD

The fabrication and testing of two terminal memristor device - Nano Ionic Conducting Engineered materials for information application
Pryds, N., Esposito, V. & Traulsen, M. L.
01/01/2017 → 31/01/2020
Project

Highly defective oxides – the next generation of electromechanical materials
Esposito, V.
01/09/2016 → 31/08/2019
Project

Nano-Editor: Development of nano-materials based printing media for all-ceramic solid oxide fuel cells manufacturing
Rosa, M., Esposito, V. & Zielke, P.
01/09/2016 → 31/08/2019
Project: PhD

Cost-effective and flexible 3D printed SOFC stacks for commercial applications
Esposito, V. & Rosa, M.
01/07/2016 → 31/12/2019
Project

Breaking the temperature limits of Solid Oxide Fuel Cells: Towards a new family of ultra-thin portable power sources
Taracón, A. & Esposito, V.
01/04/2016 → 31/03/2021
Project

New composite materials for high temperature water splitting and synthetic fuel production by solar thermochemical conversion
Esposito, V.
01/05/2015 → 31/03/2018
Project

Advanced nano-inks for ink-jet printing of functional metal oxides for energy and environment devices - Smart Inks
Gadea, C., Esposito, V. & Ramousse, S.
15/12/2014 → 14/12/2017
Project: PhD

Electrospun functionalized nano-materials for ultra-compact de-NOX SCR system in naval shipping
Esposito, V.
01/05/2014 → 30/09/2016
Project

Developing New Electrolytes Materials and Methods for the Manufacture of Nanostructured Electrolytes for Low Temperature SOFC Operating Around 400°C
Activities:

Cerâmica (Journal)
Esposito, V. (Editor)
2018
Activity: Research › Journal editor

21st International Conference on Solid State Ionics
Esposito, V. (Organizer)
18 Jun 2017 → 23 Jun 2017
Activity: Attending an event › Participating in or organising a conference

Topics in Mining, Metallurgy and Materials Engineering (Journal)
Esposito, V. (Editor)
18 May 2017
Activity: Research › Journal editor

41st International Conference and Expo on Advanced Ceramics and Composites
Esposito, V. (Organizer)
22 Jan 2017 → 27 Jan 2017
Activity: Attending an event › Participating in or organising a conference

ELSEVIER (Publisher)
Esposito, V. (Editor)
2016
Activity: Research › Series editor

Effect of fast mass diffusion regime on defective ceria mechano-chemo-electrical properties: By Vincenzo Esposito
Esposito, V. (Invited speaker)
2 Jun 2016
Activity: Talks and presentations › Conference presentations

40th International Conference and Exposition on Advanced Ceramics and Composites
Esposito, V. (Organizer)
24 Jan 2016 → 29 Jan 2016
Activity: Attending an event › Participating in or organising a conference

39th International Conference and Expo on Advanced Ceramics and Composites
Esposito, V. (Organizer)
25 Jan 2015 → 30 Jan 2015
Activity: Attending an event › Participating in or organising a conference

Esposito, V. (Invited speaker)
14 Oct 2014
Activity: Talks and presentations › Conference presentations

38th International Conference and Expo on Advanced Ceramics and Composites
Esposito, V. (Organizer)
26 Jan 2014 → 31 Jan 2014
Activity: Attending an event › Participating in or organising a conference
ENHANCED MASS DIFFUSION PHENOMENA IN HIGHLY DEFECTIVE DOPED CERIA: LIMITS AND APPLICATIONS: Ionic and Electronic Conductors and Applications to Solid Oxide Fuel Cells and Membrane Technology
Esposito, V. (Invited speaker)
13 Nov 2013
Activity: Talks and presentations › Conference presentations

Oxygen permeation and chemical reactivity of alkaline earth-doped cobaltite perovskites for membrane applications: VII Brazilian Electroceramics Symposium
Esposito, V. (Invited speaker)
26 Oct 2010
Activity: Talks and presentations › Conference presentations

DESIGN OF THE ELECTROCERAMICS FOR SOLID OXIDE FUEL CELL APPLICATIONS: PLAYING WITH CERIA: Nanotechnology: Controlled Processing of Nanoparticle Structures and Composites
Esposito, V. (Invited speaker)
7 Oct 2008
Activity: Talks and presentations › Conference presentations

Influence of Sintering on Electrochemical Properties of Nanocrystalline Doped-Ceria: F5 - Nanostructured Metal Oxides: Processing and Applications
Esposito, V. (Invited speaker)
2 Nov 2006
Activity: Talks and presentations › Conference presentations