

# Europass Curriculum Vitae

Updated July 2020

## Informazioni Personali

Nome Cognome **Massimo Viviani**

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Nazionalità

Data di nascita

## Impiego attuale

**Ricercatore presso Consiglio Nazionale delle Ricerche – Istituto di chimica della materia condensata e di tecnologie per l'energia (CNR-ICMATE)**

## Esperienze lavorative

Date 2001-in corso

Occupazione Ricercatore, tempo indeterminato

Nome e indirizzo datore di lavoro CNR-ICMATE, c/o DICCA-UNIGE, Via all'Opera Pia 15, I-16145, Genova, Italia

Date 1999-2001

Occupazione Ricercatore, tempo determinato

Nome e indirizzo datore di lavoro CNR-ICFAM, Via De Marini 6, I-16149, Genova, Italy

## Educazione e training

Date **1995-1998**

Titoli conseguito PhD in Chimica per l'Ingegneria

Temi principali/ Sintesi di nanopolveri con struttura perovskitica con metodi acquosi

Organizzazione Università di Genova

Date **1993-1994**

Titoli conseguito Specializzazione in Scienza e Tecnologia dei Materiali

Temi principali/ Fisica, Chimica e Ingegneria dei Materiali. Frattura fragile di acciai per impieghi off-shore

Organizzazione Università di Genova

Dates **1986-1992**

Title of qualification awarded Master Degree in Physics

Principal subjects/ Intermetallic superconducting materials for radiofrequency applications

Name of organisation University of Genova

## Personal skills and competences

Mother tongue(s) **Italian**

Other language(s)

Self-assessment

European level (\*)

**English**

**French**

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C1	Proficient user	C1	Proficient user	C1	Proficient user	C2	Proficient user	B2	Independent user
C1	Proficient user	C1	Proficient user	B1	Independent user	B1	Independent user	A2	Basic user

(\*) [Common European Framework of Reference for Languages](#)

Technical skills and competences

Powder technology. Wet chemical synthesis of oxides, ceramic processing, electrochemical impedance spectroscopy, Fuel Cells.

Computer skills and competences

LabVIEW, Matlab

### Projects

- ❑ *COELUS: Produzione di combustibile rinnovabile mediante CO-Elettrolisi e riUSo del diossido di carbonio*, Progetto Compagnia di San Paolo, Scientific Coordinator: M. Viviani, **2020-2022**
- ❑ *EVOLVE: Evolved materials and innovative design for high-performance, durable and reliable SOFC cell and stack*, Progetto EU-FP7, Principal investigator partner CNR, Workpackage leader, member Executive Board: M. Viviani, **2012-2016**
- ❑ *Electrochemical Impedance Spectroscopy as predictive diagnostic tool for SOFC cells and stacks*, bilaterale Italia-Bulgaria (CNR-BAS), CNR-ICMATE Team member, **2016 – 2018**
- ❑ *Endurance: ENhanced DURability materials for Advanced stacks of New solid oxide fuel Cells*. Progetto EU-FP7, Principal investigator partner CNR, Scientific Manager, member dell'Executive Board: M. Viviani, **2014-2015**
- ❑ *INCYPIT - Materiali ceramici e ibridi innovativi per celle a combustibile a conduzione protonica operanti a temperature intermedie: progettazione, caratterizzazione e assemblaggio del dispositivo*, CNR-ICMATE Team member, **2013-2016**
- ❑ *Reversible SOFC-SOEC Cells*, bilaterale Italia-Bulgaria (CNR-BAS), Principal investigator CNR: M. Viviani, **2013 – 2015**
- ❑ *BIOITSOFC*, Progetto PRIN 2010-11, Principal investigator unità CNR ITAE/IENI: A. Aricò, **2013-2015**
- ❑ *SOFC studies by Electrochemical Impedance Spectroscopy*, bilaterale Italia-Bulgaria (CNR-BAS), Principal investigator CNR: M. Viviani, **2010 – 2012**
- ❑ *IDEAL-Cell: an Innovative Dual-mEmbrAne Fuel Cells*, Progetto EU-FP7, Principal

investigator partner CNR, Workpackage leader, member dell'Executive Board: M. Viviani, **2008-2011**

- *Studio della corrosione in acciai per applicazioni in pile a combustibile*, contratto di ricerca con la società IBR Sistemi S.r.l., progetto POR-FESR Regione Liguria, responsabile U.O. IENI-CNR: M. Viviani, **2012-2013**
- *Protonic Fuel Cells*, PRIN 2008, Responsabile Nazionale Prof. Silvia Licocchia, Responsabile U.O. CNR-IENI/SPIN: M. Viviani, **2010-2012**.
- *Celle a combustibile per applicazioni stazionarie cogenerative*, Progetto CNR-MiSE. responsabile U.O. CNR- IENI-Ge: M. Viviani, **2008-2011**

#### Commissions

- Guest Editor for the special issue "Advanced Materials and Technologies for Fuel Cells" of the Open Access MDPI Journal "Energies", **2019-2020**
- Member del Consultative Council of the Institute of Electrochemistry and Energy Systems of the Bulgarian Academy of Science from **2012**;
- Project Reviewer for the European Science Foundation, **2016-2019**
- Project Reviewer for Ministero dell'Istruzione, Università e Ricerca, **2018-in corso**

#### Teaching/Supervising

- Contract Professor for the course of "Materials Science and Technology", University of Genova, **2019-2020**
- Supervisor of 6 internship from ESIREM-University of Burgundy, Dijon, **2007-2016**
- Supervisor of 3 Doctoral theses in Materials Science (University of Genova), **2006-2015**
- Supervisor of 11 Master theses in Material Science and Technology (University of Genova), **2002-2018**
- Supervisor of 11 Research Grants (CNR), **2010-2016**

#### Conference Chair

- *EIA11: 11<sup>th</sup> International Symposium on Electrochemical Impedance Analysis*, 6-10 Novembre **2017**, Camogli, Italy, Program co-Chair: Massimo Viviani
- *CEn 2015: Ceramics for Energy*, 14-15 Maggio **2015**, Faenza, Italy, Organizing committee: Massimo Viviani

#### Publications (last 5 years)

1. M. Dudek, B. Lis, E. Kocyło, A. Rapacz-Kmita, M. Mosiałek, M. Gajek, R. Lach, S. Presto, M. Viviani, M.P. Carpanese, A. Barbucci, D. Majda, "Utilisation of methylcellulose as a shaping agent in the fabrication of  $\text{Ba}_{0.95}\text{Ca}_{0.05}\text{Ce}_{0.9}\text{Y}_{0.1}\text{O}_3$  proton-conducting ceramic membranes via the gelcasting method" *Journal of Thermal*



- Analysis and Calorimetry*, 2019, doi: 10.1007/s10973-019-08856-8
2. E. Venezia, M. Viviani, S. Presto, V. Kumar, and R. I. Tomov, "Inkjet Printing Functionalization of SOFC LSCF Cathodes," *Nanomaterials*, vol. 9, p. 654, 2019.
  3. D. Clematis *et al.*, "Distribution of Relaxation Times and Equivalent Circuits Analysis of Ba<sub>0.5</sub>Sr<sub>0.5</sub>Co<sub>0.8</sub>Fe<sub>0.2</sub>O<sub>3-δ</sub>," *Catalysts*, vol. 9, no. 5, p. 441, May 2019.
  4. D. Clematis, A. Barbucci, S. Presto, M. Viviani, and M. P. Carpanese, "Electrocatalytic activity of perovskite-based cathodes for solid oxide fuel cells," *Int. J. Hydrogen Energy*, vol. 44, no. 12, pp. 6212–6222, Mar. 2019.
  5. S. Presto, C. Artini, M. Pani, M. M. Carnasciali, S. Massardo, and M. Viviani, "Ionic conductivity and local structural features in Ce<sub>1-x</sub>Sm<sub>x</sub>O<sub>2-x/2</sub>," *Phys. Chem. Chem. Phys.*, vol. 20, no. 44, pp. 28338–28345, 2018.
    - A. Barbucci, M. P. Carpanese, S. Presto, and M. Viviani, "Preface," *Bulg. Chem. Commun.*, vol. 50, p. 5, 2018.
  6. S. Singh, P. Singh, M. Viviani, and S. Presto, "Dy doped SrTiO<sub>3</sub>: A promising anodic material in solid oxide fuel cells," *Int. J. Hydrogen Energy*, vol. 43, no. 41, pp. 19242–19249, Oct. 2018.
  7. M. P. Carpanese *et al.*, "Characterisation of La<sub>0.6</sub>Sr<sub>0.4</sub>Co<sub>0.2</sub>Fe<sub>0.8</sub>O<sub>3-δ</sub>-Ba<sub>0.5</sub>Sr<sub>0.5</sub>Co<sub>0.8</sub>Fe<sub>0.2</sub>O<sub>3-δ</sub> composite as cathode for solid oxide fuel cells," *Bulg. Chem. Commun.*, vol. 50, pp. 95–101, 2018.
  8. S. Singh *et al.*, "Structural and electrical conduction behaviour of yttrium doped strontium titanate: anode material for SOFC application," *J. Alloys Compd.*, vol. 748, pp. 637–644, Jun. 2018.
  9. C. Artini *et al.*, "Structural properties of Sm-doped ceria electrolytes at the fuel cell operating temperatures," *Solid State Ionics*, vol. 315, no. December 2017, pp. 85–91, Feb. 2018.
  10. S. Presto, A. Barbucci, M. Carpanese, F. Han, R. Costa, and M. Viviani, "Application of La-Doped SrTiO<sub>3</sub> in Advanced Metal-Supported Solid Oxide Fuel Cells," *Crystals*, vol. 8, no. 3, p. 134, Mar. 2018.
  11. S. Presto, P. Kumar, S. Varma, M. Viviani, and P. Singh, "Electrical conductivity of NiMo-based double perovskites under SOFC anodic conditions," *Int. J. Hydrogen Energy*, vol. 43, no. 9, pp. 4528–4533, Mar. 2018.
  12. R. Pandey *et al.*, "The effect of synthesis and thermal treatment on phase composition and ionic conductivity of Na-doped SrSiO<sub>3</sub>," *Solid State Ionics*, vol. 314, no. October 2017, pp. 172–177, Jan. 2018.
  13. P. Kumar, S. Presto, A. S. K. Sinha, S. Varma, M. Viviani, and P. Singh, "Effect of samarium (Sm<sup>3+</sup>) doping on structure and electrical conductivity of double perovskite Sr<sub>2</sub>NiMoO<sub>6</sub> as anode material for SOFC," *J. Alloys Compd.*, vol. 725, pp. 1123–1129, Nov. 2017.
  14. S. Presto and M. Viviani, "Effect of CuO on microstructure and conductivity of Y-doped BaCeO<sub>3</sub>," *Solid State Ionics*, vol. 295, no. 3, pp. 111–116, 2016.
    - A. Caldarelli, E. Mercadelli, S. Presto, M. Viviani, and A. Sanson, "Leaching effect in gadolinia-doped ceria aqueous suspensions for ceramic processes," *J. Power Sources*, vol. 326, pp. 70–77, 2016.
  15. F. Giannici *et al.*, "Electrode-Electrolyte Compatibility in Solid-Oxide Fuel Cells: Investigation of the LSM-LNC Interface with X-ray Microspectroscopy," *Chem. Mater.*, vol. 27, no. 8, pp. 2763–2766, Apr. 2015.
  16. M. P. Carpanese, A. Barbucci, G. Canu, and M. Viviani, "BaCe<sub>0.85</sub>Y<sub>0.15</sub>O<sub>2.925</sub> dense layer by wet powder spraying as electrolyte for SOFC/SOEC applications," *Solid State Ionics*, vol. 269, pp. 80–85, 2015.
  17. F. Agresti, M. Fabrizio, F. Ravera, and M. Viviani, "A Special Section on Nanoparticles in Liquid Media for Material Processing, Environment and Industrial Applications," *J. Nanosci. Nanotechnol.*, vol. 15, no. 5, pp. 3443–3444, May 2015.
  18. R. Spotorno, P. Piccardo, F. Perrozzi, S. Valente, M. Viviani, and A. Ansar, "Microstructural and electrical characterization of plasma sprayed Cu-Mn oxide spinels as coating on metallic interconnects for stacking solid oxide fuel cells," *Fuel Cells*, vol. 15, no. 5, pp. 728–734, 2015.
  19. D. Vladikova *et al.*, "Reversibility in monolithic dual membrane fuel cell," *Bulg. Chem. Commun.*, vol. 47, no. 2, pp. 519–525, 2015.
  20. D. Masson *et al.*, "Shaping of a Dual Membrane SOFC and First Electrochemical Tests in a Dedicated 3-Chamber Set-up," *ECS Trans.*, vol. 68, no. 1, pp. 1969–1978, Jul. 2015.
  21. S. Presto and M. Viviani, "Infiltration of Metal Substrates with Nanostructured CeO<sub>2</sub> by a Room-Temperature Wet Process," *J. Nanosci. Nanotechnol.*, vol. 15, no. 5, pp. 3562–3567, May 2015.
  22. M. P. Carpanese, M. Panizza, M. Viviani, E. Mercadelli, A. Sanson, and A. Barbucci,

- “Study of reversible SOFC/SOEC based on a mixed anionic-protonic conductor,” *J. Appl. Electrochem.*, vol. 45, no. 7, pp. 657–665, 2015.
23. M. P. Carpanese *et al.*, “Electrochemical performances of a reversible high temperature fuel cell based on a mixed anionic-protonic conductor,” *Chem. Eng. Trans.*, vol. 41, no. Special Issue, pp. 235–240, 2014.
  24. D. Vladikova *et al.*, “Application of yttrium doped barium cerate for improvement of the dual membrane SOFC design,” *Int. J. Hydrogen Energy*, vol. 39, no. 36, pp. 21561–21568, 2014.
  25. R. Gawel, K. Przybylski, and M. Viviani, “Chemical stability and electrical properties of BaCe<sub>0.85</sub>Y<sub>0.15</sub>O<sub>3-δ</sub>-Ce<sub>0.85</sub>Y<sub>0.15</sub>O<sub>2-δ</sub> composite bulk samples for use as central membrane materials in dual PCFC-SOFC fuel cells,” *Mater. Chem. Phys.*, vol. 147, no. 3, pp. 804–814, Oct. 2014.

#### Bibliometric information

Updated 26<sup>th</sup> July 2020

- H-index = 37
- Citations = 5327
- Source: Google Scholar (<https://scholar.google.it/citations?user=4p9IwcMAAAAJ&hl=it>)

26/07/2020

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