

- Il prof. Antonino Martorana è nato a Palmanova (UD) il 24/9/52
- Laurea in Fisica presso l'Università di Padova
- Ricercatore presso il Dipartimento di Chimica Inorganica dell'Università di Padova (1982-1987).
- Professore associato di Strutturistica Chimica presso l'Università di Palermo (1987-2001).
- Professore ordinario di Chimica Inorganica presso l'Università di Palermo (2001-).
- Docente dei corsi di:
  - Chimica (per la laurea in Fisica)
  - Chimica II (per la laurea in Fisica)
  - Chimica dei Materiali (per la laurea specialistica in Chimica)
  - Strutturistica Chimica (per la laurea specialistica in Chimica)
  - Chimica dello Stato Solido (laurea magistrale in Chimica)
- Docente della "VIII International School of Synchrotron Light", Frascati (RM), settembre 2005.
- Docente della "IX International School of Synchrotron Light", Duino (TS), settembre 2007.
- Docente della "X International School of Synchrotron Light", Duino (TS), settembre 2009.
- Relatore di tesi di laurea in Chimica, Ingegneria Chimica, Fisica.
- Tutor di Dottorandi in Scienze Chimiche.
- Tutor di assegnisti di ricerca.
- Coordinatore del Dottorato in Scienze Chimiche dell'Università di Palermo ( (2006)-2008).
- Presidente del Consiglio Interclasse di Scienze Chimiche (2008-2013 )
  
- Responsabile di borse di studio INFM per laureandi e laureati fruiti presso facilities di luce di sincrotrone.
- Ricercatore associato dell' Istituto per lo Studio dei Materiali Nanostrutturati del CNR.
- Membro della Commissione di valutazione delle proposte di esperimento presso la beamline GILDA (BM08) di ESRF (European Synchrotron Radiation Facility).
- Membro del Comitato Scientifico dei convegni 2000-2009 della Società Italiana di Luce di Sincrotrone.
- Partecipante al progetto 2005-2007 "Celle a Combustibile" del Fondo Integrativo Speciale per la Ricerca.
- Responsabile locale per il progetto PRIN (2006) "Ceramici protonici per celle a combustibile"
- Responsabile locale per il progetto PRIN 2008 "PC-SOFCs (Protonic Conductors Solid Oxide Fuel Cells)-Celle a combustibile ad ossidi solidi basate su conduttori protonici nanostrutturati: dalla sintesi dei materiali alla fabbricazione di un prototipo"
- Responsabile locale per il progetto PRIN 2010-11 "Celle a combustibile ad ossido solido operanti a temperatura intermedia alimentate con biocombustibili (BIOITSOFC)"
- Partecipante al progetto PON02\_00153\_2939517 "Tecnologie ad alta Efficienza per la Sostenibilità Energetica ed ambientale On-board"
- Referee di riviste internazionali :
  - "Journal of Synchrotron Radiation"
  - "Journal of Solid State Chemistry"
  - "Journal of Applied Crystallography"
  - "Solid State Ionics"
  - "Applied Catalysis A"
  - "Journal of Physical Chemistry B"
  - "Journal of Physical Chemistry C"
  - "Journal of Materials Chemistry"
  - "Chemistry of Materials"
  - "Journal of Solid State Electrochemistry"
- Main proposer e partecipante attivo a numerosi esperimenti con luce di sincrotrone presso le facilities SRS Daresbury, NSLS Brookhaven, ESRF Grenoble, DESY Amburgo, ELETTRA Trieste.

- *Competenze e attività di ricerca in:*

*Caratterizzazione strutturale e correlazione struttura-proprietà in catalizzatori eterogenei.*

*Struttura di nanomateriali. Disordine reticolare in solidi finemente*

*suddivisi. Analisi strutturale di materiali polimerici. Ossidi e materiali polimerici a conduzione*

*ionica per celle a combustibile. Scattering a basso angolo (SAXS) e ad alto angolo (WAXS) dei*

*raggi X. Tecniche di calcolo per simulazione e fitting di patterns WAXS. Tecniche sperimentali*

*connesse con l'impiego della luce di sincrotrone: spettroscopia EXAFS, esperimenti di diffrazione*

*risolti in tempo e in temperatura, scattering anomalo, scattering a basso angolo in incidenza*

*radente.*

#### *Pubblicazioni 2000-2012*

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2. Lupetin P, Giannici F, Gregori G, Martorana A, Maier J (2012). Effects of Grain Boundary Decoration on the Electrical Conduction of Nanocrystalline CeO<sub>2</sub>. JOURNAL OF THE ELECTROCHEMICAL SOCIETY, 159 (4), B417-B425
3. Longo A, Liotta LF, Pantaleo G, Giannici F, Venezia AM, Martorana A (2012). Structure of the Metal-Support Interface and Oxidation State of Gold Nanoparticles Supported on Ceria. JOURNAL OF PHYSICAL CHEMISTRY. C, NANOMATERIALS AND INTERFACES, vol. 116, p. 2960-2966.
4. Giannici, F.; Shirpour, M.; Longo, A.; Martorana, A.; Merkle, R.; Maier, J. (2011). Long-Range and Short-Range Structure of Proton-Conducting Y:BaZrO<sub>3</sub>. Chemistry of Materials 23, 2994–3002.
5. Sciortino, L.; Giannici, F.; Martorana, A.; Ruggirello, A.M.; Turco Liveri, V.; Portale, G.; Casaletto, M.P.; Longo, A. (2011). Structural Characterization of Surfactant-Coated Bimetallic Cobalt/Nickel Nanoclusters by XPS, EXAFS, WAXS, and SAXS. Journal of Physical Chemistry C, 115, 6360-6366.
6. Cammarata, A; Emanuele, A; Martorana, A; Duca, D. (2011). Cation Environment of BaCeO<sub>3</sub>-Based Protonic Conductors II: New Computational Models. Journal of physical chemistry A, 115, 1676-1685.
7. Giannici, F., Messina, D., Longo, A., Martorana, A. (2011). Crystal structure and local dynamics in tetrahedral proton-conducting La<sub>1-x</sub>Ba<sub>1+x</sub>GaO<sub>4</sub>. Journal of Physical Chemistry C 115, 298-304.
8. Longo, A., Liotta, L.F., Carlo, G.D., Giannici, F., Venezia, A.M., Martorana, A. (2010). Structure and the metal support interaction of the Au/Mn oxide catalysts. Chemistry of Materials 22, 3952-3960.
9. Giannici, F., Longo, A., Kreuer, K.-D., Balerna, A., Martorana, A. (2010). Dopants and defects: Local structure and dynamics in barium cerates and zirconates. Solid State Ionics 181, 122-125.

10. Sciortino, L., Longo, A., Giannici, F., Martorana, A. (2009). Effect of the capping agents on cobalt nanoparticles. *Journal of Physics: Conference Series* 190, art. no. 012125.
11. Giannici, F., Messina, D., Longo, A., Sciortino, L., Martorana, A. (2009). Local structure of gallate proton conductors. *Journal of Physics: Conference Series* 190, art. no. 012077.
12. Liotta, L.F., Longo, A., Pantaleo, G., Di Carlo, G., Martorana, A., Cimino, S., Russo, G., Deganello, G. (2009). Alumina supported Pt(1%)/Ce<sub>0.6</sub>Zr<sub>0.4</sub>O<sub>2</sub> monolith: Remarkable stabilization of ceria-zirconia solution towards CeAlO<sub>3</sub> formation operated by Pt under redox conditions. *Applied Catalysis B: Environmental* 90, 470-477.
13. Giannici, F., Longo, A., Balerna, A., Kreuer, K.-D., Martorana, A. (2009). Proton Dynamics in In:BaZrO<sub>3</sub>: Insights on the atomic and electronic structure from X-ray absorption spectroscopy. *Chemistry of Materials* 21, 2641-2649.
14. Longo, A., Giordano, F., Giannici, F., Martorana, A., Portale, G., Ruggirello, A., Turco Liveri, V. (2009). Combined small-angle x-ray scattering/extended x-ray absorption fine structure study of coated Co nanoclusters in bis(2-ethylhexyl)sulfosuccinate. *Journal of Applied Physics* 105, art. no. 114308.
15. Prestianni, A., Martorana, A., Labat, F., Ciofini, I., Adamo, C. (2009). A DFT investigation of CO oxidation over neutral and cationic gold clusters. *Journal of Molecular Structure: THEOCHEM* 903, 34-40.
16. Cammarata, A., Martorana, A., Duca, D. (2009). Cation environment of BaCeO<sub>3</sub>-based protonic conductors: A computational study. *Journal of Physical Chemistry A* 113, 6381-6390.
17. Giannici, F., Longo, A., Balerna, A., Martorana, A. (2009). Dopant - Host oxide interaction and proton mobility in Gd:BaCeO<sub>3</sub>. *Chemistry of Materials* 21, 597-603.
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19. Longo, A., Martorana, A. (2008). Distorted f.c.c. arrangement of gold nanoclusters: A model of spherical particles with microstrains and stacking faults. *Journal of Applied Crystallography* 41, 446-455.
20. Giannici, F., Longo, A., Balerna, A., Kreuer, K.-D., Martorana, A. (2007). Indium doping in barium cerate: The relation between local symmetry and the formation and mobility of protonic defects. *Chemistry of Materials* 19, 5714-5720.
21. Giannici, F., Longo, A., Deganello, F., Balerna, A., Arico, A.S., Martorana, A. (2007). Local environment of Barium, Cerium and Yttrium in BaCe<sub>1-x</sub>Y<sub>x</sub>O<sub>3-δ</sub> ceramic protonic conductors. *Solid State Ionics* 178, 587-591.
22. Longo, A., Giannici, F., Balerna, A., Ingrao, C., Deganello, F., Martorana, A. (2006). Local environment of yttrium in Y-doped barium cerate compounds. *Chemistry of Materials* 18, 5782-5788.

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24. Prestianni, A., Martorana, A., Labat, F., Ciofini, I., Adamo, C. (2006). Theoretical insights on O<sub>2</sub> and CO adsorption on neutral and positively charged gold clusters. *Journal of Physical Chemistry B* 110, 12240-12248.
25. Deganello, G., Giannici, F., Martorana, A., Pantaleo, G., Prestianni, A., Balerna, A., Liotta, L.F., Longo, A. (2006). Metal - Support interaction and redox behavior of Pt(1 wt %)/Ce 0.6Zr0.4O<sub>2</sub>. *Journal of Physical Chemistry B* 110, 8731-8739.
26. Casaletto, M.P., Longo, A., Venezia, A.M., Martorana, A., Prestianni, A. (2006). Metal-support and preparation influence on the structural and electronic properties of gold catalysts. *Applied Catalysis A: General* 302, 309-316.
27. Casaletto, M.P., Longo, A., Martorana, A., Prestianni, A., Venezia, A.M. (2006). XPS study of supported gold catalysts: The role of Au<sup>0</sup> and Au<sup>+δ</sup> species as active sites. *Surface and Interface Analysis* 38, 215-218.
28. Longo, A., Balerna, A., D'Acapito, F., D'Anca, F., Giannici, F., Liotta, L.F., Pantaleo, G., Martorana, A. (2005). A new cell for the study of in situ chemical reactions using X-ray absorption spectroscopy. *Journal of Synchrotron Radiation* 12, 499-505.
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- ray diffraction from magnetic clusters obtained by Co + Ni sequential ion implantation in silica. *Journal of Applied Crystallography* 36 (3 I), pp. 732-735.
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  39. Deganello, F., Martorana, A. (2002). Phase analysis and oxygen storage capacity of ceria-lanthana-based TWC promoters prepared by sol-gel routes. *Journal of Solid State Chemistry* 163 (2), pp. 527-533.
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47. Longo, A., Balerna, A., Deganello, F., Liotta, L.F., Meneghini, C., Martorana, A., Venezia, A.M. (2000). Structural characterization of Pd-Ag and Pd-Cu bimetallic catalysts by means of EXAFS, WAXS and XPS. *Studies in Surface Science and Catalysis* 130 D, 3207-3212.