

Daniele Pergolesi - List of Publications

2018

1. A. Fluri, D. Pergolesi, A. Wokaun, T. Lippert, *Stress evolution in oxide epitaxy*. (2018) **Phys. Rev. B**, 97, 125412
2. D. Pergolesi, E. Fabbri, V. Roddatis, G. Harrington, T. Lippert, John A. Kilner, E. Traversa, *Interface effect on the ionic conductivity of doped ceria – yttria-stabilized zirconia heterostructure* (2018) **ACS Appl. Mater. Interfaces** 10, 16, 14160-14169

2017

3. A. Fluri, A. Marcolongo, V. Roddatis, A. Wokaun, D. Pergolesi, N. Marzari, T. Lippert, *Enhanced Proton Conductivity in Y doped BaZrO₃ via Strain Engineering*, (2017) **Advanced Science**, 4, 1700467
4. A. Fluri, E. Gilardi, M. Karlsson, V. Roddatis, M. Bettinelli, I. E. Castelli, T. Lippert, D. Pergolesi, *Anisotropic proton and oxygen ion conductivity in epitaxial Ba₂In₂O₅ thin films*. (2017) **J. Phys. Chem. C**, 121(40), 21797-21805
5. W. Si, D. Pergolesi, F. Haydous, A. Fluri, A. Wokaun, T. Lippert, *Investigating the behavior of various cocatalysts on LaTaON₂ photoanode for visible light water splitting*, (2017) **Phys. Chem. Chem. Phys.**, 19(1), 656-662
6. E. Gilardi, E. Fabbri, L. Bi, J.L.M. Rupp, T. Lippert, D. Pergolesi, E. Traversa, *Effect of dopant-host ionic radii mismatch on acceptor doped barium zirconate microstructure and proton conductivity*, (2017) **J. Phys. Chem. C**, 121, 9739–9747
7. M. Pichler, J. Szlachetko, I. E. Castelli, N. Marzari, M. Döbeli, S. Ninova, U. Aschauer, A. Wokaun, D. Pergolesi, T. Lippert, *Determination of conduction and valence band electronic structure of LaTiO_xN_y thin film*, (2017) **ChemSusChem**, 10, 2099-2106
8. M. Pichler, W. Si, F. Haydous, H. Téllez, J. Druce, E. Fabbri, M. El Kazzi, M. Döbeli, S. Ninova, U. Aschauer, A. Wokaun, D. Pergolesi, T. Lippert, *Oxynitride thin films as model systems for photocatalysis*, Invited Feature Article, (2017) **Advanced Functional Materials**, 27, 1605690

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9. A. Fluri, D. Pergolesi, V. Roddatis, A. Wokaun, T. Lippert, *In situ stress observation in oxide films and how tensile stress influences oxygen ion conduction*, (2016) **Nature Communications**, 7:10692
10. S. E. Temmel, E. Fabbri, D. Pergolesi, T. Lippert, T. J. Schmidt, *Investigating the Role of Strain toward the Oxygen Reduction Activity on Model Thin Film Pt Catalysts*, (2016) **ACS Catalysis**, 6, 7566–7576
11. S. E. Temmel, E. Fabbri, D. Pergolesi, T. Lippert, T. J. Schmidt, *Tuning the Surface Electrochemistry by Strained Epitaxial Pt Thin Film Model Electrodes Prepared by Pulsed Laser Deposition*, (2016) **Adv. Mater. Interfaces**, 1600222-32
12. L. Mazzei, M. Wolff, D. Pergolesi, J. A. Dura, L. Börjesson, P. Gutfreund, M. Bettinelli, T. Lippert, M. Karlsson, *Structure and Conductivity of Epitaxial Thin Films of In-Doped BaZrO₃- Based Proton Conductors*, (2016) **J. Phys. Chem. C**, 120, 28415–28422
13. M. Pichler, D. Pergolesi, S. Landsmann, V. Chawla, J. Michler, M. Döbeli, A. Wokaun, T. Lippert, *TiN- buffered substrates for photoelectrochemical measurements of oxynitride thin films*, (2016) **Appl. Surf. Sci.**, 369, 67-75

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14. J. Chen, D. Stender, M. Pichler, M. Döbeli, D. Pergolesi, C. W. Schneider, A. Wokaun, T. Lippert, *Tracing the plasma interactions for pulsed reactive crossed-beam laser ablation*, (2015) **J. Appl. Phys.**, 118, 165306-6
15. F. Aguesse, V. Roddatis, J. Roqueta, P. García, D. Pergolesi, J. Santiso, J. A. Kilner,

- Microstructure and ionic conductivity of LLTO thin films: influence of different substrates and excess lithium in the target*, (2015) **Solid State Ionics**, 272, 1-8
16. D. Pergolesi, V. Roddatis, E. Fabbri, T. Lippert, E. Traversa, J. A. Kilner, *Probing the bulk ionic conductivity by thin film hetero-epitaxial engineering*. (2015) **Sci. Technol. Adv. Mater.**, 16(1) 015001
 17. N. H. Perry, D. Pergolesi, S. R. Bishop, H. L. Tuller, *Defect chemistry and surface oxygen exchange kinetics of La-doped Sr(Ti,Fe)O_{3-α} in oxygen-rich atmospheres*, (2015) **Solid State Ionics**, 273, 18-24

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18. E. Fabbri, A. Magrasó, D. Pergolesi, *Low temperature solid oxide fuel cells based on proton conducting electrolytes*, (2014) **MRS Bulletin**, 39(09), 792-797 (invited)
19. J. Szlachetko, M. Pichler, D. Pergolesi, J. Sa, T. Lippert, *Determination of conduction and valence band electronic structure of La₂Ti₂O₇ thin film*, (2014) **RCS Advances**, 4, 11420–11422

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20. N. H. Perry, D. Pergolesi, K. Sasaki, S. R. Bishop, H. L. Tuller, *Influence of Donor Doping on Cathode Performance:(La, Sr)(Ti, Fe) O_{3-δ} Case Study*, (2013) **ECS Transactions** 57(1), 1719-1723
21. D. Pergolesi, M. Fronzi, E. Fabbri, A. Tebano, E. Traversa, *Growth mechanisms of ceria- and zirconia- based epitaxial thin films and hetero-structures grown by pulsed laser deposition*, (2013) **Mater. Renew. Sustain. Energy**, 2(6)

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22. D. Pergolesi, E. Fabbri, S. Cook, V. Roddatis, E. Traversa, J. A. Kilner, *Tensile Lattice Distortion Does Not Affect Oxygen Transport in Yttria-Stabilized Zirconia-CeO₂ Heterointerfaces*. (2012) **ACS Nano**, 6(12), 10524-10534
23. A. Tebano, E. Fabbri, D. Pergolesi, G. Balestrino, E. Traversa, *Room Temperature Giant Persistent Photoconductivity in SrTiO₃/LaAlO₃ Heterostructures*. (2012) **ACS Nano**, 6(2), 1278-1283
24. E. Fabbri, L. Bi, D. Pergolesi, E. Traversa, *Towards the next generation of solid oxide fuel cells operating below 600° C with chemically stable proton conducting electrolytes*, (2012) **Advanced Materials**, 24 (2), 195-208
25. J.L.M. Rupp, P. Reinhard, D. Pergolesi, T. Ryll, R. Tölke, E. Traversa, *Electric-field-induced current- voltage characteristics in electronic conducting perovskite thin films*, (2012) **Appl. Phys. Lett.**, (100) 1, 012101.

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26. E. Fabbri, L. Bi, D. Pergolesi, E. Traversa, *High performance composite cathode with tailored mixed conductivity for intermediate temperature solid oxide fuel cells using proton conducting electrolytes*, (2011) **Energy and Environmental Science**, 4 (12), 4984-4993
27. E. Fabbri, L. Bi, H. Tanaka, D. Pergolesi, E. Traversa, *Chemically stable Pr and Y Co-doped barium zirconate electrolytes with high proton conductivity for intermediate-temperature solid oxide fuel cells*, (2011) **Advanced Functional Materials**, 21 (1), 158-166.
28. E. Fabbri, L. Bi, J.L.M. Rupp, D. Pergolesi, E. Traversa, *Electrode tailoring improves the intermediate temperature performance of solid oxide fuel cells based on a Y and Pr co-doped barium zirconate proton conducting electrolyte*, (2011) **RSC Advances**, 1 (7), 1183-1186.
29. E. Fabbri, I. Markus, D. Pergolesi, E. Traversa, *Tailoring mixed proton-electronic conductivity of BaZrO₃ by Y and Pr co-doping for cathode application in protonic SOFCs*, (2011) **Solid State Ionics**, 202 (1), 30-35.
30. E. Fabbri, D. Pergolesi, E. Traversa, "Development of chemically-stable proton conducting BZY electrolytes for SOFC at WPI-MANA, NIMS", **Journal of fuel Cell Technology**, 10 (2011) 30-34.
31. D. Schaeffer, et al. *The MARE project: A new ¹⁸⁷Re neutrino mass experiment with sub eV sensitivity*.

(2011) **Nuclear Physics B** - Proceedings Supplements 221, 394.

32. D. Pergolesi, A. Tebano, E. Fabbri, S. Licoccia, G. Balestrino, E. Traversa, *Pulsed laser deposition of superlattices based on ceria and zirconia*. (2011) **ECS Transaction**, 35 (1) 1125-1130.
33. E. Fabbri, I. Markus, L. Bi, D. Pergolesi, E. Traversa, *Exploring mixed protonic/electronic conducting oxides as cathode materials for intermediate temperature SOFCs based on proton conducting electrolytes*. (2011) **ECS Transaction** 35 (1) 2305-2311.

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34. E. Fabbri, D. Pergolesi, E. Traversa, *Materials challenges toward proton-conducting oxide fuel cells: A critical review*, (2010) **Chemical Society Reviews**, 39 (11), 4355-4369.
35. D. Pergolesi, E. Fabbri, A. D'Epifanio, E. Di Bartolomeo, A. Tebano, S. Sanna, S. Licoccia, G. Balestrino, E. Traversa, *High proton conduction in grain-boundary-free yttrium-doped barium zirconate films grown by pulsed laser deposition*. (2010) **Nature Materials**, 9 (10), 846-852.
36. D. Pergolesi, E. Fabbri, E. Traversa, *Chemically stable anode-supported solid oxide fuel cells based on Y-doped barium zirconate thin films having improved performance*. (2010) **Electrochemistry Communications**, 12 (7), 977-980.
37. E. Fabbri, D. Pergolesi, E. Traversa, *Ionic conductivity in oxide heterostructures: The role of interfaces*, (2010) **Sci. Technol. Adv. Mater.**, 11 (5), 054503-054512
38. E. Fabbri, D. Pergolesi, E. Traversa, *Electrode materials: A challenge for the exploitation of protonic solid oxide fuel cells*. (2010) **Sci. Technol. Adv. Mater.**, 11 (4) 044301-044310
39. E. Fabbri, D. Pergolesi, S. Licoccia, E. Traversa, *Does the increase in Y-dopant concentration improve the proton conductivity of BaZr_{1-x}Y_xO_{3-δ} fuel cell electrolytes?* (2010) **Solid State Ionics**, 181 (21-22), 1043-1051.
40. J.S. Ahn, M.A. Camaratta, D. Pergolesi, K.T. Lee, H. Yoon, D.W. Jung, E. Traversa, E.D., Wachsman, *Development of high performance ceria/bismuth oxide bilayered electrolyte SOFCs for lower temperature operation*. (2010) **Journal of the Electrochemical Society**, 157 (3), B376-382.
41. E. Fabbri, D. Pergolesi, A. D'Epifanio, E. Di Bartolomeo, G. Balestrino, S. Licoccia, E. Traversa, *Improving the performance of high temperature protonic conductor (HTPC) electrolytes for solid oxide fuel cell (SOFC) applications*. (2010) **Key Engineering Materials**, 421-422, 336-339.

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42. S. Sanna, V. Esposito, D. Pergolesi, A. Orsini, A. Tebano, S. Licoccia, G. Balestrino, E. Traversa, *Fabrication and electrochemical properties of epitaxial samarium-doped ceria films on SrTiO₃-buffered MgO substrates*. (2009) **Advanced Functional Materials**, 19 (11), 1713-1719.
43. J.S. Ahn, D. Pergolesi, M.A. Camaratta, J. Yoon, B.W. Lee, K.T. Lee, D.W. Jung, E. Traversa, E.D. Wachsman, *High-performance bilayered electrolyte intermediate temperature solid oxide fuel cells*. (2009) **Electrochemistry Communications**, 11 (7), 1504-1507.
44. E. Fabbri, D. Pergolesi, S. Licoccia, E. Traversa, E., *Exploring highly yttrium doped barium zirconate proton conductor electrolytes for application in intermediate temperature solid oxide fuel cells (IT-SOFCs)*, (2009) **ECS Transactions**, 25 (2 PART 2), 1745-1752.
45. E. Fabbri, D. Pergolesi, A. D'Epifanio, E. Di Bartolomeo, G. Balestrino, S. Licoccia, E. Traversa, *Design and fabrication of a chemically-stable proton conductor bilayer electrolyte for intermediate temperature solid oxide fuel cells (IT-SOFCs)*. (2008) **Energy and Environmental Science**, 1 (3), 355- 359.
46. L. Ferrari, F. Gatti, D. Pergolesi, M. Gomes, D. Bagliani, R. Valle, S. Dussoni, L. Piro, L. Colasanti, C. Macculi, C., Barbera, M., Perinati, E., *Study of microcalorimeters for astrophysics applications*. (2008) **Journal of Low Temperature Physics**, 151 (1-2 PART 1), 271-276.
47. D. Pergolesi, V. Esposito, A. Tebano, P.G. Medaglia, S. Sanna, S. Licoccia, G. Balestrino, E. Traversa, *Ceria-based thin film hetero-structure growth and characterization for SOFC applications*. (2007) **ECS Transactions**, 7 (1 PART 1), 891-898.
48. E. Andreotti, et al., *MARE, Microcalorimeter Arrays for a Rhenium Experiment: A detector overview*. (2007) **Nuclear Instruments and Methods in Physics Research A**, 572 (1), 208-210.
49. L. Ferrari, S. Dussoni, F. Gatti, D. Pergolesi, M. Gomes, R. Valle, L. Piro, L. Colasanti, M.F. Toniolo, G. Torrioli, P. Bastia, *Development of TES microcalorimeters for future X-ray missions*, (2006)

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50. D. Pergolesi, L. Gastaldo, F. Gatti, M. Ribeiro Gomes, P. Repetto, S. Dussoni, R. Valle, *MANU-2: A second generation experiment for calorimetric neutrino mass determination with superconducting Re*, (2006) **Nuclear Instruments and Methods in Physics Research A**, 559 (2), 349-351.
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 52. D. Schaeffer, et al., *The MARE project: A new ^{187}Re neutrino mass experiment with sub eV sensitivity*, (2006) **NEUTRINO 2006** - Proceedings of the 22nd International Conference on Neutrino Physics and Astrophysics, 475
 53. L. Gastaldo, G. Gallinaro, F. Gatti, D. Pergolesi, M. Gomes, P. Repetto, S. Dussoni, R. Valle, P. Manfrinetti, A. Chincarini, *Study of the $\delta\text{-Al/Ag}$ superconducting alloy for TES applications*, (2006) **Nuclear Instruments and Methods in Physics Research A**, 559 (2), 465-467.
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