



Alessandro Gallo

Associate Scientist, SLAC National Accelerator Laboratory

Professional

WORK EXPERIENCE

- Staff Scientist - Italian National Council of Research (1/1/2009 - 12/31/2011)
- Postdoc - University of California Santa Barbara (4/1/2012 - 3/1/2015)

Publications

PUBLICATIONS

- **Characterization of a Dynamic Y₂Ir₂O₇ Catalyst during the Oxygen Evolution Reaction in Acid** *JOURNAL OF PHYSICAL CHEMISTRY C*
Hubert, M. A., Gallo, A., Liu, Y., Valle, E., Sanchez, J., Sokaras, D., Sinclair, R., King, L. A., Jaramillo, T. F.
2022
- **Origin of enhanced water oxidation activity in an iridium single atom anchored on NiFe oxyhydroxide catalyst** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Zheng, X., Tang, J., Gallo, A., Torres, J., Yu, X., Athanitis, C. J., Been, E., Ercius, P., Mao, H., Fakra, S. C., Song, C., Davis, R. C., Reimer, et al
2021; 118 (36)
- **Isolating the Electrocatalytic Activity of a Confined NiFe Motif within Zirconium Phosphate** *ADVANCED ENERGY MATERIALS*
Sanchez, J., Stevens, M., Young, A. R., Gallo, A., Zhao, M., Liu, Y., Ramos-Garcés, M. V., Ben-Naim, M., Colon, J. L., Sinclair, R., King, L. A., Bajdich, M., Jaramillo, et al
2021
- **Operando Study of Thermal Oxidation of Monolayer MoS₂** *ADVANCED SCIENCE*
Park, S., Garcia-Esparza, A. T., Abroshan, H., Abraham, B., Vinson, J., Gallo, A., Nordlund, D., Park, J., Kim, T., Vallez, L., Alonso-Mori, R., Sokaras, D., Zheng, et al
2021
- **Tuning the electronic structure of Ag-Pd alloys to enhance performance for alkaline oxygen reduction.** *Nature communications*
Zamora Zeledón, J. A., Stevens, M. B., Gunasooriya, G. T., Gallo, A. n., Landers, A. T., Kreider, M. E., Hahn, C. n., Nørskov, J. K., Jaramillo, T. F.
2021; 12 (1): 620
- **Understanding Selectivity in CO₂ Hydrogenation to Methanol for MoP Nanoparticle Catalysts Using In Situ Techniques** *CATALYSTS*
Duyar, M. S., Gallo, A., Regli, S. K., Snider, J. L., Singh, J. A., Valle, E., McEnaney, J., Bent, S. F., Ronning, M., Jaramillo, T. F.
2021; 11 (1)
- **Identifying and Tuning the In Situ Oxygen-Rich Surface of Molybdenum Nitride Electrocatalysts for Oxygen Reduction** *ACS APPLIED ENERGY MATERIALS*
Stevens, M., Kreider, M. E., Patel, A. M., Wang, Z., Liu, Y., Gibbons, B. M., Statt, M. J., Ievlev, A., Sinclair, R., Mehta, A., Davis, R. C., Nørskov, J. K., Gallo, et al
2020; 3 (12): 12433–46
- **Acidic Oxygen Evolution Reaction Activity-Stability Relationships in Ru-Based Pyrochlores** *ACS CATALYSIS*

- Hubert, M. A., Patel, A. M., Gallo, A., Liu, Y., Valle, E., Ben-Naim, M., Sanchez, J., Sokaras, D., Sinclair, R., Norskov, J. K., King, L. A., Bajdich, M., Jaramillo, et al
2020; 10 (20): 12182–96
- **Low-pressure methanol synthesis from CO₂ over metal-promoted Ni-Ga intermetallic catalysts** *JOURNAL OF CO₂ UTILIZATION*
Duyar, M. S., Gallo, A., Snider, J. L., Jaramillo, T. F.
2020; 39
 - **Ni₅Ga₃ catalysts for CO₂ reduction to methanol: Exploring the role of Ga surface oxidation/reduction on catalytic activity** *APPLIED CATALYSIS B-ENVIRONMENTAL*
Gallo, A., Snider, J. L., Sokaras, D., Nordlund, D., Kroll, T., Ogasawara, H., Kovarik, L., Duyar, M. S., Jaramillo, T. F.
2020; 267
 - **Nitride or Oxynitride? Elucidating the Composition-Activity Relationships in Molybdenum Nitride Electrocatalysts for the Oxygen Reduction Reaction** *CHEMISTRY OF MATERIALS*
Kreider, M. E., Stevens, M., Liu, Y., Patel, A. M., Statt, M. J., Gibbons, B. M., Gallo, A., Ben-Naim, M., Mehta, A., Davis, R. C., Ievlev, A., Norskov, J. K., Sinclair, et al
2020; 32 (7): 2946–60
 - **A versatile Johansson-type tender x-ray emission spectrometer** *REVIEW OF SCIENTIFIC INSTRUMENTS*
Nowak, S. H., Armenta, R., Schwartz, C. P., Gallo, A., Abraham, B., Garcia-Esparza, A. T., Biasin, E., Prado, A., Maciel, A., Zhang, D., Day, D., Christensen, S., Kroll, et al
2020; 91 (3): 033101
 - **Understanding the Origin of Highly Selective CO₂ Electroreduction to CO on Ni, N-doped Carbon Catalysts.** *Angewandte Chemie (International ed. in English)*
Koshy, D. n., Chen, S. n., Lee, D. U., Burke Stevens, M. n., Abdellah, A. n., Dull, S. n., Chen, G. n., Nordlund, D. n., Gallo, A. n., Hahn, C. n., Higgins, D. C., Bao, Z. n., Jaramillo, et al
2020
 - **Excited state charge distribution and bond expansion of ferrous complexes observed with femtosecond valence-to-core x-ray emission spectroscopy.** *The Journal of chemical physics*
Ledbetter, K. n., Reinhard, M. E., Kunnus, K. n., Gallo, A. n., Britz, A. n., Biasin, E. n., Glowonia, J. M., Nelson, S. n., Van Driel, T. B., Weninger, C. n., Zederkof, D. B., Haldrup, K. n., Cordones, et al
2020; 152 (7): 074203
 - **Precious Metal-Free Nickel Nitride Catalyst for the Oxygen Reduction Reaction.** *ACS applied materials & interfaces*
Kreider, M. E., Gallo, A., Back, S., Liu, Y., Siahrostami, S., Nordlund, D., Sinclair, R., Norskov, J. K., King, L. A., Jaramillo, T. F.
2019
 - **Tungstenocene-grafted silica catalysts for the selective epoxidation of alkenes** *APPLIED CATALYSIS A-GENERAL*
Bisio, C., Gallo, A., Psaro, R., Tiozzo, C., Guidotti, M., Carniato, F.
2019; 581: 133–42
 - **A high-throughput energy-dispersive tender X-ray spectrometer for shot-to-shot sulfur measurements.** *Journal of synchrotron radiation*
Abraham, B., Nowak, S., Weninger, C., Armenta, R., Defever, J., Day, D., Carini, G., Nakahara, K., Gallo, A., Nelson, S., Nordlund, D., Kroll, T., Hunter, et al
2019; 26 (Pt 3): 629–34
 - **Development of Molybdenum Phosphide Catalysts for Higher Alcohol Synthesis from Syngas by Exploiting Support and Promoter Effects** *ENERGY TECHNOLOGY*
ten Have, I. C., Valle, E., Gallo, A., Snider, J. L., Duyar, M. S., Jaramillo, T. F.
2019; 7 (5)
 - **Revealing the Synergy between Oxide and Alloy Phases on the Performance of Bimetallic In-Pd Catalysts for CO₂ Hydrogenation to Methanol** *ACS CATALYSIS*
Snider, J. L., Streibel, V., Hubert, M. A., Choksi, T. S., Valle, E., Upham, D., Schumann, J., Duyar, M. S., Gallo, A., Abild-Pedersen, F., Jaramillo, T. F.
2019; 9 (4): 3399–3412
 - **Identification of the active complex for CO oxidation over single-atom Ir-on-MgAl₂O₄ catalysts** *NATURE CATALYSIS*
Lu, Y., Wang, J., Yu, L., Kovarik, L., Zhang, X., Hoffman, A. S., Gallo, A., Bare, S. R., Sokaras, D., Kroll, T., Dagle, V., Xin, H., Karim, et al
2019; 2 (2): 149–56

- **Resolving structures of transition metal complex reaction intermediates with femtosecond EXAFS.** *Physical chemistry chemical physics : PCCP*
Britz, A. n., Abraham, B. n., Biasin, E. n., van Driel, T. B., Gallo, A. n., Garcia-Esparza, A. T., Glowonia, J. n., Loukianov, A. n., Nelson, S. n., Reinhard, M. n., Sokaras, D. n., Alonso-Mori, R. n.
2019
- **Soft X-ray spectroscopy with transition-edge sensors at Stanford Synchrotron Radiation Lightsource beamline 10-1.** *The Review of scientific instruments*
Lee, S. J., Titus, C. J., Alonso Mori, R. n., Baker, M. L., Bennett, D. A., Cho, H. M., Doriese, W. B., Fowler, J. W., Gaffney, K. J., Gallo, A. n., Gard, J. D., Hilton, G. C., Jang, et al
2019; 90 (11): 113101
- **A Highly Active Molybdenum Phosphide Catalyst for Methanol Synthesis from CO and CO₂** *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*
Duyar, M. S., Tsai, C., Snider, J. L., Singh, J. A., Gallo, A., Yoo, J., Medford, A. J., Abild-Pedersen, F., Studt, F., Kibsgaard, J., Bent, S. F., Norskov, J. K., Jaramillo, et al
2018; 57 (46): 15045–50
- **A Strong Support Effect in Selective Propane Dehydrogenation Catalyzed by Ga(i-Bu)₃ Grafted onto gamma-Alumina and Silica** *ACS CATALYSIS*
Szeto, K. C., Jones, Z. R., Merle, N., Rios, C., Gallo, A., Le Quemener, F., Delevoye, L., Gauvin, R. M., Scott, S. L., Taoufik, M.
2018; 8 (8): 7566–77
- **Systematic Structure Property Relationship Studies in Palladium Catalyzed Methane Complete Combustion** *ACS CATALYSIS*
Willis, J. J., Gallo, A., Sokaras, D., Aljama, H., Nowak, S. H., Goodman, E. D., Wu, L., Tassone, C. J., Jaramillo, T. F., Abild-Pedersen, F., Cargnello, M.
2017; 7 (11): 7810–21
- **High-Energy-Resolution X-ray Absorption Spectroscopy for Identification of Reactive Surface Species on Supported Single-Site Iridium Catalysts** *CHEMISTRY-A EUROPEAN JOURNAL*
Hoffman, A. S., Sokaras, D., Zhang, S., Debeve, L. M., Fang, C., Gallo, A., Kroll, T., Dixon, D. A., Bare, S. R., Gates, B. C.
2017; 23 (59): 14760–68
- **Effects of Gold Substrates on the Intrinsic and Extrinsic Activity of High-Loading Nickel-Based Oxyhydroxide Oxygen Evolution Catalysts** *ACS CATALYSIS*
Chakthranont, P., Kibsgaard, J., Gallo, A., Park, J., Mitani, M., Sokaras, D., Kroll, T., Sinclair, R., Mogensen, M. B., Jaramillo, T. F.
2017; 7 (8): 5399–5409
- **Uniform Pt/Pd Bimetallic Nanocrystals Demonstrate Platinum Effect on Palladium Methane Combustion Activity and Stability** *ACS CATALYSIS*
Goodman, E. D., Dai, S., Yang, A., Wrasman, C. J., Gallo, A., Bare, S. R., Hoffman, A. S., Jaramillo, T. F., Graham, G. W., Pan, X., Cargnello, M.
2017; 7 (7): 4372–80
- **Ligand Exchange-Mediated Activation and Stabilization of a Re-Based Olefin Metathesis Catalyst by Chlorinated Alumina** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*
Gallo, A., Fong, A., Szeto, K. C., Rieb, J., Delevoye, L., Gauvin, R. M., Taoufik, M., Peters, B., Scott, S. L.
2016; 138 (39): 12935–47
- **Tuning Composition and Activity of Cobalt Titanium Oxide Catalysts for the Oxygen Evolution Reaction** *ELECTROCHIMICA ACTA*
Seitz, L. C., Nordlund, D., Gallo, A., Jaramillo, T. F.
2016; 193: 240-245
- **Selective Grafting of Ga(i-Bu)₃ on the Silanols of Mesoporous H-ZSM-5 by Surface Organometallic Chemistry** *JOURNAL OF PHYSICAL CHEMISTRY C*
Szeto, K. C., Gallo, A., Hernandez-Morejudo, S., Olsbye, U., De Mallmann, A., Lefebvre, F., Gauvin, R. M., Delevoye, L., Scott, S. L., Taoufik, M.
2015; 119 (47): 26611–19
- **Hydrogen storage over metal-doped activated carbon** *INTERNATIONAL JOURNAL OF HYDROGEN ENERGY*
Rossetti, I., Ramis, G., Gallo, A., Di Michele, A.
2015; 40 (24): 7609–16
- **Silica supported copper and cobalt oxide catalysts for methanol decomposition: Effect of preparation procedure** *BULGARIAN CHEMICAL COMMUNICATIONS*
Tsoncheva, T. S., Genova, I. G., Scotti, N., Dimitrov, M. D., Gallo, A., Kovacheva, D. G., Ravasio, N.
2015; 47 (1): 283–90
- **CoTiOx Catalysts for the Oxygen Evolution Reaction** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*
Seitz, L. C., Pinaud, B. A., Nordlund, D., GORLIN, Y., Gallo, A., Jaramillo, T. F.

2015; 162 (12): H841-H846

- **Control of copper particles deposition in mesoporous SBA-15 silica by modified CVD method** *INORGANICA CHIMICA ACTA*
Tsoncheva, T., Gallo, A., Genova, I., Spassova, I., Marelli, M., Dimitrov, M., Khristova, M., Atanasova, G., Kovacheva, D., Nihtyanova, D., Dal Santo, V.
2014; 423: 145–51
- **Evidence of Facilitated Electron Transfer on Hydrogenated Self-Doped TiO₂ Nanocrystals** *CHEMELECTROCHEM*
Minguzzi, A., Sanchez-Sanchez, C. M., Gallo, A., Montiel, V., Rondinini, S.
2014; 1 (8): 1415–21
- **Tailored copper nanoparticles in ordered mesoporous KIT-6 silica: Preparation and application as catalysts in integrated system for NO removal with products of methanol decomposition** *APPLIED CATALYSIS A-GENERAL*
Tsoncheva, T., Gallo, A., Spassova, I., Dimitrov, M., Genova, I., Marelli, M., Khristova, M., Atanasova, G., Kovacheva, D., Dal Santo, V.
2013; 464: 243–52
- **Niobium metallocenes deposited onto mesoporous silica via dry impregnation as catalysts for selective epoxidation of alkenes** *JOURNAL OF CATALYSIS*
Gallo, A., Tiozzo, C., Psaro, R., Carniato, F., Guidotti, M.
2013; 298: 77–83
- **Nickel Catalysts Supported Over TiO₂, SiO₂ and ZrO₂ for the Steam Reforming of Glycerol** *CHEMCATCHEM*
Rossetti, I., Gallo, A., Dal Santo, V., Bianchi, C. L., Nichele, V., Signoretto, M., Finocchio, E., Ramis, G., Di Michele, A.
2013; 5 (1): 294–306
- **Cluster-derived Ir-Sn/SiO₂ catalysts for the catalytic dehydrogenation of propane: a spectroscopic study** *DALTON TRANSACTIONS*
Gallo, A., Psaro, R., Guidotti, M., Dal Santo, V., Della Pergola, R., Masih, D., Izumi, Y.
2013; 42 (35): 12714–24
- **Epoxidation with hydrogen peroxide of unsaturated fatty acid methyl esters over Nb(V)-silica catalysts** *EUROPEAN JOURNAL OF LIPID SCIENCE AND TECHNOLOGY*
Tiozzo, C., Bisio, C., Carniato, F., Marchese, L., Gallo, A., Ravasio, N., Psaro, R., Guidotti, M.
2013; 115 (1): 86–93
- **Niobium-silica catalysts for the selective epoxidation of cyclic alkenes: the generation of the active site by grafting niobocene dichloride** *PHYSICAL CHEMISTRY CHEMICAL PHYSICS*
Tiozzo, C., Bisio, C., Carniato, F., Gallo, A., Scott, S. L., Psaro, R., Guidotti, M.
2013; 15 (32): 13354–62
- **Bimetallic heterogeneous catalysts for hydrogen production** *CATALYSIS TODAY*
Dal Santo, V., Gallo, A., Naldoni, A., Guidotti, M., Psaro, R.
2012; 197 (1): 190–205
- **Effect of Nitrogen-Containing Impurities on the Activity of Perovskitic Catalysts for the Catalytic Combustion of Methane** *INORGANIC CHEMISTRY*
Buchneva, O., Gallo, A., Rossetti, I.
2012; 51 (21): 11680–87
- **Size controlled copper nanoparticles hosted in mesoporous silica matrix: Preparation and characterization** *APPLIED CATALYSIS B-ENVIRONMENTAL*
Gallo, A., Tsoncheva, T., Marelli, M., Mihaylov, M., Dimitrov, M., Dal Santo, V., Hadjiivanov, K.
2012; 126: 161–71
- **H₂ Production by Renewables Photoreforming on Pt-Au/TiO₂ Catalysts Activated by Reduction** *CHEMSUSCHEM*
Gallo, A., Montini, T., Marelli, M., Minguzzi, A., Gombac, V., Psaro, R., Fornasiero, P., Dal Santo, V.
2012; 5 (9): 1800–1811
- **Influence of reaction parameters on the activity of ruthenium based catalysts for glycerol steam reforming** *APPLIED CATALYSIS B-ENVIRONMENTAL*
Gallo, A., Pirovano, C., Ferrini, P., Marelli, M., Psaro, R., Santangelo, S., Faggio, G., Dal Santo, V.
2012; 121: 40–49
- **Optimization of the preparation procedure of cobalt modified silicas as catalysts in methanol decomposition** *APPLIED CATALYSIS A-GENERAL*
Tsoncheva, T., Gallo, A., Scotti, N., Dimitrov, M., Delaigle, R., Gaigneaux, E. M., Kovacheva, D., Dal Santo, V., Ravasio, N.
2012; 417: 209–19

- **Selective butadiene hydrogenation by Pd nanoparticles deposited onto nano-sized oxide supports by CVD of Pd-hexafluoroacetylacetonate** *INORGANICA CHIMICA ACTA*
Dal Santo, V., Gallo, A., Naldoni, A., Sordelli, L.
2012; 380: 216–22
- **Glycerol steam reforming for hydrogen production: Design of Ni supported catalysts** *APPLIED CATALYSIS B-ENVIRONMENTAL*
Nichele, V., Signoreto, M., Menegazzo, F., Gallo, A., Dal Santo, V., Cruciani, G., Cerrato, G.
2012; 111: 225–32
- **Bimetallic Au-Pt/TiO₂ photocatalysts active under UV-A and simulated sunlight for H₂ production from ethanol** *GREEN CHEMISTRY*
Gallo, A., Marelli, M., Psaro, R., Gombac, V., Montini, T., Fornasiero, P., Pievo, R., Dal Santo, V.
2012; 14 (2): 330–33
- **Structure and catalytic activity of hosted in mesoporous silicas copper species: Effect of preparation procedure and support pore topology** *APPLIED CATALYSIS A-GENERAL*
Tsoncheva, T., Dal Santo, V., Gallo, A., Scotti, N., Dimitrov, M., Kovacheva, D.
2011; 406 (1-2): 13–21
- **Single-site and nanosized Fe-Co electrocatalysts for oxygen reduction: Synthesis, characterization and catalytic performance** *JOURNAL OF POWER SOURCES*
Bambagioni, V., Bianchini, C., Filippi, J., Lavacchi, A., Oberhauser, W., Marchionni, A., Moneti, S., Vizza, F., Psaro, R., Dal Santo, V., Gallo, A., Recchia, S., Sordelli, et al
2011; 196 (5): 2519–29
- **Hydrogen Production by Glycerol Steam Reforming with Ru-based Catalysts: A Study on Sn Doping** *CHEMICAL VAPOR DEPOSITION*
Gallo, A., Pirovano, C., Marelli, M., Psaro, R., Dal Santo, V.
2010; 16 (10-12): 305–10
- **Tailored supported metal nanoparticles by CVD: an easy and efficient scale-up by a rotary bed OMCVD device** *JOURNAL OF MATERIALS CHEMISTRY*
Dal Santo, V., Gallo, A., Gatti, M. M., De Grandi, V., Psaro, R., Sordelli, L., Recchia, S.
2009; 19 (47): 9030–37
- **Supported Rh catalysts for methane partial oxidation prepared by OM-CVD of Rh(acac)(CO)₂** *APPLIED CATALYSIS A-GENERAL*
Dal Santo, V., Mondelli, C., De Grandi, V., Gallo, A., Recchia, S., Sordelli, L., Psaro, R.
2008; 346 (1-2): 126–33
- **Catalytic dehydrogenation of propane over cluster-derived Ir-Sn/SiO₂ catalysts** *CATALYSIS LETTERS*
Guidotti, M., Dal Santo, V., Gallo, A., Gianotti, E., Peli, G., Psaro, R., Sordelli, L.
2006; 112 (1-2): 89–95