

Curriculum Vitae



Personal information

Surname / Name	Pollastri Simone
E-mail	simone.pollastri@unimore.it
Nationality	Italian

Work experience

Dates	2/2023 – now
Position held	Post-Doc Researcher Type A
Responsible	Prof. Roberto Biagi
Activities and responsibilities	Contributor to the development of a setup for <i>operando</i> experiments to be conducted at both the BACH and XAFS beamlines (Elettra synchrotron) for the characterization of innovative catalyst systems for application in fuel cells and electrolyzers. Didactic activity within UniMoRe degree programs.
Employer	FIM, University of Modena and Reggio Emilia, Via Università 4, 41121 Modena (Italy)
Dates	7/2020 – 2/2023
Position held	Post-Doc Researcher at the XRF beamline
Responsible	Dr. Giuliana Aquilanti, Ph.D.
Activities and responsibilities	Local contact of various experiments conducted at both XRF and XAFS beamlines of Elettra synchrotron. Implementation of the beamlines and involvement of new research groups. Collaboration with private industries. Use of In-House Research (IHR) beamtime to collect and analyze data in the frame of collaborations with both Italian and international research groups and/or my own research topic. Didactic and disseminating activity.
Employer	ELETTRA, SS. 14, Km 163.5 in Area Science Park, 34149, Basovizza, Trieste (Italy)
Dates	07/2017 – 6/2020
Position held	Post-Doc Researcher at the XAFS beamline
Responsible	Dr. Giuliana Aquilanti, Ph.D.
Activities and responsibilities	Contributor to the design and development of a fuel cell for <i>operando</i> XAS experiments for the characterization of innovative Pt/ceria catalyst systems. Analysis of XAS data and publication of obtained results. Local contact of various experiments conducted at the XAFS beamline of Elettra synchrotron. Use of In-House Research (IHR) beamtime to collect and analyze data in the frame of collaborations with both Italian and international research groups. Didactic and disseminating activity.
Employer	CERIC – ERIC, SS. 14, Km 163.5 in Area Science Park, 34149, Basovizza, Trieste (Italy)
Dates	04/2016 – 06/2017
Position held	Post-Doc Researcher (University research grant)
Responsible	Prof. Alessandro F. Gualtieri
Activities and responsibilities	Mineralogical and chemical-physical characterization of various asbestos containing materials (ACMs) from Netherlands in view of their recycling through thermal treatment.
Employer	DSCG, University of Modena and Reggio Emilia, Via Università 4, 41121 Modena (Italy)
Dates	01/2013 – 01/2016
Position held	Ph.D. student with grant at the M2SCS doctorate school
Responsible	Prof. Alessandro F. Gualtieri

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Trieste, June 27th, 2024



Activities and responsibilities	Mineralogical, chemical-physical and biological characterization of mineral fibers of social and economic-industrial importance. Collaboration with local ceramic companies for the characterization of natural raw materials and testing of innovative ones.
Employer	DSCG, University of Modena and Reggio Emilia, Via Università 4, 41121 Modena (Italy)
Dates	03/2012 – 06/2012
Position held	Internship
Responsible	Dott. Carlo Albonico
Activities and responsibilities	Development of an analysis protocol to be applied for the characterization of lands containing asbestos in former mines. Sample collection in the Emarèse former mine (Aosta, Italy), preparation and analysis of powders by using: X-ray Powder Diffraction (XRPD), Scanning Electron Microscopy (SEM) and Infrared Spectroscopy (FT-IR). Interpretation of results.
Employer	ARPA Valle d'Aosta, Locality Grande Charrière, 44 – 11020, Saint-Christophe, Aosta (Italy)

Participation in conferences

Oral communications, speaker

- **“Caratterizzazione fisica della reattività di superficie delle fibre minerali”** – Gualtieri A.F., S. Pollastri, M. Hanuskova, E. Neviani - “Geoitalia 2013” 16 - 18 September 2013, Pisa, Italy.
- **“Characterization of geo-inspired binding materials from heat treated cement asbestos”** - S. Pollastri, A. Viani, M. Pérez Estébanez, Gualtieri A.F. - “Congress SGI-SIMP 2014” 10 - 12 September 2014, Milan, Italy.
- **“The chemical environment of iron in mineral fibers. A combined X-ray absorption spectroscopy and Mössbauer study”** - S. Pollastri, Gualtieri A.F., F. D'Acapito, A. Trapananti, I. Colantoni, G.B. Andreozzi - “Congress SGI-SIMP 2014” 10-12 September 2014, Milan, Italy.
- **“In situ μ XANES, μ XRD and XRF iron mapping study of the morphostructural and chemical changes of mineral fibres in contact with cell cultures”** - S. Pollastri, A.F. Gualtieri, K. Ignatyev, E. Strafella, A. Pugnali, A. Croce - “XXIII SILS Meeting” 8-10 July 2015, Trento, Italy.
- **“Dissolution of mineral fibres in contact with simulated lung fluid solutions”** - S. Pollastri, A.F. Gualtieri, N. Bursi Gandolfi, Lassanantti Gualtieri M. & Gherardini D. - “EMC 2016” 11-15 September 2016, Rimini, Italy.
- **“Operando Characterization of Cutting-Edge Fuel Cells Catalysts Using X-Ray Absorption Spectroscopy: Capabilities of the XAFS Beamline at Synchrotron Elettra (Trieste, Italy)”** - S. Pollastri, G. Aquilanti, R. Fiala, M. Bogar, L. Olivi, J. Mysliveček & V. Matolin – “AiMES 2018 ECS and SMEQ Joint International Meeting” September 30 – October 4, 2018, Cancun, Mexico.
- **“In-situ time resolved XAS investigation of Mg in magnesium-potassium phosphate cements”** - A. Viani, S. Pollastri and B. Lassalle – “SILS 2019 meeting” 9-11 September 2019, Camerino, Italy.
- **“A combined XRF and XANES study on bottom ashes from municipal solid waste incinerator”** – S. Pollastri, C. De Matteis, L. Mantovani and M. Tribaudino - “International Conference on Accelerators for Research and Sustainable Development” 22-27 May 2022, Vienna, Austria.
- **“A combined XRF and XANES study on bottom ashes from municipal solid waste-to-energy plant”** – S. Pollastri, C. De Matteis, L. Mantovani and M. Tribaudino - “EXRS 2022” 26 June – 1 July 2022, Bruges, Belgium.
- **“Characterization of bottom ashes from incineration process by means of XRF mapping and XANES spectroscopy”** – S. Pollastri, C. De Matteis, L. Mantovani and M. Tribaudino - “AIC-SILS 2022” 13 September 2022, Trieste, Italy.

Oral communications, co-author (**not** speaker)

- **“Crystal chemistry of cement-asbestos and its high temperature products”** - A. Viani, Gualtieri A.F., S. Pollastri, C. Rinaudo, A. Croce, G. Cruciani - “European Mineralogical Conference 2012” 2 - 6 September 2012, Frankfurt, Germany.
- **“The Concept of End of Waste in View of Developing Sustainable Secondary Geo-Materials”** - Gualtieri A.F., A. Viani, S. Pollastri - “Goldschmidt 2013” 25 - 30 August 2013, Florence, Italy.
- **“The Zeta potential of mineral fibres”** - Gualtieri A.F., S. Pollastri - “IMA 2014” 1 - 5 Sept. 2014, Johannesburg, South Africa.

- **“Mineralogical and crystal chemical characterization of hazardous mineral fibres of social and economic importance”** - Gualtieri A.F., S. Pollastri, E. Barrese, A. Bloise, E. Belluso, F. Belpoggi, A. Cavallo, A. Croce, M. Lezzerini, N. Perchiazzi, A. Pugnali, B. Rimoldi, C. Rinaudo - “IMA 2014” 1 - 5 September 2014, Johannesburg, South Africa.
- **“Kinetic analysis of the setting reaction of magnesium-potassium phosphate ceramics: influence of MgO reactivity”** - Gualtieri A.F., A. Viani, M. Pérez Estébanez, S. Pollastri - “IMA 2014” 1 - 5 September 2014, Johannesburg, South Africa.
- **“Chemical environment of iron in mineral fibres determined by XAS experiments”** - Gualtieri A.F., S. Pollastri, F. D'Acapito, A. Trapanati, S. Quartieri - “IMA 2014” 1 - 5 September 2014, Johannesburg, South Africa.
- **“Medieval natural hydraulic lime mortars: characterisation of the Modena UNESCO site”** - M. Caroselli, S. Lugli, A.F. Gualtieri, S. Marchetti Dori, N. Bursi Gandolfi, S. Pollastri - “Convegno Calce 2014” 20-22 November 2014, Milan, Italy.
- **“Study of the asbestos bodies and chemical physical modification of mineral fibres in rat histological tissues using electron microscopy and microRaman spectroscopy”** - N. Bursi Gandolfi, S. Pollastri, A.F. Gualtieri, A. Viani - “ECMS 2015” 9-11 September 2015, Rome, Italy.
- **“High resolution TEM investigation of mineral fibres in contact with organic media”** - N. Bursi Gandolfi, S. Pollastri, A.F. Gualtieri, Langenhorst F., Belpoggi F. & Vigliaturo R. - “EMC 2016” 11-15 September 2016, Rimini, Italy.
- **“In vitro acellular dissolution of mineral fibres”** - A.F. Gualtieri, S. Pollastri, N. Bursi Gandolfi, Lassinantti Gualtieri M. - “IPTC 2016” 26-30 September 2016, Singapore, Singapore.
- **“A multidisciplinary study unveils the nature of a Roman ink of the I century AD”** - C.M. Stani, L. Gigli, S. Pollastri, M. Sibilia, A. Migliori, F. D'Amico, C. Schmid, S. Licen, M. Crosera, G. Adami, P. Barbieri, J. R. Plaisier, G. Aquilanti, L. Vaccari, S. Buson, F. Gonzato - “25th IUCr Congress” 14-22 August 2021, Prague, Czech Republic.
- **“XAS, IR and XRD analysis for structural characterization of rare minerals: new occurrence of demantoid garnets in Sa Spinabedda mine (Sardinia – Italy)”** - N. Precisvalle, A. Martucci, C. Bonadiman, S. Pollastri and C. Stani - “25th IUCr Congress” 14-22 August 2021, Prague, Czech Republic.
- **“Characterization of unique aerosol pollution episodes in urban areas using x-ray fluorescence and absorption methods”** - O. Czömpöly, J. Osán, S. Török, V. Groma, E. Börcsök and S. Pollastri - “EXSA2021” 21-24 June 2021, virtual event.
- **“X-ray fluorescence and absorption methods for identifying sources of urban aerosol pollution episodes”** - J. Osán, O. Czömpöly, V. Groma, E. Börcsök and S. Pollastri - “IMA 2021” 20-23 September 2021, virtual event.
- **“PTE speciation in bottom ashes from municipal solid waste incinerator: a combined SEM-EDS, XRF and XANES by synchrotron radiation study”** - De Matteis C., Pollastri S., Mantovani L. & Tribaudino M. - “Congress SGI-SIMP 2023” 19-21 September 2023, Potenza, Italy.
- **“Electrochemical cell for SAXS and XAS characterization of catalyst degradation in PEM fuel cells and water electrolyzers”** - Bogar, M., Yakovlev, Y., Pollastri, S., & Taccani, R. - “World Fuel Cell Conference 2023” 11-13 December 2023, Imperial College London, UK.

Poster communications, presenter

- **“Mineralogical characterization of mineral fibers”** - S. Pollastri, A.F. Gualtieri, N. Perchiazzi, A. Cavallo, A. Bloise - “XXIII SILS Meeting” 8-10 July 2015, Trento, Italy.
- **“The crystal structure of mineral fibres”** - Gualtieri A.F., Pollastri S., Bursi Gandolfi N., Perchiazzi N., Plaisier J.R., Lezzerini M. & Gialanella S. - “EMC 2016” 11 - 15 September 2016, Rimini, Italy.
- **“X-ray absorption spectroscopy for the characterization of fuel cells catalysts *in operando* conditions: Capabilities of the XAFS beamline at synchrotron Elettra (Trieste, Italy)”** - S. Pollastri, G. Aquilanti, R. Fiala, M. Bogar, L. Olivi, J. Mysliveček & V. Matolin. - “3rd Joint AIC-SILS conference” 25 - 28 June 2018, Rome, Italy.

Poster communications, co-author (not presenter)

- **“Micro-Raman spectroscopy, a powerful technique for the study of fibrous minerals”** - C. Rinaudo, A. Croce, M. Allegrina, Gualtieri A.F., S. Pollastri - “Geoitalia 2013” 16-18 September 2013, Pisa, Italy.

- **“MS-9-P-1726 Transformations through pseudomorphosis of asbestos minerals in thermally processed asbestos-containing materials investigated through SEM/EDS and micro-Raman spectroscopy: implications for recycling of hazardous wastes”** - A. Viani, Gualtieri A.F., P. Mácová, S. Pollastri - “18th International Microscopy Congress” 7-12 September 2014, Prague, Czech Republic.
- **“Ti K-edge XANES study of the barium titanosilicates BaTiSi₂O₇ and BaTiSi₄O₁₁”** - A. Viani, S. Pollastri, P. Mácová, A. Palermo, M. Pérez-Estébanez, A.F. Gualtieri - “XXIII SILS Meeting” 8-10 July 2015, Trento, Italy.
- **“Structural and physical - chemical variation of mineral fibres in histological tissue revealed by synchrotron X – ray diffraction and scanning electron microscopy”** - N. Bursi Gandolfi, S. Pollastri, A.F. Gualtieri - “XXIII SILS Meeting” 8 - 10 July 2015, Trento, Italy.
- **“Trace elements in hazardous mineral fibres”** - Bloise A., Barca D., Gualtieri A.F., Pollastri S. & Belluso E. - “EMC 2016” 11 - 15 September 2016, Rimini, Italy.
- **“Analysis of copper corrosion in binary bronze alloys by XANES and complementary spectroscopic methods”** – D. Šatović, V. Desnica, S. Fazinić, M. Buljan, I. Božicević Mihalić, G. Aquilanti & S. Pollastri – “European Conference on X-Ray Spectrometry” 24 – 29 June 2018, Ljubljana, Slovenia.
- **“In situ SAXS/XAS characterization of PEMFC: a preliminary study”** - Bogar, M., Pollastri, S., Fiala, R., Vaclavu, M., Myslivecek, J., Aquilanti, G., Matolin, V., & Amenitsch, H. Poster session presented at 2nd NFFA Summer School 2018, Trieste, Italy.
- **“Insights on ga-ferrierite catalyst: x-ray powder diffraction characterization at ambient conditions”** - G. Beltrami, L. Pasti, T. Chenet, L. Gigli, S. Pollastri, G. Aquilanti, A. Martucci – “Jointly meeting of AIZ, CIS and GIC” 11 – 14 June 2019, Amantea, Italy.
- **“Structural characterization of Ga-Ferrierite, combining synchrotron high pressure XRPD and XAS experiments”** – L. Gigli, G. Beltrami, S. Pollastri, G. Aquilanti, M. Amboage, F. G. Alabarse, A. Martucci – “SILS 2019 meeting” 9 - 11 September 2019, Camerino, Italy.
- **“XRF and XANES analysis in bottom ashes from municipal solid waste incinerator (MSWI)”** - De Matteis C., Mantovani L., Pollastri S. and Tribaudino M. – “EMC 2020” 29 August – 2 September 2021 – Krakow, Poland.
- **“Towards detection and identification of lead in aerosol samples collected in an urban area in Amman, Jordan”** – H. Sa’adeh, M. Chiari, S. Pollastri and G. Aquilanti - “International Conference on Accelerators for Research and Sustainable Development” 22-27 May 2022, Vienna, Austria.
- **“Application of X-ray fluorescence methods in metal uptake studies of argillaceous rocks”** – O. Czömpöly, M. Fábíán, S. Pollastri and J. Osán - “EXRS 2022” 26 June – 1 July 2022, Bruges, Belgium.

Publications

Articles published in peer-reviewed journals

- 1) Viani, A., Gualtieri, A.F., Pollastri, S., Rinaudo, C., Croce, A., & Urso, G. (2013). **Crystal chemistry of the high temperature product of transformation of cement-asbestos.** *Journal of hazardous materials*, 248, 69-80.
- 2) Gualtieri, A.F., Pollastri, S., Gandolfi, N.B., Ronchetti, F., Albonico, C., Cavallo, A., Zanetti, G., Marini, P., & Sala, O. (2014). **Determination of the concentration of asbestos minerals in highly contaminated mine tailings: An example from abandoned mine waste of Crètaz and Èmarese (Valle d’Aosta, Italy).** *American Mineralogist*, 99(7), 1233-1247.
- 3) Pollastri, S., Gualtieri, A.F., Gualtieri, M.L., Hanuskova, M., Cavallo, A., & Gaudino, G. (2014). **The zeta potential of mineral fibres.** *Journal of hazardous materials*, 276, 469-479.
- 4) Croce, A., Allegrina, M., Trivero, P., Rinaudo, C., Viani, A., Pollastri, S., & Gualtieri, A.F. (2014). **The concept of ‘end of waste’ and recycling of hazardous materials: in depth characterization of the product of thermal transformation of cement-asbestos.** *Mineralogical Magazine*, 78(5), 1177-1191.
- 5) Gualtieri, M.L., Romagnoli, M., Pollastri, S., & Gualtieri, A.F. (2015). **Inorganic polymers from laterite using activation with phosphoric acid and alkaline sodium silicate solution: Mechanical and microstructural properties.** *Cement and Concrete Research*, 67, 259-270.
- 6) Pollastri, S., D’Acapito, F., Trapananti, A., Colantoni, I., Andreozzi, G.B., & Gualtieri, A.F. (2015). **The chemical environment of iron in mineral fibres. A combined X-ray absorption and Mössbauer spectroscopic study.** *J. of hazardous materials*, 298, 282-293.

- 7) Viani, A., Pérez-Estébanez, M., Pollastri, S., & Gualtieri, A.F. (2016). **In situ synchrotron powder diffraction study of the setting reaction kinetics of magnesium-potassium phosphate cements.** *Cement and Concrete Research*, 79, 344-352.
- 8) Gandolfi, N.B., Gualtieri, A.F., Pollastri, S., Tibaldi, E., & Belpoggi, F. (2016). **Assessment of asbestos body formation by high resolution FEG-SEM after exposure of Sprague-Dawley rats to chrysotile, crocidolite, or erionite.** *Journal of hazardous materials*, 306, 95-104.
- 9) Viani, A., Pollastri, S., Mácová, P., Palermo, A., Pérez-Estébanez, M., Gualtieri, A.F. (2016). **XANES and micro-Raman spectroscopy study of the barium titanosilicates BaTiSi₂O₇ and BaTiSi₄O₁₁.** *Applied Physics A*, 122, 1-9.
- 10) Bloise, A., Barca, D., Gualtieri, A.F., Pollastri, S., & Belluso, E. (2016). **Trace elements in hazardous mineral fibres.** *Environmental Pollution*, 216, 314-323.
- 11) Pollastri, S., Gualtieri, A.F., Vigliaturo, R., Ignatyev, K., Strafella, E., Pugnali, A., & Croce, A. (2016). **Stability of mineral fibres in contact with human cell cultures. An in situ μ XANES, μ XRD and XRF iron mapping study.** *Chemosphere*, 164, 547-557.
- 12) Pollastri, S., Perchiazzi N., Lezzerini M., Plaisier J. R., Cavallo A., Dalconi M.C., Gandolfi, N.B. & Gualtieri, A.F. (2016). **The crystal structure of mineral fibres: 1. Chrysotile.** *Periodico di Mineralogia*, 85(3), 249-259 .
- 13) Gualtieri, A.F., Gandolfi, N.B., Pollastri, S., Pollok, K. & Langenhorst, F. (2016). **Where is iron in erionite? A multidisciplinary study on fibrous erionite-Na from Jersey (Nevada, USA).** *Scientific Reports*, 6, 37981.
- 14) Pollastri, S., Perchiazzi, N., Gigli, L., Ferretti, P., Cavallo, A., Bursi Gandolfi, N., Pollok K. & Gualtieri, A.F. (2017). **The crystal structure of mineral fibres: 2. Amosite and fibrous anthophyllite.** *Periodico di Mineralogia*, 86(1), 55-65.
- 15) Gualtieri, A.F., Gandolfi, N.B., Pollastri, S., Burghammer, M., Tibaldi, E., Belpoggi, F., Pollok, K., Langenhorst, F., Vigliaturo, R. & Dražić, G. (2017). **New insights into the toxicity of mineral fibres: a combined in situ synchrotron micro-XRD and HR-TEM study of chrysotile, crocidolite, and erionite fibres found in the tissues of Sprague-Dawley rats.** *Toxicology Letters*, 274, 20-30.
- 16) Pollastri, S., Gigli, L., Ferretti, P., Andreozzi, G.B., Gandolfi, N.B., Pollok, K., & Gualtieri, A.F. (2017). **The crystal structure of mineral fibres. 3. Actinolite asbestos.** *Periodico di Mineralogia*, 86(2), 89-98.
- 17) Gualtieri, A.F., Gandolfi, N.B., Pollastri, S., Rinaldi, R., Sala, O., Martinelli, G., ... & Vigliaturo, R. (2018). **Assessment of the potential hazard represented by natural raw materials containing mineral fibres—The case of the feldspar from Orani, Sardinia (Italy).** *Journal of hazardous materials*, 350, 76-87.
- 18) Shit, S. C., Singuru, R., Pollastri, S., Joseph, B., Rao, B. S., Lingaiah, N., & Mondal, J. (2018). **Cu-Pd bimetallic nanoalloy anchored on a N-rich porous organic polymer for high-performance hydrodeoxygenation of biomass-derived vanillin.** *Catalysis Science & Technology*, 8(8), 2195-2210
- 19) Gualtieri, A.F., Gandolfi, N.B., Passaglia, E., Pollastri, S., Mattioli, M., Giordani, M., Ottaviani, M.F., Cangiotti M., Bloise, A., Barca, D., Vigliaturo, R., Viani, A., Pasquali, L. & Gualtieri M.L. (2018). **Is fibrous ferrierite a potential health hazard? Characterization and comparison with fibrous erionite.** *American Mineralogist: Journal of Earth and Planetary Materials*, 103(7), 1044-1055.
- 20) Della Ventura, G., Vigliaturo, R., Gieré, R., Pollastri, S., Gualtieri, A., & Iezzi, G. (2018). **Infra Red Spectroscopy of the Regulated Asbestos Amphiboles.** *Minerals*, 8(9), 413.
- 21) Gualtieri, A.F., Pollastri, S., Gandolfi, N. B., & Gualtieri, M. L. (2018). **In vitro acellular dissolution of mineral fibres: A comparative study.** *Scientific reports*, 8(1), 7071.
- 22) Vigliaturo, R., Pollastri, S., Gieré, R., Gualtieri, A.F., & Dražić, G. (2019). **Experimental quantification of the Fe-valence state at amosite-asbestos boundaries using acSTEM dual-electron energy-loss spectroscopy.** *Am. Mineralogist*, 104(12), 1820-1828.
- 23) Beltrami, G., Chenet, T., Pasti, L., Gigli, L., Pollastri, S., & Martucci, A. (2020). **Insights on Ga-zeolite catalysts: X-ray powder diffraction and absorption spectroscopy characterization at ambient conditions.** *Catalysis Today*, 345, 147-156.
- 24) Koley, P., Chandra Shit, S., Joseph, B., Pollastri, S., Sabri, Y. M., Mayes, E. L., ... & Mondal, J. (2020). **Leveraging Cu/CuFe₂O₄-catalyzed biomass-derived furfural hydrodeoxygenation: a nanoscale metal-organic-framework template is the prime key.** *ACS applied materials & interfaces*, 12(19), 21682-21700.

- 25) Ibadat, S., Younas, M., Shahzada, S., Nadeem, M., Ali, T., Akhtar, M. J., Pollastri, S., Rehman, U.-U., Yousef, I. & Khan, R. T. A. (2020). **Realistic dielectric response of high temperature sintered ZnO ceramic: a microscopic and spectroscopic approach.** *RSC Advances*, 10(51), 30451-30462.
- 26) Zelano, I. O., Cloquet, C., van der Ent, A., Echevarria, G., Gley, R., Landrot, G., Pollastri, S., Fraysse, F. & Montargès-Pelletier, E. (2020). **Coupling nickel chemical speciation and isotope ratios to decipher nickel dynamics in the Rinorea cf. bengalensis-soil system in Malaysian Borneo.** *Plant and Soil*, 454(1), 225-243.
- 27) Gao, Q., Sun, Y., Shi, N., Milazzo, R., Pollastri, S., Olivi, L., ... & Chen, J. (2020). **Large isotropic negative thermal expansion in water-free Prussian blue analogues of $\text{ScCo}(\text{CN})_6$.** *Scripta Materialia*, 187, 119-124.
- 28) Pugliese, G. M., Stramaglia, F., Capone, F. G., Hacisalihoglu, M. Y., Kiyama, R., Sogabe, R., Goto, Y., Pollastri, S., De Souza, D.O., Olivi, L., Mizokawa, T., Mizuguchi, Y. & Saini, N. L. (2020). **Local structure displacements in $\text{La}_{1-x}\text{Ce}_x\text{O}_{1.5}\text{Sb}_{0.5}$ as a function of Ce substitution.** *Journal of Physics and Chemistry of Solids*, 147, 109648.
- 29) Chen, S., Abdel-Mageed, A. M., Dyballa, M., Parlinska-Wojtan, M., Bansmann, J., Pollastri, S., ... & Behm, R. J. (2020). **Raising the CO_x Methanation Activity of a Ru/γ-Al₂O₃ Catalyst by Activated Modification of Metal-Support Interactions.** *Angewandte Chemie International Edition*, 59(50), 22763-22770.
- 30) Contessi, S., Dalconi, M. C., Pollastri, S., Calgaro, L., Meneghini, C., Ferrari, G., ... & Artioli, G. (2021). **Cement-stabilized contaminated soil: Understanding Pb retention with XANES and Raman spectroscopy.** *Science of The Total Environment*, 752, 141826.
- 31) Petrovicova, B., Ferrara, C., Brugnetti, G., Ritter, C., Fracchia, M., Ghigna, P., Pollastri, S., Triolo, C., Spadaro, L., Ruffo, R. & Santangelo, S. (2021). **Effect of Germanium Incorporation on the Electrochemical Performance of Electrospun Fe₂O₃ Nanofibers-Based Anodes in Sodium-Ion Batteries.** *Appl. Sci*, 11, 1483.
- 32) Nevgi, R., Pollastri, S., Aquilanti, G. & Priolkar, K.R. (2021). **Structural defects responsible for the strain glassy transition in $\text{Ni}_{50+x}\text{Ti}_{50-x}$.** *Physical Review B*, 103(6), 064108.
- 33) Kugler, S., Nagy, A., Osán, J., Péter, L., Groma, V., Pollastri, S., & Czitrovszky, A. (2021). **Characterization of the ultrafine and fine particles formed during laser cladding with the Inconel 718 metal powder by means of X-ray spectroscopic techniques.** *Spectrochimica Acta Part B: Atomic Spectroscopy*, 177, 106110.
- 34) Migliorati, V., Fazio, G., Pollastri, S., Gentili, A., Tomai, P., Tavani, F., & D'Angelo, P. (2021). **Solubilization properties and structural characterization of dissociated HgO and HgCl₂ in deep eutectic solvents.** *Journal of Molecular Liquids*, 329, 115505.
- 35) Sibilia, M., Stani, C., Gigli, L., Pollastri, S., Migliori, A., D'Amico, F., ... & Gonzato, F. (2021). **A multidisciplinary study unveils the nature of a Roman ink of the I century AD.** *Scientific reports*, 11(1), 1-12.
- 36) Das, S. K., Das, A., Gaboardi, M., Pollastri, S., Dhamale, G. D., Balasubramanian, C., & Joseph, B. (2021). **Large scale synthesis of copper nickel alloy nanoparticles with reduced compressibility using arc thermal plasma process.** *Scientific reports*, 11(1), 1-9.
- 37) Marmiroli, M., Pagano, L., Rossi, R., De La Torre-Roche, R., Lepore, G. O., Ruotolo, R., Gariani, G., Bonanni, V., Pollastri, S., Puri, A., Gianoncelli, A., Aquilanti, G., d'Acapito, F., White, J. C. & Marmiroli, N. (2021). **Copper Oxide Nanomaterial Fate in Plant Tissue: Nanoscale Impacts on Reproductive Tissues.** *Environmental Science & Technology*, 55(15), 10769-10783.
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- 61) Ghezzi, L., Mugnaioli, E., Perchiazzi, N., Duce, C., Pelosi, C., Zamponi, E., Pollastri, S., Campanella, B., Onor, M., Abdellatief, M., Franceschini, F. & Petrini, R. (2023) **Hexavalent chromium release over time from a pyrolyzed Cr-bearing tannery sludge.** *Scientific Reports*, 13(1), 16283.
- 62) Ardit, M., Sonia, C., Donato, B., Francesca, M., Pollastri, S., Cruciani, G., Dondi, M. (2023) **Structure evolution of Ge-doped CaTiO_3 (CTG) at high pressure: Search for the first 2:4 locked-tilt perovskite.** *Inorganic Chemistry*. In press

submitted in peer-reviewed journals

- 1) Ivanco, J., Pollastri, S. & Hofbauerová, M. (202X) **Chemical transformation in iron-oxide nanoparticles induced by elevated temperature and trace concentration of acetone vapours: an in-situ X-ray absorption spectroscopic study.** *Materials Research Bulletin*. Manuscript number: MRB-D-22-01208
- 2) De Matteis, C., Pollastri, S., Mantovani, L., Tribaudino, M. (202X) **Potentially Toxic Elements speciation in Bottom Ashes from Municipal Solid Waste Incinerator: a combined SEM-EDS, XRF and XANES study.** *Science of the Total Environment*. Manuscript Number: STOTEN-D-23-08874
- 3) Sułowska, J., Szumera, M., Berezicka, A., Olejniczak, Z., Stępień, J., Pollastri, S. & Olivi, L. (202X) **Effects of P_2O_5 on the structure of sulfur-free and sulfur-bearing silicate-phosphate glasses.** *Journal of the European Ceramic Society*. Manuscript Number: JECESOC-D-23-01971

Book chapters

- 1) Andreozzi, G.B. and Pollastri, S. (2017). **Bulk spectroscopy of mineral fibers.** Chapter 4 in *EMU Notes in Mineralogy*, 18, 111-134.

Other publications not subjected to peer-review:

- 1) Gualtieri, A.F., Canovi, L., Pollastri, S., Viani, A., Bertocchi, P., Corradini, C., Gualtieri, M.L., Berthier, S. & Barillaro, A. (2013). **Lustre effect of scheelite-based glazes.** *C+CA. Ceramurgia + Ceramica acta*, 1 april 2013, 23-34.
- 2) Pollastri, S. (2016). **Crystal chemistry and physical-chemical characterization of mineral fibres aimed at understanding their toxicity potential.** *Plinius* n. 42, 69-76.
- 3) Gualtieri, A.F., Gandolfi, N.B., Pollastri, S., Pollok, K. & Langenhorst, F. (2016). **Where is iron in erionite? A multidisciplinary study on fibrous erionite-Na from Jersey (Nevada, USA).** *Elettra Highliths 2016-2017*, 24-25.
- 4) Sibilia, M., Stani, C., Gigli, L., Pollastri, S., Migliori, A., D'Amico, F., Schmid, C., Licen, S., Crosera, M., Adami, G., Barbieri, P., Plaisier, J.R., Aquilanti, G., Vaccari, L., Buson, S. & Gonzato, F. (2021). **The original recipe of a Roman ink of the I century AD disclosed by a multidisciplinary study.** *Elettra Highliths 2020-2021*, 64-65.
- 5) Pollastri, S., Bogar, M., Fiala, R., Amenitsch, H., Yakovlev, Y., Lavacchi, A., ... & Matolin, V. (2022). **Fuel cells catalyst of the future investigated by means of ex situ and operando X-Ray Absorption Spectroscopy.** *Elettra Highliths 2021-2022*, 34-35.
- 6) Czömpöly, O., Börcsök, E., Groma, V., Pollastri, S., & Osán, J. (2022) **Application of x-ray spectroscopy methods in the pursue of particulate matter sources in urban areas.** *Elettra Highliths 2021-2022*, 50-51.
- 7) Marmiroli, M., Pagano, L., Rossi, R., De La Torre-Roche, R., Lepore, G. O., Ruotolo, R., Gariani, G., Bonanni, V., Pollastri, S., Puri, A., Gianoncelli, A., Aquilanti, G., d'Acapito, F., White, J. C. & Marmiroli, N. (2022). **Potential of Cu-based nanomaterials in agriculture: The role of nano CuO as fertilizers in zucchini.** *Elettra Highliths 2021-2022*, 56-57.
- 8) Gomez, M. A., Ma, X., Chen, Y., Wang, S., Pollastri, S., Aquilanti, G., ... & Xiao, T. (2023). **Determination of As (V), Se (VI) and Mo (VI) bonding environments in $\text{MgAlFe(III)CO}_3\text{SO}_4$ Hydrotalcites relevant to Uranium mill neutralization processes and tailings.** Preprint. <https://doi.org/10.21203/rs.3.rs-2403820/v1>

Submissions not subjected to peer-review:

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Seminars

- **Viaggio alla scoperta della piastrella ceramica.** Seminar for dissemination purposes for high schools, I.T.A.S. Francesco Selmi, viale Leonardo da Vinci 300, 41126 Modena (Italy), October 9th 2013.
- **Synchrotron radiation - Introduction ad applications: the example of X-Ray Absorption Spectroscopy (XAS).** Seminar within the course of Mineralogy II (undergraduate degree in Geological Sciences L-34, University of Modena and Reggio Emilia), Modena (Italy), October 23th 2014.
- **Synchrotron radiation - Introduction ad applications: the example of X-Ray Absorption Spectroscopy (XAS).** Seminar within the course of Mineralogy II (undergraduate degree in Geological Sciences L-34, University of Modena and Reggio Emilia), Modena (Italy), November 10th 2015.
- **The paramount role of biodurability in the model of toxicity of mineral fibers.** Seminar for dissemination purposes for high schools, I.S. Sobrero, Via Candiani d'Olivola 19, 15033 Casale Monferrato (Italy), December 4th 2016.
- **Research highlights at the XAFS beamline of Elettra (Trieste, Italy).** Seminar within the HERCULES 2019 European School, Trieste (Italy), April 4th 2019.
- **Research highlights at the XAFS beamline of Elettra (Trieste, Italy).** Seminar within synchrotron tutorial organized for the students of Graz University of Technology/Montan University Leoben, May 15th 2019.
- **XAFS and XRF: Two complementary beamlines at Elettra.** Webinar organized in collaboration with GNM (National Group of Mineralogy) and Prof. Annalisa Martucci of the University of Ferrara, 16th November 2020.
- **Data collection at the XAFS beamline: A tunable sample station for solids, liquids and gases.** Webinar within the HERCULES 2021 European School, Trieste (Italy), 19th March 2021.

Outreach/dissemination activities through TV, radio and social media

- Interview for the radio broadcast RADAR (radio RAI) on the CEROP project (CERIC research project) for which measurements were conducted both at the XAFS and XRF beamlines. 14th July 2020. Available at the following link: <https://www.youtube.com/watch?v=ysJkRnZI01I>
- Invited speaker with Prof. Rodolfo Tacani and Dr. Benedetta Marmiroli for the round table entitled: "Oltre le fonti fossili: il futuro dell'energia" moderated by Davide Montesarchio and organized in the frame of "Trieste Next 2022". 23th September 2022, 15:00 - 16:15, Museo Revoltella, Trieste, Italy. Available at the following link: <https://www.youtube.com/watch?v=fkVZxWRfuyA&feature=youtu.be>
- Interview for the Tv section of Area Science Park on the current status of the scientific research in the field of hydrogen-based fuel cells. 23th September 2022. Available at the following link: <https://www.youtube.com/watch?v=MMNs6zjX910>
- Article published in the local newspaper "Il Piccolo", edition dated 11/15/2022 in the scientific section "Oltre il giardino", about my history in the world of research and focus on my contribution in the field of fuel cell catalysts.
- Abstract published in the CERIC-ERIC annual report 2022, in the section "Excellent Science", regarding recent achievements in the field of fuel cell catalysts: https://www.ceric-eric.eu/wp-content/uploads/2023/06/CERIC_Report2022-GA.pdf

Didactic activity

Correlator

Academic Year 2012 - 2013	"Physical characterization of the surface reactivity of mineral fibers" Graduating: E. Neviani - Supervisor: Prof. A.F. Gualtieri, June 28 th 2013. "Characterization and potential uses of a new clayey raw material from the north of Sweden" Graduating: S. Lofino - Supervisor: Prof. A.F. Gualtieri, February 28 th 2014.
Academic Year 2013 - 2014	"Formulazione di miscele innovative di grès porcellanato con parziale sostituzione delle argille provenienti dall'Ucraina" Graduating: A. Bettelli - Supervisor: Prof. A.F. Gualtieri, October 23 th 2014.

Academic Year **"Analisi mineralogiche e granulometriche dei fanghi delle Salse di Nirano (Mo)"**

2014 - 2015 Graduating: F. Talmi - Supervisor: Prof. M.G. Vezzalini - December 23th 2015.

"Dissoluzione in vitro delle fibre minerali: 1. Crisotilo"

Graduating: A. Malavasi - Supervisor: Prof. A.F. Gualtieri - April 13th 2016.

Academic Year **"Dissoluzione in vitro delle fibre minerali: 2. Crocidolite, tremolite ed erionite"**

2015 - 2016 Graduating: D. Gherardini - Supervisor: Prof. A.F. Gualtieri - July 28th 2016.

"La ferrierite fibrosa: Una nuova fibra minerale potenzialmente tossica non regolata?"

Graduating: M. Fanelli - Supervisor: Prof. A.F. Gualtieri - December 12th 2016.

"Study of the product of *in vitro/in vivo* dissolution of chrysotile asbestos"

Graduating: C. Campioli - Supervisor: Prof. A.F. Gualtieri - December 12th 2016.

Professor

Academic Year **"Advanced spectroscopic and imaging methods - P268-056"**

2022 - 2023 SSD FIS/01, 16-268 – Master's degree course - Physics (D.M.270/04). 16 hours

Titolare: Prof. Roberto Biagi

"Fisica Generale"

SSD FIS/01, 20-210 – Bachelor degree course: Ingegneria civile e ambientale (D.M.270/04). 15 hours

Titolare: Prof. Luca Pasquali

Academic Year **"Advanced spectroscopic and imaging methods - P268-056"**

2023 - 2024 SSD FIS/01, 16-268 – Master's degree course - Physics (D.M.270/04). 16 hours

Titolare: Prof. Roberto Biagi

"Fisica Generale"

SSD FIS/01, 20-210 – Bachelor degree course: Ingegneria civile e ambientale (D.M.270/04). 15 hours

Titolare: Prof. Luca Pasquali

"Fisica Generale"

SSD FIS/01-03, 20-210 – Bachelor degree course: Ingegneria del veicolo (D.M.270/04). 20 hours

Titolari: Prof. Elisa Molinari; Prof. Enrico Bertuzzo; Prof. Giuseppe Cantarella

"Laboratorio di Fisica II"

SSD FIS/01, 20-210 – Bachelor degree course: Physics (D.M.270/04). 10 hours

Titolare: Prof. Valentina De Renzi

Participation to specialization courses and workshops

Participant

- **"Crystallography Beyond Diffraction, 2nd edition"** - Camerino (Italy), 4 - 8 September 2013.
- **"1st European Crystallography School"** - Pavia (Italy), 28 August - 6 September 2014.
- **"La fisica dei minerali"** - Brixen (Italy), 2 - 5 February 2015.
- **"To.Sca.Lake - Total Scattering for Nanotechnology on the Como Lake"** - Como (Italy), 25 - 28 May 2015.

Co-organizer/speaker

- **"Mineral fibres: Crystal chemistry, chemical-physical properties, biological interaction and toxicity"** - EMU International School 2017. Modena (Italy), 19 - 23 June 2017.
- **"Training Workshop on Instrumentation for Synchrotron Radiation Experiments"** - Organized by IAEA and hosted at Elettra Sincrotrone. Trieste (Italy), 7-11 October 2019.
- **"Training Workshop on Synchrotron Technologies and Techniques and their Applications"** - Organized by IAEA and hosted at Elettra Sincrotrone. Trieste (Italy), 25-29 July 2022.

Training periods abroad

Dates	02/2014 – 04/2014
Main activities	Learn methodologies at the base of X-Ray Absorption Spectroscopy techniques and acquire competencies for EXAFS and XANES data analysis using IFEFFIT programs suite.
Facility	BM08 – LISA (ex GILDA) beamline at the European Synchrotron Radiation Facility (ESRF), 71 avenue des Martyrs, 38000 Grenoble, (France).
Supervisor	Francesco D'Acapito, beamline responsible.

Education and training

Date of graduation	June 29 th 2012
Title of qualification awarded	Master degree in geological sciences and technologies (score 110/110 cum laude)
Main issues / occupational skills	Qualitative and quantitative phase analysis with the Rietveld method; calcimetry; loss on ignition. Using GIS program for the construction of thematic maps. Basic knowledge of XRF chemical analysis, mass spectrometry and Micro-Raman. Characterization of ceramic materials.
Name and type of organization	University of Modena and Reggio Emilia (college), Via Università 4, 41121 Modena (Italy)
Date of graduation	December 22 th 2009
Title of qualification awarded	Three-year degree in geology (score 101/110)
Main issues / occupational skills	Geomorphologic and geological techniques applications for the study of risks and environmental impacts, earth physics, general chemistry, mineralogy and petrography.
Name and type of organization	University of Modena and Reggio Emilia (college), Via Università 4, 41121 Modena (Italy)
Date of graduation	July 13 th 2005
Title of qualification awarded	High School Diploma
Name and type of organization	A. Sorbelli High School, Via matteotti 2/4, 41026 Pavullo nel Frignano (Modena, Italy)

Personal skills and competences

Mother tongue	Italian			
Other languages	English	Reading skills	C1	Writing skills C1 Speaking C1
Organizational and general skills	Excellent management of work commitments and organization of activities based on their priorities. Ability to work in international teams gained mainly in the last 6 years of work in synchrotron facility.			
Computer skills and competences	Thanks to the number of analytical techniques used during my scientific career and to the period of work at two different synchrotron beamlines, I developed the ability to learn very quickly how to use scientific equipment and analysis softwares, even without having previous experience. Good computer skills of the following programs: Autocad, GIS, GSAS (EXPGUI), X'Pert HighScore Plus, SigmaPlot, Iffeffit and Demeter suite, Origin, Peak Fit, Dawn, Fit2D, LabVIEW, PyMCA, XrayLarch, IgorPro.			
License	B			

Awards and prizes

- Winner of the SIMP 2017 Prize for Ph.D. thesis.

- *Le informazioni contenute nel presente curriculum vitae sono rese sotto la personale responsabilità del sottoscritto ai sensi degli artt. 46 e 47 del DPR 28.12.2000, n. 445, consapevole della responsabilità penale prevista all'art. 76 del medesimo DPR 28.12.2000, n. 445, per le ipotesi di falsità in atti e dichiarazioni mendaci.*
- *Autorizzo il trattamento dei miei dati personali presenti nel curriculum vitae ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 "Codice in materia di protezione dei dati personali" e dell'art. 13 del GDPR (Regolamento UE 2016/679)".*

Trieste, June 27th, 2024



I authorize the use of my personal data in accordance with current regulations.

Trieste, June 27th, 2024

