

Curriculum vitae et studiorum

SONIA CONTE



Nationality: Italian

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WORK EXPERIENCE

Research activities at CNR-ISSMC (Institute of Science, Technology and Sustainability for Ceramics, Via Granarolo 64 - 48018 Faenza (RA)) FROM April 2017 TO April 2023 and FROM September 2023 TO present

Role: Level III Researcher, Fixed Term
Contract: carried out by the Institute of Science, Technology and Sustainability for Ceramics - National Research Council - (ISSMC-CNR, formerly ISTECCNR), as part of the research programme: **PNRR ECS_00000033** ‘Green manufacturing for a sustainable economy’ Spoke 3 of the **ECOSYSTEM FOR SUSTAINABLE TRANSITION IN EMILIA-ROMAGNA** project. Prot. No. 0264052 of 11/09/2023 - UOR: 22. Contract renewed with protocol 0308880 of 09/09/2020 -UOR: 730
Period: **15 September 2023– ongoing**
Place: ISSMC (formerly ISTECCNR), Faenza (RA).
Activity:

- Design, testing and chemical, physical and technological characterisation of ceramic materials for construction. Assessment of the dependence of the properties of finished and semi-finished products on processing conditions. Influence of process variables on the main chemical-physical and technological properties of ceramic materials.
- Development of sustainable and “circular” production technologies for the decarbonisation of production processes, for the creation of a zero-pollution process industry in the field of building materials, with particular reference to porcelain stoneware tiles.
- Chemical-physical and technological characterisation of ceramic materials using techniques such as: electron microscopy (SEM), X-ray diffraction (XRD), optical dilatometry (HSM); qualification of ceramic products and semi-finished products.

Role: **Scholarship**
Contract: created by Prof. Giuseppe Cruciani, Department of Physics and Earth Sciences, University of Ferrara, as part of the research programme entitled: ‘**Characterisation of ceramic pigments and their application**’. Unife Protocol No. 14/2023 Prot. No. 0079988 of 15/03/2023 [UOR: SI000125 - Classif. III/12]. Renewal of 04/07/2023, Prot. no. 161112, Title III Class. 12 File.
Period: **3 April 2023– 14 September 2023**
Place: Department of Physics and Earth Sciences, University of Ferrara (FE).
Activity: Study and technological and performance characterisation of ceramic pigments and the products in which they are used (e.g. porcelain stoneware tiles); assessment of the dependence of the properties of finished and semi-finished products on processing

conditions; assessment of the influence of process variables on the main chemical-physical properties.

Role:	Postdoctoral grant of Type B
Contract:	carried out by the Institute of Science, Technology and Sustainability for Ceramics - National Research Council - (ISSMC-CNR, formerly ISTEC-CNR), as part of the research programme: Traditional ceramics: New technologies and innovative materials: PRIN 2017 - MiReLaP PROJECT: Mineral reactivity, a key to understanding large-scale processes: from rock forming environments to solid waste recovery/lithification. CUP: B54I19000250001. Contract Protocol ISTEC CNR 0002152/2019 dated 21/10/2019. Contract renewed with ISTEC CNR Protocol 0001753/2020 on 17/09/2020. Contract renewed with ISTEC CNR Protocol 0001947/2021 on 18/10/2021.
Period:	21 October 2019 – 2 April 2023
Place:	ISSMC (formerly ISTEC)-CNR, Faenza (RA).
Activity:	Incorporation of urban and industrial waste into ceramic batches: mineralogical transformations as the key to understanding the mechanisms of inertisation-mobilisation of elements during firing and designing new formulations with high chemical stability.
Role:	Professional research grant
Contract:	carried out by the Institute of Science and Technology of Ceramic Materials – National Research Council (ISTEC-CNR), as part of the Emilia Romagna Regional Project POR-FESR 2014-2020 – Title: HIGH-PERFORMANCE BUILDING ENVELOPES – ‘Innovative, adaptive and sustainable systems for high energy performance building envelopes’ CUP: J42F17000130009. Contract Prot. ISTEC CNR no. 649 of 20/03/2018. Contract renewed with Prot. ISTEC CNR no. 588 of 20/03/2019
Period:	3 April 2018 – 20 October 2019
Place:	ISTEC-CNR, Faenza (RA).
Activity:	Selection, study and characterisation of fluids capable of improving the technological, thermal and thermo-hygrometric performance of materials and systems used in building cladding.
Role:	Professional research grant
Contract:	carried out by the Institute of Science and Technology for Ceramic Materials – National Research Council (ISTEC-CNR), as part of the Emilia Romagna Regional Project POR-FESR 2014-2020 – Title: “ MATER SOS – Sustainable materials for the restoration and construction of new buildings” CUP E32I16000020007. Contract Prot. ISTEC CNR no. 1295 of 03/04/2017
Period:	3 April 2017 – 2 April 2018
Place:	ISTEC-CNR, Faenza (RA).
Activity:	Processes for the surface functionalisation of ceramics and building components. Optical, mechanical and functional properties of surfaces after deposition of nanostructured coatings for wettability control. Design of self-cleaning, anti-soiling surfaces with high durability.

CO-SUPERVISOR OF BACHELOR'S AND MASTER'S THESES

Type of qualification:	Master's Degree in Geosciences, Geohazards and Georesources
Graduate:	Lara Casini
Period:	September 2023-February 2024, graduated on 15 February 2024
In collaboration with:	Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia
Thesis:	Phase evolution in porcelain stoneware batches containing alternative raw materials: assessment of the impact of the presence of iron

Supervisors:	Prof. Rossella Arletti
Co-supervisors	Dr. Sonia Conte , Dr. Riccardo Fantini
Type of qualification:	Master's Degree in Geosciences, Geohazards and Georesources
Graduate:	Maddalena Bernini
Period:	October 2023-December 2023, graduated on 14 December 2023
In collaboration with:	Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia
Thesis:	Recovery of quarry washing waste in ceramic production: feasibility study at laboratory scale
Supervisors:	Prof. Alessandro Gualtieri, Prof. Rossella Arletti
Co-supervisors	Dr. Sonia Conte , Dr. Riccardo Fantini
Type of qualification:	Master's degree in Geological Sciences, Georesources and Territory
Graduate:	Lisa Tocchio
Period:	January 2023 - September 2023, graduated on 15 September 2023
In collaboration with:	Department of Physics and Earth Sciences, University of Ferrara.
Thesis:	Ceramisation of hazardous elements: Applicability in largely recrystallised ceramic bodies
Supervisors:	Prof. Matteo Ardit
Co-supervisors	Dr. Sonia Conte , Dr. Chiara Molinari
Type of qualification:	Master's Degree in Geosciences, Geohazards and Georesources
Graduate:	Savino La Saponara
Period:	July 2022 - April 2023, graduated on 12 April 2023
In collaboration with:	Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia
Thesis:	Assessment of the impact of using local red clays for the production of porcelain stoneware
Supervisors:	Prof. Rossella Arletti
Co-supervisors	Dr. Chiara Zanelli, Dr. Sonia Conte , Dr. Riccardo Fantini
Type of qualification:	Master's degree in Geological Sciences, Georesources and Territory
Graduate:	Riccardo Madini Moretti
Period:	January 2022 - June 2022, graduated on 10 June 2022
In collaboration with:	Department of Physics and Earth Sciences, University of Ferrara.
Thesis:	Inertisation of hazardous waste in sustainable traditional ceramics
Supervisors:	Prof. Matteo Ardit
Co-supervisors	Dr. Sonia Conte
Type of qualification:	Master's Degree in Geosciences, Geohazards and Georesources
Graduate:	Matteo De Iuliis
Period:	August 2021 - December 2021, graduated on 16 December 2021
In collaboration with:	Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia
Thesis:	Recovery of material derived from the inertisation of artificial glass fibres (AGF) as a secondary raw material in the production of porcelain stoneware tiles.
Supervisors:	Prof. Alessandro Gualtieri, Prof. Rossella Arletti
Co-supervisors	Dr. Sonia Conte , Dr. Chiara Zanelli
Type of qualification:	Bachelor's degree in Geological Sciences
Graduate:	Tommaso Magni
Period:	April 2021 - September 2021, graduated on 16 September 2021

In collaboration with:	Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia
Thesis:	Phase evolution of porcelain stoneware tiles made using biomass ash as a secondary raw material.
Supervisors:	Prof. Rossella Arletti
Co-supervisors	Dr. Sonia Conte , Dr. Chiara Zanelli
Type of qualification:	Bachelor's degree in Geological Sciences
Graduate:	Giuseppe Messori
Period:	April 2021 - September 2021, graduated on 16 September 2021
In collaboration with:	Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia
Thesis:	Evaluation of the stability of cerium oxide and yttrium oxide in high-temperature porcelain stoneware batches
Supervisors:	Prof. Rossella Arletti
Co-supervisors	Dr. Sonia Conte , Dr. Chiara Zanelli
Type of qualification:	Master's Degree in Geological Sciences and Technologies
Graduate:	Daniele Buonamico
Period:	September 2020 - June 2021, graduated on 13 June 2021
In collaboration with:	Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia
Thesis:	Use of bottom ash from biomass as a secondary raw material in the production of porcelain stoneware tiles.
Supervisors:	Prof. Rossella Arletti, Prof. Maria Giovanna Vezzadini
Co-supervisors	Dr. Sonia Conte , Dr. Chiara Zanelli

ACTIVITIES AND PARTICIPATION IN RESEARCH PROJECTS with COMPANIES and ORGANISATIONS

Role:	Design, coordination and implementation of activities; author of technical reports and spokesperson for the client
Period:	16 May 2022 – 16 May 2025
Project:	Partner together with L.B. - OFFICINE MECCANICHE - S.P.A. in the MISE-AI_ID84 ministerial project entitled: "INNOVATIVE TECHNOLOGY FOR THE PRODUCTION OF POWDERS FOR CERAMIC MANUFACTURES WITH HIGH ENVIRONMENTAL SUSTAINABILITY, ENERGY EFFICIENCY AND REDUCED CO2 EMISSIONS", Prog. no.: F/310084/01/X56
Scientific Director:	Dr. Chiara Zanelli
Activity:	Design and coordination of activities, performance of analyses, rheological and powder compaction tests, image analysis with interpretation of the results relating to experimentation and optimisation of granulates produced using an industrial dry grinding process.
Role:	Coordination and implementation of activities; author of technical reports
Period:	20 July 2022 - 31 March 2023
Project:	Technical/scientific consultancy and technology transfer contract with MARAZZI GROUP SPA , entitled: 'DIGIT TILE: STUDY AND EXPERIMENTATION OF ARTIFICIAL INTELLIGENCE TECHNIQUES APPLIED TO THE PROCESS: MODELS OF BEHAVIOUR IN SINTERING' No. CO-2022/02
Scientific Director:	Dr. Michele Dondi

Activity:	Coordination of activities, performance of analyses, tests with a heating microscope aimed at analysing the sintering kinetics and densification efficiency of ceramic products classified as porcelain stoneware.
Role:	Design, coordination and implementation of activities; Speaker at project meetings
Period:	21 October 2019 - 31 December 2023
Project:	Partnership with UniFe, UniPd, UniPr and UniMi in PRIN 2017 - MiReLaP PROJECT : 'MINERAL REACTIVITY, A KEY TO UNDERSTANDING LARGE-SCALE PROCESSES: FROM ROCK FORMING ENVIRONMENTS TO SOLID WASTE RECOVERING/LITHIFICATION.' CUP: B54I19000250001
Scientific Director:	Dr. Michele Dondi
Activity:	Planning and coordination of activities, performance of analyses. Production of vitrified and porous ceramic mixtures incorporating urban and industrial waste, technological and mineralogical characterisation of the same, as well as analysis of leaching data in order to determine the degree of inertisation/mobilisation of hazardous elements introduced into ceramic products through waste.
Role:	Design, coordination and implementation of activities; author of technical reports and rapporteur for the client
Period:	17 February 2022 - 31 December 2022
Project:	Technical/scientific consultancy and technology transfer contract with SYSTEM CERAMICS , entitled: 'STUDY AND IMPLEMENTATION OF FULL DIGITAL SOLUTIONS FOR DRY 3D PRINTING'. Prot. ISTECCNR No. 2021/13
Scientific Director:	Dr. Davide Gardini
Activity:	Design and coordination of activities, performance of analyses, rheological tests and image analysis with interpretation of the results relating to the experimentation and optimisation of coloured atomised materials to be used for the digital decoration of ceramic products.
Role:	Design, coordination and implementation of activities; author of technical reports and rapporteur for the client
Period:	7 January 2019 - 31 December 2021
Project:	Technical/scientific consultancy and technology transfer contract with GRUPPO ROMANI , entitled: 'ACTIVE CERAMIC TILES FOR THE MONITORING OF BUILDING STRUCTURES'. Prot. ISTECCNR No. 2019/115
Scientific Director:	Dr. Chiara Zanelli
Activity:	Design and coordination of activities, execution of analyses and technological tests with interpretation of the results relating to the experimentation and optimisation of the ceramic mixture to be used for the production of sensorised ceramic slabs. These are equipped with sensors capable of monitoring the stresses induced by the environment on the ceramic tiles.
Role:	Design, coordination and implementation of activities; author of technical reports and rapporteur for the client
Period:	12 July 2018 – 18 December 2020
Project:	Technical/scientific consultancy and technology transfer contract with METCO s.r.l. , entitled: "IMPROVEMENT OF THE SCRATCH RESISTANCE OF POLISHED CERAMIC TILES". Prot. ISTECCNR No. 1627 of 12/07/2018
Scientific Director:	Dr. Michele Dondi
Activity:	Design and coordination of activities, execution of analyses and technological tests with interpretation of the results relating to the study of porcelain stoneware tiles and the corresponding scratched surfaces (diffraction, optical and electron microscopy, profilometer, image analysis, etc.).

Role:	Participant in activities
Period:	28 June 2018 – 26 June 2020
Project:	Bilateral CNR: GAE P0000279, UO 000.301 Scientific cooperation agreement CNR/HCST-NRCD (Jordan) two-year period 2018-2019 – GUALTIERI/ABZAKH project, entitled: “RAW EARTH CONSTRUCTIONS: STUDY, RECOVERY, AND INNOVATION IN HISTORICAL MATERIALS AND CONSTRUCTION TECHNIQUES”.
Scientific Director:	Dr. Sabrina Gualtieri (Italy), Dr. S. M. Abzakh (Jordan)
Activity:	Sampling of raw materials, raw earth bricks and plaster at selected sites in Jordan, for characterisation using invasive and non-invasive techniques (microstructural, chemical and physical investigations) of the materials collected, in order to formulate ‘innovative’ mixtures compatible with historical artefacts.
Role:	Design, coordination and implementation of activities; author of technical reports and rapporteur for the client
Period:	3 April 2017 – 31 December 2019
Project:	Technical/scientific consultancy and technology transfer contract No. CO-2017/05 with NUOVA RIWAL CERAMICHE s.r.l. , entitled: ‘INNOVATIVE CERAMIC SLABS WITH HIGH INDUSTRIAL WASTE CONTENT PRODUCED WITH ADVANCED AND ECO-SUSTAINABLE SOLUTIONS’. Objective: production of large ceramic slabs with mixtures containing secondary raw materials (various types of waste) with technological characteristics suitable for partially and/or totally replacing the raw materials currently used in porcelain stoneware.
Scientific Director:	Dr. Chiara Zanelli
Activity:	Design and coordination of activities, execution of analyses and technological tests with interpretation of the results relating to the study and characterisation of raw materials, waste and mixtures for porcelain stoneware (raw and fired).
Role:	Design, coordination and implementation of activities; author of technical reports and rapporteur for the client
Period:	3 April 2017 – 31 December 2020
Project:	Technical/scientific consultancy and technology transfer contract No. CO-2017/12 with GRANITO FORTE Spa , entitled: “ECOTILE: ECO-SUSTAINABLE CERAMIC PRODUCT WITH OPTIMISATION OF PRODUCTION PARAMETERS AND USE OF NATIONAL RAW MATERIALS”. Objective: creation of an eco-sustainable ceramic product with optimisation of production parameters and use of national raw materials (ECOTILE).
Scientific Director:	Dr. Chiara Zanelli
Activity:	Design and coordination of activities, design and development of new mixtures, execution of analyses and technological tests with interpretation of the results relating to the study and characterisation of national raw materials and related mixtures for porcelain stoneware obtained (raw and fired).
Role:	Participant in activities
Period:	24 July 2017 – 27 September 2018
Project:	Technical/scientific consultancy and technology transfer contract No. CO-2017/08 with the United Nations Industrial Development Organisation (UNIDO) entitled: “CAPACITY-BUILDING FOR INDUSTRIAL RESEARCH AND DEVELOPMENT IN RWANDA ” – Project number 150442 (SAP ID) - Testing of Rwandan raw materials to assess their suitability for the production of ceramic tiles and sanitaryware.
Scientific Director:	Dr. Chiara Zanelli
Activity:	Performance of analyses and technological tests with interpretation of results, see Technical Report RT -2017-89, 12 October 2018 – “Testing of Rwandan raw materials

to assess their suitability for the production of ceramic tiles and sanitaryware” Prot. ISTECCNR - No. 0002163 of 12/10/2018

Role:	Participant in activities
Period:	3 April 2017 – 31 July 2018
Project:	Emilia Romagna Regional Project POR-FESR 2014-2020 – Title: MATER_SOS “SUSTAINABLE MATERIALS FOR THE RESTORATION AND CONSTRUCTION OF NEW BUILDINGS” CUP E32I16000020007.
Scientific Director:	Dr. Chiara Zanelli
Activity:	Design and development of materials, execution of analyses and technological tests with interpretation of results, with particular reference to mineralogical analysis and calculations of the physical properties of the liquid phase present at high temperature in porcelain stoneware bodies.
Role:	Participant in activities
Period:	3 April 2017 – 31 July 2018
Project:	Emilia Romagna Regional Project POR-FESR 2014-2020 – Title: “ IPERCER – PROCESS INNOVATION FOR THE SUSTAINABLE CERAMIC TILE SUPPLY CHAIN” CUP E32I16000010007
Scientific Director:	Dr. Michele Dondi
Activity:	Design and development of materials, performance of analyses and technological tests with interpretation of results, with particular reference to mineralogical analysis and calculations of the physical properties of the liquid phase present at high temperatures in porcelain stoneware bodies.

PARTICIPATION in EXPERIMENTS at SINCROTRONE

Role:	Participant in activities
Period:	13 September – 17 September 2021
Project:	Experiments at the beam line of the ELETTRA synchrotron international multidisciplinary research centre in Trieste. Experiment Ref. No 20210011
Scientific Director:	Prof. Arletti Rossella (Department of Chemical and Geological Sciences, University of Modena and Reggio Emilia)
Activity:	High-pressure experiments at the ELETTRA synchrotron in Trieste for the study of zeolites.
Role:	Participant in activities
Period:	17 February – 23 February 2020
Project:	Experiments at the beam line of the ELETTRA synchrotron international multidisciplinary research centre in Trieste. Experiment Ref. No. 20195184
Scientific Director:	Prof. Ardit Matteo (Department of Physics and Earth Sciences, University of Ferrara)
Activity:	Laboratory synthesis of perovskites with the formula Ca-Ti-Ge in the previous months. High-temperature experiments at ELETTRA synchrotron in Trieste in February 2020 to study the perovskites synthesised in the laboratory.
Role:	Participant in activities
Period:	24 February – 27 February 2018
Project:	Experiments at the beam line of the EUROPEAN SYNCHROTRON RADIATION FACILITY in Grenoble , France (ESRF). Experiment Ref. No. 76173, Final No. CH-5252
Scientific Director:	Prof. Ardit Matteo (Department of Physics and Earth Sciences, University of Ferrara)

Activity: Laboratory synthesis of perovskites with the formula La-Mn-Ga / Ca-Ti-Ge / Sc-Y-Al in the previous months. High pressure and high temperature experiments at ESRF in Grenoble in February 2018 to study the perovskites synthesised in the laboratory.

EDUCATION

Title: **PhD in ‘Modelling, Computational Simulation and Multiscale Characterisation for Materials and Life Sciences’** Academic Field: 04/A1 - Geochemistry, Mineralogy, Petrology, Volcanology, Georesources and Applications. Scientific-disciplinary sector: GEO/09 Mining georesources and mineralogical-petrographic applications for the environment and cultural heritage.

Period: **January 2012 – February 2015**

Place: Department of Chemical and Geological Sciences. University of Modena and Reggio Emilia.

Project: *“PROTOHISTORIC VITREOUS MATERIAL FROM SOUTHERN ITALY: Chemical characterization and trace elements study.”*

Supervisor: Prof. Alessandro Gualtieri

Activity: The project involved the archaeometric (chemical-physical) study of glass materials (faience, glassy faience, glass) dating from the Bronze Age to the Iron Age, with the aim of determining the raw materials used in production, the technological level achieved by the glassmakers of the time and the origin of the artefacts. The research was carried out using (E)SEM-EDS, EMPA, XRPD and LA-ICPMS analyses.

Title: **Master's Degree in ‘Sciences for the Recovery and Conservation of Archaeological Heritage’, class 12/S**

Period: **January 2009 – April 2011**

Place: Department of Chemical and Geological Sciences. University of Modena and Reggio Emilia.

Thesis: *‘The protohistoric settlements of the Capo Graziano facies of the Acropolis of Lipari and the Montagnola di Filicudi: analysis of village structures; functional analysis and proposed nomenclature of vessel shapes; analysis of the function of spaces based on the distribution of identified vessel shapes.’*

Supervisors: Prof. Sara Levi and Dr. Andrea Di Renzoni

Grade: 110/110 with honours

Activity: Analysis of ceramics and structures found in the Bronze Age Aeolian sites of Lipari and Filicudi, to determine the functionality of vessels and spaces.

Title: **Bachelor's Degree in Cultural Heritage Sciences, class 13**

Period: **September 2005 – December 2008**

Place: Department of Chemical and Geological Sciences. University of Modena and Reggio Emilia.

Thesis: *“Archaeometric investigations of 14th-century mosaic tiles from important Italian monuments.”*

Supervisors: Prof. Rossella Arletti and Prof. Maria Giovanna Vezzalini

Grade: 110/110 with honours

Activity: The study focused on the chemical-physical characterisation of glass tesserae from the medieval mosaic of the Baptistery of Florence, in order to determine the raw materials and production technology used. The study was carried out using SEM-EDS, EMPA, XRPD and FORS analyses.

TECHNICAL AND IT SKILLS

- a) Excellent knowledge of techniques for characterising materials: optical microscope, scanning electron microscope and X-ray microanalysis (**SEM-EDS**), electron probe microanalyser for chemical analysis (**EPMA**), X-ray diffraction (**XRPD**), laser ablation plasma mass spectrometry for trace element analysis (**LA-ICPMS**); heating microscope (**HSM**), dilatometer and optical fleximeter (**ODP**).

Contact person for energy dispersive X-ray fluorescence (EDXRF) at ISSMC-CNR.

Operator qualified to use instruments for laboratory-scale ceramic process simulation and product characterisation, such as: **Jaw crushers** (Segantini), **hammer mills** (Cecchinato), **ball mills** on vibrating equipment (Guseo Villanova D'Arda); **Hydraulic press** (P800/EA Ceramic Instrument) and tablet mould press (A/84 CCR Nannetti); **Chamber kiln** (Nannetti PKP-ERO) and **roller kiln** (Nannetti ER-15); **Water porosimeter** (Nannetti); **chromometer** (Netzsch Tester 401/3 and Ceramic Instrument MOR/3 – E/B); metallographic cutting machine with micrometric adjustment (Micromet), hot embedding machine (Remet), automatic lapping machine (Tegamin-25, Struers).

- b) Software: excellent knowledge and use of **Microsoft and Office applications**, in particular **Excel, Word and PowerPoint**; good knowledge and use of data processing software such as EVA, INCA; good knowledge and use of image processing software (**Photoshop, GIMP, Image PRO**).

LANGUAGES:

Mother tongue: Italian

Other languages: English: read, written and spoken: level B2. French: beginner level.

ARTICLES in INTERNATIONAL PEER-REVIEWED JOURNALS

1. Arletti, R., **Conte, S.**, Vandini, M., Fiori, C., Bracci, S., Bacci, M., Porcinai, S. (2011). Florence Baptistery: chemical and Mineralogical Investigation of glass mosaic tesserae. *Journal of Archeological Science* 38, 1, 79-88. <https://doi.org/10.1016/j.jas.2010.08.012>
2. **Conte, S.**; Chinni, T.; Arletti, R.; Vandini M. (2014). Butrint (Albania) between Eastern and Western Mediterranean glass production: EMPA and LA-ICP-MS of Late Antique and Early Medieval finds. *Journal of Archaeological Science*, 49, 6-20. [doi:10.1016/j.jas.2014.04.014](https://doi.org/10.1016/j.jas.2014.04.014)
3. **Conte, S.**, Matarese, I., Quartieri, S., Arletti, R., Jung, R., Pacciarelli, M., Gratuze, B (2015). Bronze Age Vitreous Materials from Punta Di Zambrone (Southern Italy). *European Journal of Mineralogy*, 27, 337–351. DOI: [10.1127/ejm/2015/0027-2450](https://doi.org/10.1127/ejm/2015/0027-2450)
4. **Conte, S.**, Arletti, R., Mermati, F., Gratuze, B. (2016). Unravelling the Iron Age glass trade in Southern Italy: the first trace element analyses. *European Journal of Mineralogy*, 28, 2, 409-433. DOI: [10.1127/ejm/2016/0028-2516](https://doi.org/10.1127/ejm/2016/0028-2516)
5. Fiorentino, S., Chinni, T., Cirelli, E., Arletti, R., **Conte, S.**, Vandini, M. (2017). Considering the effects of the Byzantine-Islamic transition: Umayyad glass tesserae and vessels from the qasr of Khirbat al-Mafjar (Jericho, Palestine). *Archaeological and Anthropological Sciences* 10 (12), DOI: [10.1007/s12520-017-0495-4](https://doi.org/10.1007/s12520-017-0495-4)
6. **Conte, S.**, Arletti, R., Henderson, J., Degryse, P., Blomme, A. (2018). Different glassmaking technologies in the production of Iron Age black glass from Italy and Slovakia. *Archaeological and Anthropological Sciences*, 10, 503–521. <https://doi.org/10.1007/s12520-016-0366-4>

7. **Conte, S.;** Zanelli, C.; Ardit, M.; Cruciani, G.; Dondi, M. (2018). Predicting Viscosity and Surface Tension at High Temperature of Porcelain Stoneware Bodies: A Methodological Approach. *Materials* **2018**, *11*(12), 2475; <https://doi.org/10.3390/ma11122475>
8. Zanelli, C.; Soldati, R.; **Conte, S.;** Guarini, G.; Ismail, A.I.M.; El-Maghraby, M.S.; Cazzaniga, A; Dondi, M. (2019). Technological behavior of porcelain stoneware bodies with Egyptian syenites. *International Journal of Applied Ceramic Technology*, 1–11. <https://doi.org/10.1111/ijac.13102>
9. Matarese, I.; **Conte, S.;** Jung, R.; Pacciarelli, M. (2019). Ornamenti in materiale vetroso dell'età del bronzo dall'Italia meridionale e dall'area siciliano-eoliana: un inquadramento d'insieme alla luce di nuovi dati. *Rivista di Scienze Preistoriche*, LXVIII, 2018:(2019), pp. 385-424. ISSN 0035-6514.
10. Zanelli C., Domínguez E., Iglesias C., **Conte S.,** Soldati R., Guarini G., Dondi M. (2019). Recycling of residual boron muds into ceramic tiles. *Boletín de la sociedad española de Cerámica y Vidrio*, 58, 199-210. <https://doi.org/10.1016/j.bsecev.2019.01.002>
11. **Conte, S.,** Matarese, I., Vezzalini, G.; Pacciarelli, M., Scarano, G., Vanzetti, A., Gratuze, B., Arletti, R. (2019). How much is known about glassy materials in Bronze and Iron Age Italy? New data and general overview. *Archaeological and Anthropological Sciences*, 1-29, <https://doi.org/10.1007/s12520-018-0634-6>
12. Dondi M., Guarini G., **Conte S.,** Molinari C., Soldati R., Zanelli C. (2019). Deposits, composition and technological behavior of fluxes for ceramic tiles. *Periodico di Mineralogia* (2019) 88, 235-257.
13. **Conte S.,** Zanelli C., Ardit M., Cruciani G., Dondi M. (2020). Phase evolution during reactive sintering by viscous flow: Disclosing the inner workings in porcelain stoneware firing. *Journal of the European Ceramic Society* 40, 1738–1752 <https://doi.org/10.1016/j.jeurceramsoc.2019.12.030>
14. Zanelli C., **Conte S.,** Melchiades F.G., Nastri S., Hernández-Sánchez M.Y., Boschi A.O., Dondi M. (2020). Phyllite as Feldspar Substitute in Porcelain Stoneware Tiles: Effect on Sintering Behaviour and Phase Composition. *Ceramic Forum International*, 97, 5-6, E35 - E39. ISSN 01739913
15. **Conte S.,** Zanelli C., Molinari C., Guarini G, Dondi M. (2020). Glassy wastes as feldspar substitutes in porcelain stoneware tiles: Thermal behaviour and effect on sintering process. *Materials Chemistry and Physics*, 256, 123613. <https://doi.org/10.1016/j.matchemphys.2020.123613>
16. Molinari C., **Conte S.,** Zanelli C., Ardit M., Cruciani G., Dondi M. (2020). Ceramic pigments and dyes beyond the inkjet revolution: From technological requirements to constraints in colorant design. *Ceramics International*, 46, 14, 21839 - 218721. <https://doi.org/10.1016/j.ceramint.2020.05.302>
17. Zanelli C., **Conte S.,** Molinari C., Soldati R., Dondi M. (2021). Waste recycling in ceramic tiles: a technological outlook. *Resources, Conservation & Recycling*, 168, 105289. <https://doi.org/10.1016/j.resconrec.2020.105289>
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CONTRIBUTIONS to CATALOGUES and PROCEEDINGS in CONFERENCE PROCEEDINGS

1. **Conte, S.** (2016). Scene di battaglia: urna cineraria da Chiusi, in A. Ciancio – F. Rossi (edd.), “*Annibale. Un viaggio*”, catalogo della mostra Barletta 2016, Bari 2016, pp.86-87
2. **Conte, S.**, Dondi, M., Ardit. M., Cruciani, G., Zanelli, C. (2018). High temperature viscosity of porcelain stoneware bodies. *Proc. 15th World Congress on Ceramic Tile Quality*, QUALICER 2018, Castellón (Spain).
3. Zanelli, C.; Ardit, M.; **Conte, S.**; Soldati, S.; Cruciani, G.; Dondi, M. (2018). Viscous flow sintering of porcelain stoneware revisited *Proc. 15th World Congress on Ceramic Tile Quality*, QUALICER 2018, Castellón (Spain).
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5. **Conte S.**, Zanelli C., Molinari C., Guarini G., Dondi M. (2020). Can we predict the sintering kinetics of porcelain stoneware? The case of glassy waste-based bodies. *Proc. 16th World Congress on Ceramic Tile Quality*, QUALICER 2020, Castellón (Spain).
6. Zanelli C., **Conte S.**, Melchiades F. G., Nastri S., Hernandez-Sánchez M. Y., Boschi A. O., Dondi M. (2020). Phyllite as feldspar substitute in porcelain stoneware tiles: effect on sintering behavior and phase composition. *Proc. 16th World Congress on Ceramic Tile Quality*, QUALICER 2020, Castellón (Spain).
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PRESENTATIONS at NATIONAL and INTERNATIONAL CONFERENCES

ORAL presentations with ABSTRACTS in CONFERENCE PROCEEDINGS (speaker)

1. **Conte, S.**, Arletti, R., Vandini, M., Chinni, T. Archaeometrical analyses of Late and Post Roman glass from Butrint (Albania), *5th Natural Silicate Glasses, Glasses and melts from natural conditions to industrial processes*. August 22-24, 2013. Florence, Italy.

2. **Conte, S.,** Arletti, R., Mermati, F. First Archaeometrical Data of Glass from Sarno Necropolis (9th-6th Century BC). *VII Congresso Nazionale di Archeometria. Scienze e Beni Culturali: stato dell'arte e prospettive*. Bologna 5-7 Febbraio 2014.
3. **Conte, S.,** Arletti, R., Mermati, F. First Archaeometrical Data of Glass from Sarno Necropoleis (9th-6th century BC). *International Symposium on Archaeometry, ISA* Los Angeles-USA, May 19-23, 2014.
4. **Conte, S.,** Arletti, R., Pacciarelli, M. Protohistoric glass from Southern Italy: from Early Bronze Age to Advanced Iron Age (18th-6th cent. BC). *Geosciences: a tool in a changing world, Congress SIMP-SGI- SOGEI-AIV*, Pisa September 3-6, 2017.
5. **Conte, S.,** Dondi, M., Ardit. M., Cruciani, G., Zanelli, C. High temperature viscosity of porcelain stoneware bodies. *Geosciences: a tool in a changing world, Congress SIMP-SGI-SOGEI-AIV*, Pisa September 3-6, 2017.
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8. **Conte, S.,** Zanelli, C.; Ardit, M.; Cruciani, G.; Dondi, M. Phase transformations and related liquid phase physical properties: evolution during the viscous flow sintering in porcelain stoneware tiles. *CIMTEC 2018 14th International Ceramics Congress and 8th Forum on New Materials*, Perugia, June 10-14, 2018.
9. **Conte S.,** Matarese I., Pacciarelli M., Arletti R. Quanto sappiamo dei materiali vetrosi dell'età del bronzo del meridione? Nuovi dati e panoramica della circolazione di materiali vetrosi in Italia. *V Incontro Annuale di Preistoria e Protostoria, Materiali preziosi, semipreziosi e inconsueti nell'età del Rame e nell'età del Bronzo italiana Archeologia, archeometria e paleotecnologia*, Padova, May 29, 2018.
10. **Conte, S.,** Dondi, M.; Ardit, M.; Cruciani, G.; Zanelli, C. High temperature viscosity of the vitreous phase into porcelain stoneware bodies. *PNCS-ESG, 15th International Conference on the Physics of Non-Crystalline Solids + 14th conference of the European Society of Glass*. Saint Malò France, July 9-13, 2018.
11. **Conte, S.,** Arletti, R. Archaeometrical investigation of protohistoric glass from southern Italy: from Early Bronze Age to Advanced Iron Age (18th-6th century BC). *PNCS-ESG, 15th International Conference on the Physics of Non-Crystalline Solids + 14th conference of the European Society of Glass*. Saint Malò France, July 9-13, 2018.
12. **Conte S.,** Zanelli C., Soldati R., Molinari C., Dondi M. Glassy wastes as feldspar substitutes in porcelain stoneware bodies: effect on sintering behavior. *Sgi-SIMP "Geoscience for the environment, natural hazards and cultural heritage"*, Catania, September 12-14, 2018.
13. **Conte S.,** Arletti R. Iron Age black glass from Italy and Slovakia: technological evolution of early natron glass vs wood ash technology. *Sgi-SIMP "Geoscience for the environment, natural hazards and cultural heritage"*, Catania, September 12-14, 2018
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18. **Conte S.,** Tavares Brasileiro C. (2021). Effetto della sericite sulla sinterizzazione del gres porcellanato. WEBINAR Materie Prime per Piastrelle Ceramiche 25 febbraio 2021, Società Ceramica Italiana, online.

19. **Conte S.**, Tavares Brasileiro C., Contartesi F., Gomes Melchiades F., Zanelli C., Dondi M., Ortega Boschi A. (2021). Sintering of Porcelain Stoneware Tiles: the Effect of Strong Mineral Fluxes. *8th International Congress on Ceramics (ICC8)*, April 25-30, 2021, virtual, Korea.
20. **Conte S.**, Zanelli C., Molinari C., Guarini G., Dondi M. (2021). Glassy wastes as feldspar substitutes in porcelain stoneware: effect on sintering behaviour. *Vitrogeowastes*, 23-26 May, 2021, Baeza (Spain) and virtual.
21. Ardit M., Zanelli C., **Conte S.**, Molinari C., Cruciani G., Dondi M. (2021). Ceramization of Hazardous Elements: benefits and pitfalls of the inertization process in silicate ceramics. *3rd European Mineralogical Conference*, 29 August-2 September 2021, Cracow, Poland and virtual.
22. **Conte S.**, Buonamico D., Arletti R., Dondi M., Guarini G., Zanelli C. (2022). Bottom ashes from biomass combustion as secondary raw materials in porcelain stoneware bodies. *17th World Congress on Ceramic Tile Quality, QUALICER 2022*, Castellón (Spain). *17th World Congress on Ceramic Tile Quality, QUALICER 2022*, 20-21 June 2022, Castellón (Spain).
23. **Conte S.**, Buonamico D., Arletti R., Dondi M., Guarini G., Zanelli C. (2022). Bottom ashes from biomass combustion as secondary raw materials in porcelain stoneware bodies. *CIMTEC 2022, 15th International Ceramics Congress*, 20-24 June 2022, Perugia, Italy.
24. Zanelli C., **Conte S.**, Molinari C., Guarini G., Dondi M. (2022). Exploring waste-based body formulations for porcelain stoneware tiles. *CIMTEC 2022, 15th International Ceramics Congress*, 20-24 June 2022, Perugia, Italy.
25. **Conte S.**, Molinari C., Zanelli C., Ardit M., Mantovani L., Cruciani G., Tribaudino M., Dondi M. (2022). Mobility of hazardous elements in ceramic bodies. *Ceramic in Europe 2022*, 10-14 July, Krakow, Polonia.
26. **Conte S.**, Arletti R., De Iuliis M., Dondi M., Gualtieri A., Zanelli C. (2023) Recycling the product of thermal inertization of manmade vitreous fibres for the manufacture of porcelain stoneware tiles. *KERAMIK 2023, 98th DKG Annual Meeting*, 27-30 March 2023, Jena.
27. **Conte S.**, Dondi M., Molinari C., Zanelli C., Fantini R., Arletti R., Gualtieri A.F. (2023). Riciclo di scarti nel Gres porcellanato da fonti esterne alla Filiera Ceramica. *Linee di ricerca e primi risultati per la filiera ceramica nel progetto ECOSISTER*, 1° dicembre 2023 – Sala Conferenze Confindustria Ceramica – Sassuolo
28. **Conte S.**, Molinari C., Dondi M., Zanelli C. (2024). Recycling secondary raw materials in the ceramic tile industry: how to overcome technological hindrances. *ICC10- 10th International Congress on Ceramics*, July 14 to 18, 2024 Montreal, Canada.
29. **Conte S.**, Fantini R., Nodari L., Gualtieri A.F., Arletti R., Molinari C., Dondi M. & Zanelli C. (2024). Red clays as alternative raw materials in porcelain stoneware tiles: the effect of iron on the sintering process. *Geology for a sustainable management of our Planet. SGI-SIMP*, Bari 3-5 settembre 2024
30. **Conte S.** (2024). Il riciclo delle materie prime seconde nell'industria ceramica: come superare gli ostacoli tecnologici. "Ecosistema Territoriale di Innovazione dell'Emilia-Romagna- PNRR - Missione 4: casi studio nel settore ceramico", Cersaie, Bologna 25 Settembre
31. **Conte S.** (2024). *Sustainability in the Ceramic Tile Industry: Necessity, Constraints and Opportunities*. "Materie Prime e Geomateriali: criticità e applicazioni industriali", Roma, 9-10 dicembre 2024.
32. **Conte S.**, Sisti M. (2025). *Materie prime di recupero per la produzione di impasti e smalti le potenzialità di Re.Wo*. Materie Prime per Piastrelle Ceramiche, 13 febbraio 2025, Società Ceramica Italiana, Sassuolo
33. **Conte S.**, Fantini R., Arletti R., Molinari C., Dondi M., Zanelli C., Gualtieri A.F. (2025). *Recycling Man-Made Vitreous Fibres hazardous waste for the manufacture of traditional ceramics: sintering mechanisms, phase transformations and microstructure of porcelain stoneware*. XIXth Conference of the European Ceramic Society (ECerS), August 31 - September 4, 2025, Dresden, Germany.
34. **Conte S.**, Molinari C., Giordano D., Dondi M., Zanelli C. (2025). *Vitrification paths in porcelain stoneware: how the bulk chemical composition affects the sintering behaviour*. XIXth Conference of the European Ceramic Society (ECerS), August 31 - September 4, 2025, Dresden, Germany.
35. **Conte S.**, Molinari C., Dondi M., Zanelli C. (2025). *Oltre il feldspato: strategie innovative per sostituire un CRM nella produzione di piastrelle ceramiche*. Stati Generali Del Mining, REMTECH, 19 Settembre 2025, Ferrara.

ORAL PRESENTATIONS BY INVITATION

1. **Conte S.**, *Use of the Trace Elements in the Study of the Ancient Glass*. Quarantennale del Centro Interdipartimentale Grandi Strumenti dell'Università di Modena e Reggio Emilia. Pomeriggio Tematico Dedicato alla Spettrometria di Massa Inorganica. Modena, 3 Ottobre, 2014.
2. **Conte S.**, *Mineralogia delle grandi lastre ceramiche*. Workshop Materiali e strutture per le costruzioni: caratteristiche, usi e ri-usi. Università di Chieti e Pescara, Chieti, 22 marzo 2019.
3. **Conte S.**, *Economia circolare: cos'è e come si applica al mondo dell'industria ceramica*. Seminario presso il Dipartimento di Scienze Chimiche e Geologiche dell'Università di Modena e Reggio Emilia, 6 dicembre 2019.
4. **Conte S.**, *Economia circolare: cos'è e come si applica al mondo dell'industria ceramica*. Seminario presso il Dipartimento di Scienze Chimiche e Geologiche dell'Università di Modena e Reggio Emilia, 1° dicembre 2021.
5. **Conte S.**, *Economia circolare e valorizzazione degli scarti nell'ambito dell'industria ceramica*. Seminario nell'ambito del Corso di Minerali Critici per la Sostenibilità e le Rinnovabili, Dipartimento di Fisica e Scienze della Terra, Università di Ferrara, 28 aprile 2022
6. **Conte S.**, *Economia circolare nell'industria delle piastrelle ceramiche: da necessità a opportunità*. Seminario nell'ambito del Corso di Materie Prime: un sapere per la realizzazione in campo professionale, Dipartimento di Scienze Chimiche e Geologiche dell'Università di Modena e Reggio Emilia, 19 maggio 2022.
7. **Conte S.**, Molinari C., Dondi M., Zanelli C. *Recycling secondary raw materials in the ceramic tile industry: how to overcome technological hindrances*. VitroGeoWaste III, VITRIFICATION and GEOPOLIMERIZATION of WASTES for INERTIZING and/or RECYCLING third Edition. Sofia, Bulgaria 09th - 10th November 2023
8. **Conte S.**, *Valorizzazione Del Prodotto Derivante Dall'inertizzazione Di Fibre Vetrose: Riciclo In Impasti Per Grès Porcellanato*. LIFE Re.Wo project: REcycling mineral WOol waste into high-value products, ECOMONDO, Rimini, 6 Novembre 2024.

ORGANISATION OF CONFERENCE SESSIONS

1. Participation as **organiser and moderator of session S15 “Mineralogy and waste: circular economy for a sustainable future”**, Geosciences for a sustainable future SGI-SIMP, Turin, 19–21 September 2022.
2. Participation as **organiser and moderator of session S19 “Environmental mineralogy and sustainable development”**, Geology for a sustainable management of our Planet. SGI-SIMP, Bari, 3–5 September 2024.
3. Participation as **organiser and moderator of Session 13 – “Clays Application in Ceramics”**, 18th International Clay Conference (ICC), Trinity College, Dublin, Ireland, 13–18 July 2025.