



Francesco Santoro

Data di nascita: 05/01/1994 | **Nazionalità:** Italiana | **Numero di telefono:**
(+39) 3200108001 (Cellulare) | **Indirizzo e-mail:** francesco.santoro.geologo@gmail.com |

LinkedIn: <https://www.linkedin.com/in/francesco-santoro-geo/> |

Indirizzo: Viale Italia, 11, 25064, Gussago, Italia (Abitazione)

● PRESENTAZIONE

I'm a geologist with a passion for applied mineralogy and building materials - from cultural heritage preservation to modern construction innovations and future space applications.

I've been part as ESR3 in the SUBLime project, a Marie Skłodowska-Curie Actions initiative at the University of Granada, where I focused on developing self-cleaning lime-based materials through biomimetic approaches, with particular studies on amorphous-crystalline transitions and surface modifications through both chemical and physical methods.

Currently, I'm a Postdoctoral Research Fellow at the Center of Studies and Activities for Space "Giuseppe Colombo" (CISAS) at the University of Padova, working within the "Space It Up project" - a major initiative funded by the Italian Space Agency (ASI) and the Italian Ministry of University and Research (MUR). My research focuses on the characterization of terrestrial analogues and lunar regolith simulants for extraterrestrial construction, working on optimizing new mix formulations.

My research interests combine geological expertise with innovative approaches in materials science, using earth-based simulants to bridge the gap between terrestrial and space construction materials.

● ESPERIENZA LAVORATIVA

TRAINERSHIP AND ERASMUS+ – PROF. CARLOS RODRIGUEZ NAVARRO – 31/01/2019 – 29/09/2019 – GRANADA, SPAGNA

Through the Erasmus+ scholarship, I actively participated in an interdisciplinary research group working closely with Post-Doc Luis Monasterio Guillot. During the internship and development of my master's thesis, I improved my problem-solving and analytical skills by working from raw samples to finished products through data modelling. I utilized the following techniques:

- Single crystal diffraction and powder diffraction (XRD and XRD2D)
- Vibrational spectroscopy (Raman and infrared techniques)
- Chemical and textural investigation techniques (X-ray fluorescence, SEM in WDS, EDS, TEM)
- Mechanical strength tests and geotechnical tests

SERVIZIO CIVILE, AMBITO AMBIENTALE – UFFICIO TECNICO DEL COMUNE DI GUSSAGO – 14/12/2019 – 14/04/2020 – GUSSAGO, ITALIA

The project was interrupted due to the Covid-19 pandemic. This experience provided me with exposure to public administration and land management, encompassing both regulatory compliance and environmental support, with direct involvement in geological reporting and contaminated site remediation

MARIE SKŁODOWSKA-CURIE ACTION EUROPEAN TRAINING NETWORK – INNOVATIVE TRAINING NETWORK (ETN ITN) ESR 3. – UNIVERSITÀ DEGLI STUDI DI GRANADA (UGR) – 04/2021 – 15/04/2024 – GRANADA, SPAGNA

Impresa o settore: Istruzione | **Sito Internet:** <https://sublime-etn.eu/>

I've been part as ESR3 in the SUBLime project, a Marie Skłodowska-Curie Actions initiative at the University of Granada, where I focused on developing self-cleaning lime-based materials through biomimetic approaches, with particular studies on amorphous-crystalline transitions and surface modifications through both chemical and physical methods. The title of the project is "Lime-based mortars and plasters with added functionality: a biomimetic approach".

Research focused on surface modification techniques and chemical etching processes for material characterization and enhancement.

POST DOCTORAL FELLOW – CENTER OF STUDIES AND ACTIVITIES FOR SPACE "GIUSEPPE COLOMBO" (CISAS) – 15/01/2025 – Attuale – PADOVA, ITALIA

Currently, I'm a Postdoctoral Research Fellow at the Center of Studies and Activities for Space "Giuseppe Colombo" (CISAS) at the University of Padova, working within the "Space It Up project" - a major initiative funded by the Italian Space Agency (ASI) and the Italian Ministry of University and Research (MUR). My research focuses on the characterization of terrestrial analogues and lunar regolith simulants for extraterrestrial construction, working on optimizing new mix formulations.

● ISTRUZIONE E FORMAZIONE

30/09/2017 – 24/09/2020 Padova, Italia

LAUREA MAGISTRALE IN GEOLOGIA E GEOLOGIA TECNICA Università degli studi di Padova

Relatore: Prof. Luca Valentini

Co-Relatore: Prof. Carlos Rodriguez Navarro

Co-Relatore: PhD Louis Monasterio

Indirizzo Via Gradenigo, 6, 35131, Padova, Italia | **Campo di studio** Mineralogia Applicata, Cristallografia dei materiali |

Voto finale 105/110 | **Tipo di crediti** 123 CFU | **Tesi** "Process of carbonation and durability in alternative binders"

30/09/2014 – 16/07/2017 Padova, Italia

LAUREA TRIENNALE IN SCIENZE GEOLOGICHE Università degli studi di Padova

Relatore: prof. Richard Spiess

Indirizzo Via Gradenigo, 6, 35131, Padova, Italia | **Campo di studio** Petrologia | **Tipo di crediti** 180 CFU |

Tesi "Understanding the granulitic deformation microstructures of Curinga metagabbro: A SEM-EBSD study"

● REFERENZE

Carlos Rodríguez Navarro Full Professor (UGR)

Head of the Mineralogy Scientific Department of Granada and Doctoral Advisor

E-mail carlosrn@ugr.es | **Telefono** (+34) 958246616

Encarnación Ruiz Agudo Professoressa Associata (UGR)

Dean of the School of Sciences at UGR and Professor in the Mineralogy Scientific Department of Granada and PhD thesis supervisor

E-mail encaruiz@ugr.es | **Telefono** (+34) 958242366

Luca Valentini Professore Associato (UniPD)

Associate Professor in Applied Mineralogy at the University of Padova

E-mail luca.valentini@unipd.it | **Telefono** (+39) 0498279831

● ONORIFICENZE E RICONOSCIMENTI

09/2020

Finalist on European University Competition on Raw Materials, Mining engineering sector, 2020 – Raidmap Project

This international competition provided the opportunity to work in an advanced research environment alongside engineers, mathematicians, and physicists from all continents, addressing real-world industrial challenges. Focused on the mining engineering sector, this project enhanced both my communication skills and my ability to operate effectively in a high-level interdisciplinary setting.

05/2017

Finalist Padova University Mobility Challenge – Unismart - E-ON Energy

In this competition, my team and I developed and presented a project aimed at improving urban mobility in a medium-sized city like Padua. Our project advanced to the final stages of the competition organized by the University of Padua and E-ON Energy.

● **CONFERENZE E SEMINARI**

06/2019 Ronda (Spagna)

XXXVIII Convegno interazionale della società geologica spagnola di Mineralogia

Moderator and member of the organizing staff

12/05/2019 Granada -UGR- (Spagna)

Magic of geopolymers: Alkaline-activated cement between past, present and future

Keynote speaker in the UGR department

Link <http://grados.ugr.es/geologia/pages/geocervezas>

08/2018 Padova (Italia)

Workshop sulla protezione del patrimonio culturale dal rischio sismico

Sino- Italian Workshop, CIPAR

17/05/2021 – 18/05/2021 Online

Kick-off meeting event SUBLime

10/05/2021 – 14/05/2021 Granada

PHREEQC course

Course delivered by Full Professor Encarnacion Ruiz Agudo, expert PhReeQc user

19/07/2021 – 23/07/2021 Granada

Micro-Raman course

Micro-Raman spectroscopy course delivered by the manufacturer HORIBA

12/07/2021 – 16/07/2021 Granada

Corso di microscopia a scansione elettronica (SEM)

SEM training course conducted by specialized Thermo Fisher technicians, with particular focus on environmental scanning electron microscopy applications (without metallic coating)

13/09/2021 – 16/09/2021 Universidad de Granada

Total Scattering Workshop

Total Scattering Workshop led by Prof. Jorge A. Rodriguez-Navarro and expert faculty from the University of Insubria, covering total scattering techniques and software applications including DEBUSSY for data analysis.

22/11/2021 – 26/11/2021 Universidad de Granada

School on properties of lime, SUBLime RTC1-1

Course delivered by Prof. Carlos Rodriguez Navarro within the SUBLime framework, extensively covering lime properties with emphasis on future research applications from both historical conservation and innovative materials perspectives.

10/07/2022 – 15/07/2022 Honolulu, Hawai'i, USA

Goldschmidt 2022 – International Conference of geochemistry in Honolulu

Goldschmidt International Conference, Honolulu, Hawai'i, USA. Delivered oral presentation at this premier international geochemistry conference.

30/11/2022 – 02/12/2022 Granada

9th Granada-Münster Discussion Meeting

Discussion Meeting with the Granada and Munster group with Helmut Coelfen, Andrew Putnis e Carlos rodriguez Navarro.

25/04/2022 – 29/04/2022 Santorini, Greece

Workshop in Geochemical Modelling, SUBLime RTC 1-3

Full Geochemical Modelling course with Prof. Encarnación Ruiz-Agudo.

19/09/2022 – 23/09/2022 Darmstadt, Germany

Workshop on the sustainability of lime, SUBLime RTC1-4

Network Research Training on the Sustainability of lime, in the contest of RTC1-4

24/02/2023 – 25/02/2023 Cordoba, Spain (Feb 24-25)

Marie Curie Alumni Association Annual Conference

06/03/2023 – 11/03/2023 Rabat, Morocco (Mar 6-11)

RILEM – Spring Convention CMSS23

11/04/2023 – 12/04/2023 Online

SUBLime – Scientific Progress conference meet- ing

13/06/2023 – 15/06/2023 Ghent, Belgium

CrypPom VIII – Crystallization in Porous Media conference

09/07/2023 – 14/07/2023 Lyon, France

Goldschmidt 2023 – International Conference of geochemistry in Lyon

22/05/2023 – 26/05/2023 TU Delft, Nederland

Workshop on Micro-Meso Scale Structures, SUBLime RTC 2-1

Micro-Meso Scale Structures RTC 2-1, held by Prof. Erik Schlangen in TU Delft, Nederland

23/10/2023 – 27/10/2023 UMinho, Portugal

Workshop on Lime Mortars Masonry system, Sublime RTC1-2

Workshop on Lime Mortars Masonry system, in the frame of Sublime RTC1-2 with Prof. Paulo B. Lourenço

18/10/2023 – 21/10/2023 Guimarães, Portugal

Marie Curie Soft Skills and Comunication skills training

19/04/2024 – 27/04/2024 Gliwice, Poland

Workshop on Structure design, SUBLime RTC 2-2

Structure design, RTC 2-2, SUBLime Network Training

17/04/2024 – 19/04/2024 Gliwice, Poland

Complementary skills Workshop in the SUBLime Network

Complementary skills Workshop
SUBLime Network Training
Gliwice, Poland (Apr 17-19)

26/08/2024 – 30/08/2024 Padova, Italy

ECM34 – 34th European Crystallographic Meeting

ECM34 – 34th European Crystallographic Meeting Padova, Italy

30/08/2024 – 02/09/2024 Padova, Italy

EPDIC18 – 18th European Powder Diffraction Conference

EPDIC18 – 18th European Powder Diffraction Conference

09/11/2024 – 14/11/2024 Madeira, Portugal

SUBLine – international conference

27/11/2024 – 30/11/2024 Granada Spain

11th Granada-Münster Discussion Meeting

10/02/2025 – 14/02/2025 hybrid

2025 Europlanet GMAP Winter School

The GMAP Winter School is focused on the production of planetary geological maps of a range of Solar System bodies: building upon earlier editions.

Link <https://www.planetarymapping.eu/>

27/01/2025 – 30/01/2025 Padova

Chemometrics course of Experimental Design

"Chemometrics: Experimental Design" course, instructed by Prof. Riccardo Leardi from the University of Genoa, is scheduled to take place from January 27 to 30, 2025. The course duration is 30 hours in total (5 CFU).

14/04/2025 – 17/04/2025 Metz, France

International Workshop: Granular Materials Fundamentals, Applications and Concepts for Extraterrestrial Regolith including Moon, Mars and Asteroids

Link <https://regolith-metz.event.univ-lorraine.fr/>

22/06/2025 – 27/06/2025 Munster, Germany

European Lunar Symposium

Link <https://cris.uni-muenster.de/portal/de/project/132729696>

06/07/2025 – 11/07/2025 Prague, Czech Republic

Goldschmidt 2025 – International Conference of geochemistry in Prague

Link <https://conf.goldschmidt.info/goldschmidt/2025/goldschmidt/2025/meetingapp.cgi>

02/09/2025 – 04/09/2025 Padova

7th Historic Mortars Conference (HMC 2025)

Actively participating in the organization and scientific production, HMC 2025 is a conference covering the technology and characterization of historic mortars, issues related to the conservation and restoration of historic masonry structures and archaeological sites, the development of heritage-inspired building materials for sustainable architecture, the formulation of materials for architectural restoration and test methods for historic and restoration mortars.

Link <https://hmc2025.com/>

16/09/2025 – 18/09/2025 Padova

Le Geoscienze e le sfide del XXI secolo, Congresso congiunto SIMP-SGI Padova

Conference featuring two presentations on the work carried out in the first year of the Space It Up project

Link <https://www.geoscienze.org/padova2025/>

26/01/2026 – 28/01/2026 Firenze

Space it Up! Days

The event represents the first plenary congress of the Space it Up! project, bringing together project partners and the broader scientific community. Three poster presentation.

Link <https://spaceitup.it/event/siu-days/>

● **COMPETENZE LINGUISTICHE**

Lingua madre: **ITALIAN**

Altre lingue:

	COMPRESIONE		ESPRESSIONE ORALE		SCRITTURA
	Ascolto	Lettura	Produzione orale	Interazione orale	
ESPAÑOL	C2	C1	C1	C1	C1
ENGLISH	C1	C1	B2	C1	C1
ΕΛΛΗΝΙΚΑ	A2	A1	A1	A2	A1
FRANÇAIS	A2	A1	A2	A2	A1

Livelli: A1 e A2: Livello elementare B1 e B2: Livello intermedio C1 e C2: Livello avanzato

● **COMPETENZE**

Origin Pro | XPert High Score + | LaTeX | X PowderX | ImageJ | Posta elettronica | conoscenza di Windows e di Linux | Applicazioni grafiche e di publishing (Photoshop GIMP Illustrator InkScape Scribus) | Libre Office (Libre Office Writer, Libre Office Impress, Libre Office Calc)

● **HOBBY E INTERESSI**

Music

From playing guitar and saxophone to listening to jazz, blues, and bossa nova.

Photography, visual arts, decorative arts, and cultural heritage

From landscape and architectural photography to visiting art galleries, from studying decorative techniques to exploring cultural sites.

Link <https://www.juzaphoto.com/me.php?p=232357&pg=allphotos&srt=data&l=it>

Sport

From football to surfing, from table tennis to sumo.

● **PUBBLICAZIONI**

2024

[Additive impact on early-stage magnesium carbonate mineralization.](#)

Santoro De Vico F., Elert K., Rodríguez-Navarro C., Bonilla-Correa S., Pelayo-Punzano G., Ruiz-Agudo E. Additive impact on early-stage magnesium carbonate mineralization. In: Geochemical Perspectives Letters, 32 (2024), 1–6

2025

[Formation of micropillars on etched calcite and their biomimetic effect on wettability: Implications for built heritage protection](#)

Santoro De Vico, F., Elert, K., Ruiz-Agudo, E., & Rodriguez-Navarro, C. (2025). Formation of micropillars on etched calcite and their biomimetic effect on wettability: Implications for built heritage protection. Materials & Design, 255.

2023

[A Physico-chemical Study of Lime-based Mortars from Different Historical Periods](#)

Santoro De Vico F., Zagaroli A., Rodríguez-Navarro C., Kubica J., Gorski M. A Physico-chemical Study of Lime-based Mortars from Different Historical Periods. In: NanoWorld Journal, 9S2 (Sept. 2023), S256–S261

2025

[Mudbricks with tea grounds: A zero CO2 emission option for more sustainable and environmentally-friendly construction](#)

Crespo-López, Laura, et al. "Mudbricks with tea grounds: A zero CO2 emission option for more sustainable and environmentally-friendly construction." Construction and Building Materials 472 (2025): 140982.

2025

[Multi-Analytical Assessment of Ethyl Silicate-Treated Bricks: From Salt Deterioration to Long-Term Protection](#)

Crespo-López, Laura, et al. "Multi-Analytical Assessment of Ethyl Silicate-Treated Bricks: From Salt Deterioration to Long-Term Protection." Journal of Building Engineering (2025): 113384.

2024

[Novel Techniques for the Assessment of Injectability & Environmental Resistance of Injection Grouts for Mosaic Conservation](#)

Nome della pubblicazione: Proceedings of the Workshop "Lime Based Materials for Repairing Historic Structures"

2026

[olcanic deposits from mount Etna \(Italy\) as high-fidelity lunar simulants for In-Situ Resource Utilization \(ISRU\) applications](#)

Autori: Giacomo Melchiori, Francesco Santoro De Vico, Alice Dottori, Riccardo Pozzobon, Luca Valentini, Patrizia Ferretti, Alessandro Bonetto, Michéle Lavagna, Sonia Calvari, Matteo Massironi | **Nome della pubblicazione:** Materials Today Advances | **Volume, numero, pagine:** Volume 29, 2026, 100678, ISSN 2590-0498

● RESEARCH EXPERIENCES

01/06/2023 – 01/09/2023

PhD secondment in UGent

University of Ghent (UGENT), Ghent, Belgium. Development of mortars with different functionalities.

10/07/2023 – 25/07/2023

Research Period μ -CT Core Facility (UGCT), Ghent, Belgium

Conducted extensive research on microtomography.

01/06/2022 – 01/07/2022

ARQUS Research Period University of Padova, Padova

Focused on development rheology studies

01/02/2022 – 15/03/2022

Industrial secondment Lhoist Group R & D, Nivelles, Belgium

Development of new mix design for the industry

● TEACHING EXPERIENCE

2022 – 2024

Lecturer of "Techniques for Analyzing Geomaterials" in UGR

Two years of teaching experience (1 ECTS credit per year) in the Geology degree program.

Course taught in Spanish.

– Course entitled: "Techniques for Analyzing Geomaterials"

02/2025 – 05/2025

Guest lecturer in the course of MINERAL PROCESSES AND ENVIRONMENTAL APPLICATIONS in UNIPD 2025

Guest lecturer about the study and applications of lime and the use of PHREEQC software

07/11/2025 – 07/11/2025

Guest lecturer in the course of PLANETARY GEOLOGY in UNIPD 2025

Guest lecturer about the study and applications of ISRU technique on the moon

09/2025 – 01/2026

Teaching assistance for the course "PRINCIPI DI GEOSCIENZE" in UNIPD 2025

● **RETI E AFFILIAZIONI**

2021 – ATTUALE

RILEM

Link <https://www.rilem.net/>

2022 – ATTUALE

Geochemical Society

Link <https://www.geochemsoc.org/>

2021 – ATTUALE

SUBLime Network

2024 – ATTUALE

Giovani Cristallografi italiani

2025 – ATTUALE

Consorzio "SPACE IT UP"

2021 – ATTUALE

MCAA - Marie Curie Alumni association

Link <https://www.mariecuriealumni.eu/>

2017 – ATTUALE

University of Padua Alumni Association

Link <https://www.unipd.it/en/alumni>

2025 – ATTUALE

Europlanet

Link <https://www.europlanet.org/>

2025 – ATTUALE

SIMP - Società Italiana di Mineralogia e Petrologia

Link <https://www.socminpet.it/>

05/2025 – ATTUALE italia

Società Speleologica Italiana (SSI)

● **COMPETENZE DI GESTIONE E DIRETTIVE**

2010 – 2011

Student Representative, Liceo Calini, Brescia

Elected with the highest vote count as student representative. This experience allowed me to understand the dynamics within the school while actively collaborating and communicating with school administration and teachers.

2010 – 2012

Student Council Representative, Liceo Calini, Brescia

Elected with the highest vote count to represent students on the Provincial Student Council. This experience provided opportunities to collaborate with representatives from other provincial schools and advocate for my high school at provincial assemblies. Served as co-organizer of the Brescia Provincial Art Day (GDA) for two years.

2016 – 2020

Student Representative, Department of Geosciences, University of Padova

Elected with the second-highest vote count to represent students in the Department of Geosciences. During this two-year tenure, I addressed faculty challenges and served as a bridge between professors and fellow students.

● **ATTIVITÀ SOCIALI E POLITICHE**

27/09/2025 – 28/09/2025 Padova

Science4All 2025

Science communication and outreach at "Science4All," an event organized by the University of Padua for the European Researchers' Night. Participated at Stand 46 on behalf of the CISAS department.

Link <https://science4all.it/>

Padova - piattaforma social del dipartimento di Geoscienze

Video interview per l'International Day of Women and Girls in Science

Interview for the celebration of women in research.

Link https://youtu.be/i-BiWLAqh1c?si=qXh7J_8BhJ3WQ35E

12/2025 Padova - piattaforma social del dipartimento di Geoscienze

Video Communication on Etean simulants article

Interviewed for science outreach on the publication "Volcanic deposits from Mount Etna (Italy) as high-fidelity lunar simulants for In-Situ Resource Utilization (ISRU) applications." Produced in extended English version and short Italian version.

Link <https://youtu.be/orKbDZ7eTIs?si=9SyJ4PIKoe9gPTwx>

Padova

Science Outreach and Interview "Detective Antropocene"

Delivered presentations and activities at high schools for the "Anthropocene Detective" project, which I conceived and developed. Event held as part of "Geosciences Friday," a public engagement initiative by the Department of Geosciences for Sustainable Development.

Autorizzo il trattamento dei miei dati personali presenti nel CV ai sensi dell'art. 13 d. lgs. 30 giugno 2003 n. 196 - "Codice in materia di protezione dei dati personali" e dell'art. 13 GDPR 679/16 - "Regolamento europeo sulla protezione dei dati personali".