
CURRICULUM VITAE: ANGELA CALIA

CURRENT POSITION

Research Director at CNR-ISPC (National Research Council - Institute of Heritage Science), since 2023.

PROFESSIONAL PROFILE AND CAREER

- **1994–2006:** Researcher at CNR-ISCOM and subsequently at CNR-IBAM (Institute for Archaeological and Monumental Heritage).
- **2007–2022:** Senior Researcher at CNR-IBAM and subsequently at CNR-ISPC.

EDUCATION AND TRAINING

- **1992:** Scholarship from the University of Bari for research activities at the "Laboratoire de Conservation de la Pierre" of the École Polytechnique Fédérale de Lausanne (Switzerland).
- **1990–1992:** CNR Scholarship for research activities at the Department of Geomineralogy of the University of Bari and at CNR-IsCOM (Institute for the Conservation of Monumental Heritage), Lecce.
- **1988:** M.S. in Geological Sciences from the University of Bari.

RESEARCH ACTIVITY

Her research activity focuses on Cultural Heritage materials and artifacts, addressing issues related to their understanding, diagnosis, and conservation.

◇ RESEARCH INTERESTS

- **Materials Characterization:** Mineralogical-petrographic, chemical, and physical applications for the study of natural and artificial stone materials, paintings, and surface finishes in Cultural Heritage artifacts. These studies are conducted for archaeometric purposes (nature of component materials, production technologies, execution techniques, provenance and dating, etc.) and to support enhancement interventions.
- **Decay and Durability:** Petrophysical and physico-mechanical characterization of historical building materials combined with artificial ageing processes, aimed at studying the causes and mechanisms of decay, durability, and conservation issues.
- **Integrated Diagnostics:** Application of integrated diagnostic technologies, research on correlations between destructive and non-destructive testing, and development of minimally destructive analytical protocols.
- **Conservation:** Development and testing of new products/treatments for the conservation of stone surfaces, and laboratory/in situ study of performance outcomes (efficacy, harmlessness, and durability) in relation to the substrates and the exposure environment.

Research on these topics follows a highly interdisciplinary approach and is carried out within research and RTD projects in which she has served as coordinator, head of a research unit, or collaborator.

◇ PROJECTS WITH SCIENTIFIC RESPONSIBILITY

R&I Projects:

- **2019–2022:** Operational Unit CNR-ISPC Fixlab@Lecce - Italian node of E-RIHS, SHINE Project (Strengthening the Italian Node of E-RIHS), PON IR 2014-2020.
- **2012–2014:** Scientific Coordinator of the PRO.ME.TE.O.S. Project (Products, Methodologies, and Advanced Technologies for the Diagnostics and Conservation of Historical Buildings), Apulia Region - Aid supporting Regional Partnerships for Innovation, ERDF 2007-2013.
- **2009–2017:** Scientific Coordinator of the A.I.Te.C.H. (Applied Innovation Technologies for Diagnosis and Conservation of Built Heritage) network project and the Pilot Project – Proposals for plans related to public research laboratory networks, Framework Agreement MISE, MUR, and Apulia Region, FESR-FSE 2007-2013 Apulia.
- **2014–2015:** CNR-IBAM and CNR-INO Collaboration, ITACHA Project (Italian Advanced technologies for applications in Cultural Heritage), PON R&C 2007-2013.
- **2009–2012:** CNR-IBAM Research Unit - Protection, consolidation, and cleaning of stone materials in the Apulia Region, Strategic Project POR Apulia 2000-2006.
- **2007:** IBAM Research Unit - Superior durability nanocomposite hybrid adhesives, Exploratory Project POR Apulia 2000-2006.

National and International Research Projects:

- **Since 2025:** Archaeometry, Diagnostics, and Conservation, Project DUS.AD015 / Diagnostics, intervention, and conservation of cultural heritage, Department of Human and Social Sciences, Cultural Heritage (DUS) of the CNR.
- **2016:** Advanced Statistical Analysis for the correlation of experimental data from destructive and non-destructive testing, CNR Scientific Cooperation - University of Bordeaux, CNR Short Term Mobility International Cooperation.
- **2013–2015:** Atomic Layer Deposition (ALD) for the protection of stone in Cultural Heritage, CNR-IBAM and University of Maryland Collaboration.
- **2012–2023:** Diagnostic knowledge and conservation of materials and artifacts of historical, archaeological, and architectural interest in the Mediterranean area, Project DUS.AD015 / Diagnostics, intervention, and conservation of cultural heritage, Department of Human and Social Sciences, Cultural Heritage of the CNR.
- **2000–2001:** CNR-IsCOM Research Unit - Product and Process Innovation in SMEs in the Ionian-Salento area, LINK Project (Law 488/92), MIUR.
- **1999–2001:** The built environment in Southern Italy: technical and historical aspects, CNR-Is.C.O.M Research Project.
- **1997–2000:** Is.C.O.M Research Unit - Diagnostic Projects on the historical centers of Syracuse (Ortigia) and Palermo, Agreement among C.N.R. - I.N.B.C. (National Coordination Institute for Cultural Heritage), the Municipality of Syracuse, and the Municipality of Palermo.

◇ PARTICIPATION IN RESEARCH PROJECTS

- **2023–2025:** POTOR (People, Pots and Drinks. An interdisciplinary approach to drinking and commensality practices in pre-Roman Southern Italy), PRIN 2022 PNRR.
- **2023–2025:** TARAS (Tarantine Ancient Archaeology and Architecture Restoration and Sustainability), PRIN 2022 PNRR.
- **2021–2022:** Archaeological campaign and conservation of the Assyrian site of Faida (Iraqi Kurdistan), Directorate of Antiquities of Duhok (Iraq) and University of Udine.
- **2015–2016:** LIEMP - Network of laboratories for improving the energy efficiency of buildings and monuments, Proposals for plans related to public research laboratory networks, Framework Agreement MISE, MUR, and Apulia Region, FESR - FSE Apulia 2007-2013.
- **2013–2016:** INCULTURE (Innovation in Culture, Tourism and Restoration), PON R&C 2007-2013 Smart Cities and Communities and Social Innovation, FSE-FESR MIUR.
- **2013–2015:** Global archaeology and History of the rural landscapes of Italy between Late Antiquity and Middle Age. Integrated systems of sources, methods and techniques for a sustainable development, PRIN MIUR.
- **2012–2013:** M.Ar.TA (National Archaeological Museum of Taranto) narrates. Virtual stories of hidden treasures", Cassa di Risparmio di Puglia Foundation.
- **2007–2008:** Geomonumental routes. Comparison of methodologies and knowledge for the conservation and valorization of geomonumental routes: the granite of Madrid and the calcarenites of Salento, Bilateral project IBAM-CNR and IGE-CSIC (Spain).
- **2006–2007:** ByHeriNet. Byzantine Heritage Network Rehabilitation, Highlighting and Management in the Eastern Mediterranean Basin, Interreg IIIB Project.
- **1999–2000:** Methods and products for the preservation of buildings, CNR-IsCOM Project.
- **1999:** Project P1 Characterization and certification of materials for the recovery and restoration of existing buildings, Intervention program for the creation of Scientific and Technological Parks in Southern Italy, MURST.
- **1996–1999:** WP IsCOM - Microseismic testing and related methodologies for the identification of ancient masonry, CNR Finalized Project.
- **1995:** WP IsCOM - Correlation between microstructural properties and in situ behavior of highly porous construction materials, CNR Strategic Project for Cultural Heritage.

SCIENTIFIC COLLABORATIONS

- **International:** AUTH-Aristotle University of Thessaloniki (Greece); University of Maryland (USA); Loughborough University (UK); Université de Bordeaux (France); University of Malta; IGE-CSIC (Madrid); ICCROM (Rome).
- **National (Universities):** Bari, Basilicata, Cagliari, IUAV Venice, Rome "La Sapienza", Padua, Parma, Salento.
- **Research Institutes and Institutions:** CNR Institutes (formerly ICVBC, IPCF, ISAC), ENEA Brindisi, CETMA (Brindisi), Superintendencies of Apulia and Basilicata, Central Institute for Restoration (ICR).
- **Industrial Laboratories:** Italcementi Laboratory, CE.Ri.Col (Colorobbia), Salentec srl.

SPECIALIZED CONSULTING

- **Regulations/Standards:** Member of the UNI-Normal Technical Commission for Cultural Heritage GL 02 (since 2024) and GL 13 (1998–2006).
- **Territorial Planning Support:** Contribution to the drafting of the "Guidelines for the recovery, maintenance, and reuse of rural buildings and heritage", PPTR of the Apulia Region (2009).
- **Scientific Consulting:** Characterization of the mineralogical properties of phyllosilicates for the creation of nanocomposites, Consulting for the University of Salento on Strategic Project PS108 (2007).
- **Consulting and Diagnostic Services:** For Superintendencies, local authorities, designers, and restoration companies.

SCIENTIFIC AND INSTITUTIONAL ROLES

Head of Laboratories:

- FIXLAB@Lecce at CNR-ISPC - Italian node of E-RIHS (since 2021).
- Chemistry Laboratory, CNR-ISPC Lecce (2020–2025).
- Archaeometry, Diagnostics, and Conservation Laboratory, CNR-IBAM (2010–2016).
- Optical Microscopy and X-Ray Diffractometry Laboratory, CNR-IBAM (2005–2012).

Member of Scientific Bodies, Committees, and Groups:

- Scientific Committee CNR-ISPC (2020–2024), IBAM (2004–2016), and Is.C.O.M. (1998–2000).
- Working Group of the Strategic Area "Historical-Cultural Heritage Sciences" - Activities for the preparation of programmatic documents, DUS-Department of Human and Social Sciences, Cultural Heritage (2022).
- Scientific Committee of the Cultural Heritage in Puglia Conference (Bari 2022, 2025).
- Scientific Committee of the YOCOCU International Conference (Matera, 2018; Agsu, Azerbaijan, 2014).
- Organizing Committee of the XVI National Conference of Environmental and Cultural Heritage Chemistry, Lecce, June 26-29, 2016.
- Organizing Committee of the TECHNART 2015 International Conference - Non-destructive and microanalytical techniques in Art and Cultural Heritage, Catania, April 27-30, 2015.
- A.I.Ar. (Italian Association of Archaeometry), 2003–2007.
- ASMOSIA (Association for the Study of Marbles and Other Stones In Antiquity), 2003–2008.
- AISCOS (Italian Association for the Study and Conservation of Mosaics), 2003–2006.

Project and PhD Evaluation:

- Tech4Culture PhD Panel Member (H2020-MSCA) (2019).
- NWO Evaluator (Netherlands Organisation for Scientific Research) for GeoERA EU Call, Topic RM2 – Construction Materials (2018).

- Reviewer of PhD thesis in Environmental and Cultural Heritage Chemistry, University of Trieste and Ca' Foscari University of Venice (2022).
- Reviewer of PhD thesis in Materials Science and Engineering, Carlos III University of Madrid (2017).
- Reviewer of PhD thesis in Petrology and Geochemistry, Complutense University of Madrid (2013).

Editorial Activities:

- Guest Editor of the Special Issues "Advanced Materials & Methods for Heritage & Archaeology", 1st and 2nd editions, *Materials* journal, (2022–2025), and Reviewer for numerous international journals.

Institutional Appointments:

- CNR Representative Member on the Memorandum of Understanding Committee between the Municipality of Lecce and the CNR (since 2020).
- Scientific Head of the Memorandum between CNR-ISPC (formerly IBAM) and the Central Institute for Restoration (ICR)-MIBACT of Matera (since 2016).
- Member of the final PhD examination commission, 37th PON cycle, Environmental Sciences, Ca' Foscari University, Venice (2025).
- Delegate for relations with the Apulia Region (2013–2019).
- Member of the Doctoral Faculty Board in Earth Sciences - University of Basilicata (2008–2013).
- Member of the Joint Committee CNR-University of Salento (2008–2013).

TEACHING AND TUTORING ACTIVITIES

University Teaching / Higher Education:

- Mineralogy-Petrography, Master's Degree Course in Conservation and Restoration of Cultural Heritage, ICR Higher Education School - Matera branch (since 2016).
- Lecturer at the International Training Camp ERIHS.it @ ReUSO 2019, Italian node of ERIHS in collaboration with the University of Florence (2019).
- Technologies of transport phenomena in materials, Bachelor's Degree Course in Technologies for Conservation and Restoration, University of Salento (2010–2011).
- Technologies and materials for restoration, Bachelor's Degree Course in Cultural Heritage Technologies, University of Salento (2005–2010).
- Postgraduate course "Experts in techniques for the protection and conservation of Cultural Heritage", Training activities for the Strategic Project "Protection, consolidation, and cleaning of stone materials characteristic of the Apulia region...", POR Apulia 2000-2006 (2011).
- Lectures and seminars in national and international postgraduate specialization courses and master's programs at: University of Seville, AUTH Thessaloniki, ICCROM, ISUFI (Higher School, Lecce), Salento University, CSEI (University Centre for Training and Innovation, Bari), CETMA (Brindisi).
- Lectures in training courses for technicians and restorers, organized by local authorities, restoration companies, and Superintendencies.

Tutoring / Mentoring:

- Research fellowships at CNR-ISPC, Human resources enhancement for the Italian node E-RIHS, PNIR - National Program for Research Infrastructure, MUR (2021–2023).
- Research fellowships at CNR-IBAM, Human Capital Networks of Public Research Laboratories, P.O. Apulia 2007 – 2013, FSE (2010–2012).
- Research fellowships for joint research activities between CNR-IBAM and local SMEs, Improvement of human resources in the research and technological development sector, FSE Apulia and Basilicata (2007–2012).
- PhD scholarship in Earth Sciences - XXIV cycle, co-funded by the University of Basilicata and CNR-IBAM (2008–2011).
- Internships for the Second-Level University Master "Operators for the System Laboratory" - University of Bari (2013–2014).
- Internships for the Bachelor's Degree Course in Cultural Heritage Technologies, University of Salento (2005–2010).
- Internships for the SIDART Training Project "Postgraduate studies for the training of specialized researchers in the monitoring and diagnostics of Cultural Heritage", University of Lecce - ISUFI Higher School (2005).
- Internships for the First-Level Master "Science and Conservation of Materials in Cultural Heritage" - University of Bologna and CNR-ISTEC of Faenza (2003).

TECHNOLOGY TRANSFER AND KNOWLEDGE DISSEMINATION

- **AITECH Pilot Project:** Coordination of innovation activities in Apulian SMEs, promotion of research services with professional associations (Assorestauro, ANCE, Confindustria), and collaboration with Regional Technology Transfer Offices (ILO), 2012–2017.
- **Integration of public research laboratory networks with the Apulian ILO Network,** Notice from the Industrial Research and Innovation Service of the Apulia Region: Coordination of activities for the enhancement of the AITECH research infrastructure in the regional service catalogue (in collaboration with ARTI Apulia), 2014
- **Technology transfer:** Product and process innovation for SMEs in the stone sector and material certification (LINK Demonstrator Project, MURST), 2000-2001.
- **Consulting for PASTIS Brindisi:** Support for the activation of services in the field of recovery and restoration of existing buildings (Project P1, MURST intervention program for the creation of Scientific and Technological Parks in Southern Italy), 1999.
- **Scientific Dissemination / Outreach:**
 - Workshop: CNR-IBAM Laboratories between research and innovation, Lecce 2013.
 - Workshop: Synthesis of three years of research on innovative technologies and materials at the service of Cultural Heritage, Lecce, 2012.
 - Workshop: The heritage of rupestrian churches: from knowledge to utilization. Integrated methodologies and activities for Cultural Heritage, Matera, 2009.
 - Organization of presence at sector events (Innovation Festival 2010, ARTI Puglia Bari; Mediterranean Exchange of Archaeological Tourism, Paestum 2011; RESTAURO Ferrara, 2012; SMAU-R2B Bologna 2013; SMAU-Smart Puglia Expo 2013; Medistone Expo 2013; Researchers' Night).