



Anastasia Giakoumaki, PhD

Chemical Engineer with a 20+ experience as a Researcher in materials analysis and characterisation as well as design and development of analytical instrumentation both in Universities and Research Centres as well as in the private sector (R&D).

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[Anastasia Giakoumaki \(researchgate.net\)](#)

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Date of birth: 17.01.1979

Place of birth: Athens, GR

EDUCATION

2008: Ph.D. in Materials Science and Technology

University of Crete, Department of Materials Science and Technology, Greece

2003: Master of Science in Protection of monuments – Materials and Techniques of Conservation (9.16/10)

National Technical University of Athens, School of Architecture, Greece

2002: Diploma in Chemical Engineering (7.87/10)

National Technical University of Athens, School of Chemical Engineering, Greece

PROFESSIONAL EXPERIENCE

July 2024 – present: Project Manager, Institute of Electronic Structure and Laser, Foundation for Research and Technology, Greece

Project Manager and Technical Manager of the Horizon Europe Project iPhotoCult (Intelligent Advanced Photonics Tools for Remote and/or on-site Monitoring of Cultural Heritage Monuments and Artefacts)

July 2023 – June 2024: Technology Licensing and Commercialization Consultant, PRAXI Network, Foundation for Research and Technology, Greece

Technology transfer, creation and update of researchers' technology portfolio, tender and proposal preparation, implementation of research projects, training, event organisation

September 2020 – June 2023: Experienced Research Assistant, Foundation for Research and Technology, Institute of Electronic Structure and Laser, Greece

Research and development of a hybrid, portable analytical instrument for the characterisation of materials in archaeological objects and monuments, especially biological deterioration. Analysis with LED-Induced Fluorescence, Laser-Induced Breakdown Spectroscopy and Diffuse Reflectance Spectroscopy.

June 2014 – August 2020: Senior application scientist, Applied Photonics Ltd, UK

R&D in laser spectroscopy for the analysis and characterisation of materials. Conduction of feasibility studies including literature reviews and experimental investigations on the use of LIBS in a wide range of applications. Preparation of technical reports. Optical analytical systems mechanical assembly and optical alignment and optimisation. Generation of

application notes, technical notes, presentations, product datasheets. Company's website upgrade. Support of existing customers with LIBS method development. Interaction with hardware and software engineers to improve system user experience and to enhance hardware/software features.

August 2011 – May 2014: Contracted Post-Doctoral Researcher, University of the Basque Country, Department of Analytical Chemistry, Spain

Experimental investigations using spectroscopic techniques, like LIBS, Raman, XRF and IR for the analysis and characterisation of materials in archaeology and art. Study of their deterioration products for their effective conservation.

March – July 2011: Contracted Post-Doctoral Researcher, Laser Centre, Polytechnic University of Madrid, Spain

Fundamental laser plasma studies

September 2009 – April 2010: Marie Curie Post-Doctoral Fellow, University of Murcia, Laboratory of Optics, Spain

Experimental investigations of non-linear imaging techniques (two-photon excitation fluorescence and second harmonic generation) for the study of ocular tissues.

June 2004 – February 2009: Researcher with scholarship, Foundation for Research and Technology, Institute of Electronic Structure and Laser, Crete, Greece

Spring semesters 2006 – 2008: Teaching assistant, Department of Materials Science and Technology, University of Crete

Laboratory of General Chemistry

Spring semester 2005: Teaching assistant, Department of Materials Science and Technology, University of Crete

Laboratory of "Methods for the production of soft matter"

Winter semester 2004: Teaching assistant, Department of Materials Science and Technology, University of Crete

Laboratory of Physics I

November 2003 – May 2004, Scientific partner, School of Chemical Engineering NTUA, Department of Materials Science and Technology

Studies on the use of building materials compatible with historic masonries for their conservation/preservation

July – August 2001, Trainee, Electronic Parts & Components, Deutschlandsberg, Austria

Research on the manufacture of piezoelectric materials

July – August 2000, Trainee, Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany

Metallographic research of aluminium alloys

LANGUAGES

Greek native speaker

English fluent (First Certificate in English, 6 years residency in the UK)

German fluent (Kleines Deutsches Sprachdiplom, 4 m. residency in Germany & Austria)

Spanish fluent (5 years residency in Spain)

French basic (lessons during 6 years in High School)

COMPETENCES AND ACHIEVEMENTS

35 publications in international scientific journals, books and conference proceedings

58 oral and poster presentations in international scientific conferences

Editorial Board Member of the Scientific Journal 'Heritage'

Co-guest editor of 'Applied Sciences' Special Issue 'Photonics and Digital Twins for Sustainable Cultural Heritage Diagnostics and Conservations'

Microsoft Office, Origin, Internet, Autocad 2D skilled user

Reviewer in scientific journals, (Journal of Raman Spectroscopy, Spectrochimica Acta Part B)

Laser Safety Workshop attendance (National Physical Laboratory-Training Personnel Competency Standard 2015, UK)

Member of the Technical Chamber of Greece

Participation in campaigns for the in-situ analysis of materials in various countries, like Greece, Italy, Spain, Syria and Jordan

Tutor of the Master Thesis of Estefanía Calparsoro: "Deterioration of construction stone materials induced by atmospheric contaminants: blackening", University Master in restoration and integrated management of the constructed heritage of the University of the Basque Country

Tutor of the Graduate Thesis of Anna Skarlatidou: "Classification of fluorescence spectra acquired from biodeterioration on surfaces of archaeological objects with Principal Component Analysis"

Member of the committee of the Ph.D. thesis of Julene Aramendia Gutierrez: "Analytical diagnosis of the conservation state of weathering steel exposed to urban atmospheres", Department of Analytical Chemistry, University of the Basque Country

Organization of events for technology transfer and novel product commercialization: Information Day about the role and services of PRAXI Network (18/09/2023, FORTH, Heraklion, Greece), INNODAYS (24-26/11/2023, International Exhibition Centre, Gournes, Greece), Match and Develop a start-up Bootcamp and Conference Innovate Crete 5.0 (National Bank of Greece Business Seed) (28-29/03/2024, FORTH, Heraklion, Greece)

Imparted training courses about Technology Transfer and Commercialization of Innovative Results in the framework of the EIT Health Ageing PhD School

Participated in the organization of seminars and schools: Winter school and Annual Meeting of Myeuropia European Project (18-20/01/2010 Murcia Spain), Training course through the ATHENA European Project- Lasers for the preservation of cultural heritage (07-11/02/2005, Heraklion, Greece) and the Advanced study course ITECOM - Innovative technologies and materials for the conservation of monuments (08-20/12/2003, Athens, Greece)

Attended courses of Optics in the Spring Semester of 2007, Spectroscopy in the Winter Semester of 2006 and Materials Analysis in the Spring semester of 2005 in the University of Crete

Volunteer work in the administrative department of the International Association for the Exchange of Students for Technical Experience (IAESTE)

Car licence, Sailing licence, mandolin, running, yoga, theatre, pilates, contemporary dance

AWARDS

Post-graduate fellowship of the Greek State Scholarships Foundation (2004-2008)

Second prize on poster presentation “Spectroscopic analysis using a hybrid LIBS – Raman system”, A. Giakoumaki, I. Osticioli., D. Anglos in “Euro-Mediterranean Symposium on Laser-Induced Breakdown Spectroscopy – EMS-LIBS 2005” Aachen, Germany, September 2005

Third prize on poster presentation “A survey over the capabilities of LIBS in the quantification of archaeological copper alloys”, A. Giakoumaki, A. Doridot, L. Robbiola, D. Anglos in “Laser-Induced Breakdown Spectroscopy 2008” Berlin, Germany, September 2008

Third prize on poster presentation “Methodology development for the successful removal of coexisting biofilms and black crusts on archaeological stonework using the 2-wavelength laser cleaning approach”, E. Kourti, A. Giakoumaki, K. Melessanaki, P. Pouli in “LACONA XIII – Lasers for the conservation of artworks”, Florence, Italy, September 2022

RESEARCH PROJECTS

Principal investigator for FORTH at the submission proposal SafeFuture “Safeguarding the future of our past” (HORIZON-CL2-2025-01-HERITAGE-03), Budget for FORTH: 800.000 €

Scientific coordinator for IESL-FORTH at the submission proposal CHES “Assessment of Cultural Heritage Sensitive assets and conservation monitoring Solutions” (HORIZON-CL2-2024-HERITAGE-CULTURAL HERITAGE CLOUD-01-05), Budget for IESL-FORTH: 134.900 €

Coordinator for PRAXI Network-FORTH at the submission proposal HUB4WIDE-WIDENING DISSEMINATION AND EXPLOITATION HUB (HORIZON-WIDERA-2023-ACCESS-05/ Dissemination and Exploitation Support Facility)

Scientific coordinator for IESL-FORTH at the submission proposal HERITSEN “Cultural HERITage SENsoring methods for optimal green and effective conservation strategies and material selection” (HORIZON-CL2-2023-HERITAGE-01), Budget for IESL-FORTH: 275.000 €

Greek project CALLOS “Conservation of Athens antiquities with Laser and Lidar technologies Open to Science and public (MIS-5056208), an “open innovation in culture” action co-funded by the European Regional Development Fund (ERDF) and national resources through the Operational Program “Competitiveness, Entrepreneurship & Innovation” (NSRF-EPAnEK), Duration: February 2020 – July 2023

Spanish project “Análisis de pinturas prehistóricas al aire libre. 4D Arte Rupestre” financed by the Secretary of the State of Culture of the Ministry of Education, Culture and Sports of the Spanish Government 26/11/2013 – 15/03/2014, Total cost: 3200 €

DEMBUMIES, Deterioration of Stone Construction Materials induced by Urban Ambient Contaminants (DEMBUMIES) Financing institution: Spanish Ministry of Economy and Competitiveness (MINECO), Construction Program, (ref. BIA2011-28148) Duration: January 2012 – December 2014, Total cost: 191.180 €

Grupo consolidado of the University of the Basque Country

Spanish project US12/16 with collaboration with the Museum of Fine Arts of Bilbao for the “Transference and implantation of a non-destructive analysis methodology for the evaluation of the conservation state of pieces of Japanese art with high content of metallic alloys-TIMEJAM”

Spanish national project FIS2010-14926 “Photonic technologies for the study of the eye and vision” of the Department of Physics of the University of Murcia, Spain

International project PROMET (PROtection of METals), Innovative conservation approaches for monitoring and protecting ancient and historic metals collections from the Mediterranean basin, 6th Framework funded project under the contract number: FP6-2002-INCO-MPC-1

Greek national project LASTOR (LAsers for STOnework Restoration), Framework III. Operational program “Competitiveness”, GSRT / 2003 – 2006 Contract number: EIIAN 4.5.1_III4

Special actions: Analytica Pompeiana Universitatis Vasconicae, APUV2011, Reference: AE11/27, Duration: 1 – 30 of September 2011

Special action: Campaign for the analysis of rock paintings on abrigos of the Iberian Peninsula. Duration: 9 – 11 of May 2012

REFERENCES

Prof. Demetrios Anglos, Institute of Electronic Structure and Laser, Foundation for Research and Technology – Hellas, 70013 Heraklion, Greece, +30 2810391154, anglos@iesl.forth.gr

Prof. Pablo Artal, Director of Laboratorio de Optica (Departamento de Física), Universidad de Murcia, Campus de Espinardo (Edificio CiOyN), 30071 Murcia, Spain, +34 868 887224 pablo@um.es

Prof. Juan Manuel Madariaga, Department of Analytical Chemistry, The University of The Basque Country (UPV/EHU), Barrio Sarriena s/n 48940 Leioa, Spain, +34 946012707, juanmanuel.madariaga@ehu.eus

Dr. Andy Whitehouse, Applied Photonics Ltd, Unit 8 Carleton Business Park, Carleton New Road BD23 2DE Skipton, UK, +44 1756708900, andy.whitehouse@appliedphotonics.co.uk

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