

# ANTONIA MOROPOULOU

**PROFESSOR EMERITUS AT THE NATIONAL TECHNICAL UNIVERSITY OF ATHENS**

**CHIEF SCIENTIFIC SUPERVISOR OF THE REHABILITATION OF THE HOLY AEDICULE  
OF THE HOLY SEPULCHER**

**MEMBER OF THE EXECUTIVE COMMITTEE OF THE TECHNICAL CHAMBER OF GREECE**

**MEMBER OF THE GOVERNING COUNCIL OF THE UNIVERSITY OF IOANNINA**



*National Technical University of Athens, 9 Iroon Polytechniou Street, Zografou Campus, 15780, Athens, Greece*

*Tel: +30 210 772 3276, Fax: +30 210 772 3215, e-mail: [amoropul@central.ntua.gr](mailto:amoropul@central.ntua.gr)*

*Mobile: +30 693 230 3337, <http://users.ntua.gr/amoropul/>*

She was born in Rhodes and presents 47 years of academic and professional experience and activities at national and international level.

She is a Chemical Engineer (NTUA, 1975), PhD in Chemical Engineering (NTUA, 1983). She has served as a member of the academic staff of NTUA since 1976. Full Professor at the NTUA School of Chemical Engineering, Section of Materials Science and Engineering since 2003.

She was the Founder and Director up to August 2020 of the NTUA Laboratory of Materials Science and Engineering at the NTUA School of Chemical Engineering, since its establishment in 2003. Under her leadership and direction, the Laboratory has become a key global player in science & technology development for the protection of Cultural Heritage.

She has been pivotal in setting up (1998) and offering to the students the NTUA Inter-Departmental and interdisciplinary MSc Master Program for the "Protection of Monuments" with the participation of the Schools of Architecture, Chemical Engineering, Civil Engineering, Rural and Surveying Engineering, addressed to Engineers, Physical Scientists, Restorers, Conservators and Archaeologists. From the beginning of the Program up to August 2020, she has been the Studies Director of Direction "Materials and Conservation Interventions".

In 2010 she was elected Vice Rector of Academic Affairs of the National Technical University of Athens (2010-2014) and was appointed as NTUA Rector's Deputy (2013-2014).

She is currently a member of the Executive Committee of the Technical Chamber of Greece (2019-today) and a member of the Governing Council of the University of Ioannina.

In 2012 she was elected as member of the 'Administrative Council of the European Society for Engineering Education' (SEFI). In 2013 she was elected as the Vice-President of the Administrative Council of SEFI (2013-2016).

She has been elected as Contracted Professor (Professoressa a' Contratto) in the University IUAV of Venice (School of Architecture, 1993) and Visiting Professor at Princeton University (School of Civil Engineering and Operations Research, 1995-1996). She has also been invited to teach in courses of undergraduate and postgraduate level at the University of Antwerp, University La Sapienza, University Ca Foscari of Venice, Princeton University, the Aristotle University of Thessaloniki, and the University of Peloponnese and as an Honorary Doctor at the University of Ioannina.

She has received honorary international Association Memberships: New York Academy of Sciences, American Association for the Advancement of Science, International Who's Who of Professionals, Academia NDT International, American Ceramic Society, et als. She is a member of numerous Hellenic Academic Associations in her scientific field.

In 2004 her scientific work "Drying kinetics of some building materials" was awarded the 1<sup>st</sup> price in the 14<sup>th</sup> International Drying Symposium. In 2008 she participated by invitation in the 'Professional Women's Advisory Board of New York'. In 2011 she was acknowledged by the Council of Canadian Academy as an author of the top 5% most highly cited papers worldwide in the field of Cultural

Heritage Protection. In 2012 she was awarded the 'YPATIA' Award by the 'Association of Hellenic Women Scientists'. In 2015 she was conferred by His Beatitude, Patriarch of Jerusalem and All Palestine, Theophilos III, of the honorary title of the Supreme Taxiarch of the Equestrian Order of the Holy Sepulcher. In 2017 she was honoured by the European Society for Engineering Education - SEFI Fellowship Award. In 2019 she was awarded by HE the President of the State of Palestine, Mr. Mahmoud Abbas, the Medal of Honor and Distinction "Golden Grace", in recognition and appreciation for the preservation of the World Human and Cultural Heritage. In 2019 she was awarded in Vatican city the "Giuseppe Sciacca" International Award, for the prize in Science.

She is a world class expert in building materials and the preservation of monuments that comprise the World's Cultural Heritage. She has worked on restoration projects in Hagia Sophia in Istanbul, the Holy Sepulchre and the Church of Resurrection in Jerusalem, the Venetian Fortresses and Historic Cities of Rhodes, Rethymnon, Herakleion and Corfu, the Demeter Temple of Eleusis, Fortresses, architectural monuments of Venice and Magna Grecia, the Temple of Luxor in Egypt, Byzantine and Post-Byzantine Monasteries in Mount Athos and Crete, Byzantine Monasteries in Serbia and Kosovo, Temples and Monuments in the Mediterranean (France, Italy, Spain, Portugal, Malta, Turkey, Israel, Lebanon, Syria, Palestine, Tynisia, Egypt).

Since 1994, under her initiative, she developed a joint research initiative through a Memorandum of Understanding for the Earthquake Protection of Historical Monuments in Istanbul between Princeton University (Structural Analysis), Bogazici University (Geophysical Studies, Earthquake Engineering) and the National Technical University of Athens (Construction Materials). This initiative is still active today through co-operation projects, and within its framework the Greek contribution to the conservation of Hagia Sophia has been implemented.

She has contributed substantially to the greek-Turkish Educational and Cultural Cooperation Memorandum Agreement, validated by the Parliaments of Greece and Turkey (2000).

She was the Chief Scientific Supervisor of the project for the "Conservation, reinforcement and repair interventions for the rehabilitation of the Holy Aedicule of the Holy Sepulchre in the All-Holy Church of Resurrection in Jerusalem", which was recently implemented in the framework of the common agreement of the Status Quo Christian Communities, following invitation by the Greek-Orthodox Patriarch of Jerusalem.

She is the Scientific Responsible for the interdisciplinary studies for the Varnakova Catholikon and Monastery Cells Rehabilitation in Central Greece as well as the Chief Scientific Supervisor of the works.

She has been Scientific Responsible in numerous projects for the protection of the Medieval City of Rhodes and has consistently promoted and supported the role of the local authorities in the protection and regeneration of Historic Cities. With her support a "Program Agreement" between the Municipality of Rhodes and the Ministry of Culture was signed in 1984 and has now been renewed.

Following her initiatives in the active participation of Municipalities in the Cultural Heritage management, the Organization of World Heritage Cities (OWHC) has strengthened and extended its composition up to 280 cities, promoting and supporting the maintenance, recognition and development of historic cities world heritage.

She is the author of 5 books, 2 monographies, and 20 chapters in books. She has been editor of 19 books - special editions.

She is the author of more than 635 scientific publications, i.e.: 151 original papers published in International Scientific Journals, 6 in Greek Scientific Journals, 148 papers in periodical editions, 201 papers in peer-reviewed Proceedings of International, and 110 papers in Proceedings of National Conferences (in full length).

According to Scopus, she has an h-index of 38, with more than 92.586 readings and three billion views of her work.

She has been at the forefront of many initiatives and programs concerning the introduction, planning and implementation of the concept of Sustainable Development, based on the needs and cohesion of local societies, emphasizing on Environmental and Cultural Heritage Protection, on Youth Employment and Entrepreneurship, by applying scientific support to policies: as founding member of the

'Conférence des Régions Périphériques Maritimes' (CRPM) (1981-1983), as elected President of the 'Local Economic and Employment Development' (LEED) Program in the 'Organization for Economic Co-operation and Development' (OECD) (1982-1987), as Scientific Advisor and Expert in Committees of International Organizations (OECD, UNESCO, INSULA, EU, ICOMOS, EIT, CE-PACT, UN, EPA, TMS, et al.) (1982-today), as Greek Prime Minister's advisor, attached to the Vice Minister of Education, Culture and Youth (1981-1985), as well as to the Minister of Foreign Affairs (1985-1986), as elected in the Municipal Council of the City of Athens (1986-1990), as Chair of the Scientific Committee of the 'Organization of World Heritage Cities' (OWHC) (2003) and as member of the Board of Athens Development and Destination Management Agency of the Municipality of Athens (2011-2014).

She has contributed to the formation of European research strategies: as expert of the External Advisory Group on "City of Tomorrow and Cultural Heritage" of the European Commission at the DG XII. (2000-2003), National Representative in the Horizontal Configuration of the Program Committee of the FP6 Specific Program "Integrating and Strengthening the European Research Area" (2003-2004), Stakeholders' Representative at the Strategic Research Area of Earthquake Engineering (2007) and has served as member of the EUREKA thematic network (2003-2005) and the CHRAF and EACH initiatives (2005-2008), as well as in the mainstreaming for the European Petition to include Cultural Heritage Research, Innovation, Science and Education in the 8<sup>th</sup> EU Common Strategic Framework Program (HORIZON 2020).

She has contributed in the development of knowledge alliances and synergies of the Universities with 'Industry' within the triangle Education – Research – Innovation. She has initiated the establishment (2005) and is until today the President of the "Hellenic Construction Technology Platform", in order to set research and technology priorities for the Greek Construction Industry, for the Sustainable Construction and the Protection of Cultural Heritage. She has exerted leadership for the design in the construction industry related to the advanced of the materials decay and repair with compatible and performing materials (historic and modern buildings of the Bank of Greece in Athens, the National Bank all over Greece, churches, hospitals, etc. towards sustainable reservation. In a European Coordinative Action leaded by Vinci and with the participation of construction companies she decisively inferted innovative solutions for sustainable materials, construction and life-time engineering. She was founding member of the 'European Construction Technology Platform' (ECTP) (2004), and has participated in the 'Energy Efficient Buildings Association' (E2BA) (2008), and the 'European Council of Academies of Applied Sciences, Technologies and Engineering' Euro-Case Innovation Platform (2012-today).

She has been the First Scientific Responsible for the 'Employment and Career Structure' of NTUA, enhancing and promoting the cooperation and coordination of the following relevant NTUA units: the 'Career Office Liaison Services for student and recent alumni', the 'Internship Program' and the 'Innovation and Entrepreneurship Center'. In particular, through this structure, she has promoted the planning and implementation of innovative actions aiming at strengthening and fostering NTUA's connection with the global labor market and the knowledge alliance with industry. She promotes and supports engineering employment in key technocratic positions and implemented the 1<sup>st</sup> NTUA entrepreneurial Competition along with OECD, SEFI and the association of Greek Industries, "From innovative ideas towards entrepreneurial plans" (2013) to promote entrepreneurial implementation of innovative ideas concerning the sustainable development of the City of Athens, aiming at knowledge transfer and the encouragement of young researchers to undertake business ventures.

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She has contributed in amendments of the Bologna Declaration at the Fourth Bologna Policy Forum in Yerevan in May 2015, on her own initiative and accepted unanimously, ensuring Higher Engineering Education quality and the skills for appropriate profession exercise, representing SEFI.

She has recently succeeded in the recognition of integrated and uninterrupted 5 years Studies Program leading to Diplomas in Greece as equivalent to Master degree. In addition, she has recently contributed and succeeded in the publication of a new Presidential Decree recognizing the general and specialized professional rights of Engineers in Greece, thus achieving an integrated framework concluding efforts of the Technical Chamber of Greece of more than five decades.

She has contributed towards interdisciplinary innovative educational linkage approach and has prepared draft ministerial decisions for the operation and Programmatic Agreements with strategic partners of the interdisciplinary NTUA postgraduate programs, to fuse Education, Research and Innovation at a multidisciplinary level. In 2009 she initiated the successful EuroMed strategic alliance with Technion Israel Institute of Technology, ELAICH project – Educational Linkage Approach in Cultural Heritage, an awarded educational initiative, pilot case for Protection of Monuments knowledge transfer to secondary education. She has been the Scientific Coordinator of the Educational Digital Innovative Cultural Heritage related Learning Alliance (EDICULA) Project (2020-2023) a Strategic Partnership for Higher Education in Erasmus+.

She has developed innovative toolkits and protocols that enable users to utilize historic cities, monuments, cultural heritage assets, “industry” and construction workshops as “open labs” to experiment principles, methods and techniques of innovative technologies, materials, design and planning for the risk assessment and preservation of Cultural Heritage. She recently participated in the European project “INCEPTION-Inclusive Cultural Heritage in Europe through 3D semantic modeling”.

She has been member of the Steering / Scientific Committees of numerous and responsible for the organization of more than 50 successful International Conferences and Workshops among them a reference can be made to characteristic ones: [4th International Symposium on the Conservation of Monuments in the Mediterranean (1997), Compatible materials for the protection of European Cultural Heritage (1998), Compatible materials recommendations for the preservation of European Cultural Heritage (2000), 7th International Symposium of the Organization of World Heritage Cities: Keeping heritage alive (2003), European Symposium on innovation in research and technology (2007), Building materials and elements (2008), 6th International Conference Euromed (2016), SEFI Debate “Labour Market Needs and Engineering Skills” (2016), International Conference on Transdisciplinary multispectral modeling and cooperation for the preservation of Cultural Heritage (2018) with NG, WMF, ICOMOS, 1st International Conference TMM\_CH (2018), 2nd International Conference TMM\_CH (2021), 3rd International Conference TMM\_CH (2023), et al.]

She is scientific responsible for Researchers’ Night in NTUA, a successful annual event for ten years continuously since 2014. National Technical University of Athens opens its gates on the last Friday of each September in the afternoon until midnight with aim to re-invent the connection between Academia and Society by successfully hosting thousands of citizens at the emblematic Averof building at the Patisson historic complex, where the public of Athens meets hundreds of researchers. Dozens of cutting edge technologies are presented through interactive experiments and games, introducing the young audience to the research world and entertaining activities.

Her commitment into the Education and the profession of Engineers underlines her stable belief for the role and contribution of Engineers in the development processes. She has been an elected member of the General Assembly of the Technical Chamber of Greece (TCG) since 1981-1984, 1997-today, an elected member of TCG’s Administrative Committee (2001-2007 and 2014-2017), while she was elected and served as the General Secretary of TCG (2004-2007), the Vice-President of TCG (2014-2017) and the President of the General Assembly of the TCG (2017-2019).

Her multivariate activities connect Education to social and political activities. Her participation in the students’ movement and the democratic uprising in November ’73, as member of the Coordinating Secretariat and the first broadcaster of the historic radio, has triggered her motivation and is acting as a value’s reference.

She has participated in numerous Euro-Mediterranean and European research projects, owning invaluable experience in the field. Indicatively, she coordinated, participated or currently participates in:

- COMETT II - ITECOM "Technological innovations in the preservation of structural materials in monuments" [1991 - 1993], funded by European Economic Community under Environment Program
- Marine spray and polluted atmosphere as factor of damage to monuments in the Mediterranean coastal environment [1992 - 1996], coordinated by Prof. F. Zezza, CUM - Community of Mediterranean Universities, funded by European Economic Community under ENVIRONMENT Program
- Development of evaluation criteria, prediction and control methods concerning sea-salt effects on monument stones [1996 - 1999], coordinated by Prof. F. Zezza, CUM - Community of Mediterranean Universities, funded by European Economic Community under ENVIRONMENT Program
- INCOMARECH "Initiative for promoting the use of compatible materials in the protection of European Cultural Heritage from environmental risks" [1998 - 1999], funded by European Commission, DC X under RAPHAEL Program
- COMARECH "Initiative for compatible materials recommendations for the preservation of European Cultural Heritage" [1999 - 2000], funded by European Commission, DC X under RAPHAEL Program
- ITECOM Advance Study Course "Innovative Technologies and Materials for the Conservation of Monuments" [2003 - 2004], funded by European Commission, DG Research under Energy, Environment and Sustainable Development Program
- ELAICH "Educational linkage approach in cultural heritage" [2009 - 2012], coordinated by Dr. A. Lobovikov - Katz - Technion Israel Institute of Technology, funded by European Commission under EUROMED Heritage IV Program
- EU-CHIC "European Cultural Heritage Identity Card" [2009 - 2012], coordinated by Prof. R. Zarnic - University of Ljubljana, funded by European Commission, DG Research under FP7 Environment Program
- MEDNETA "Mediterranean cultural network to promote creativity in the arts, crafts and design for communities' regeneration in historical cities" [2013 - 2015], coordinated by Prof. S. Avgerinou - NTUA, funded by ENPI CBC Mediterranean Sea Basin Programme
- INCEPTION "Inclusive Cultural Heritage in Europe through 3D semantic modeling" [2015 - 2019], coordinated by Prof. R. Di Giulio, University of Ferrara, funded by European Commission under the Horizon 2020 Reflective Programme
- ViMM "Virtual Multimodal Museum", coordinated by Prof. M. Ioannides - Technological University of Cyprus, funded by European Commission under Horizon 2020 CULT Program.
- EDICULA "Educational Digital Innovative Cultural Heritage related Learning Alliance" [2020-2023], coordinated by Prof. Emeritus A. Moropoulou, National Technical University of Athens, co-founded by the European Union's Erasmus+ and the State Scholarships Foundation - IKY.
- AEI "Sustainable Development of Less Developed Regions and Isolated Areas by Creating New Touristic Resources and Products through Analysis, Documentation and Modelling of Cultural Assets using Innovative ICT Applications" [2020-2023], Scientific Responsible and coordinated by Prof. Emeritus A. Moropoulou, National Technical University of Athens, Co-financed by the European Regional Development Fund of the European Union and Greek national funds through the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH - CREATE - INNOVATE .
- RESPECT "An Exemplary Information System and Methodology for the Integrated Management, Analysis and Dissemination of Digital Cultural Heritage Data coming from the rehabilitation of the

Holy Aedicule of the Holy Sepulchre Project” [2020-2023], coordinated by Prof. Emeritus A. Moropoulou, National Technical University of Athens, Co-financed by the European Regional Development Fund of the European Union and Greek national funds through the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH – CREATE – INNOVATE .

· BIOFOS “Metagenomic analysis of the bacterial population of stone surfaces of monuments and development of nano-biomaterials for the sustainable protection of cultural heritage” [2020-2023], Scientific Responsible Prof. Emeritus A. Moropoulou, National Technical University of Athens, Co-financed by the European Regional Development Fund of the European Union and Greek national funds through the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH – CREATE – INNOVATE .

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