CURRICULUM VITAE

1. **Surname:** STAVRAKAKIS
2. **Name:** GEORGE
3. **Date of birth:** 4th March 1980
4. **Nationality:** Greek
5. **Civil status:** Married, 1 child
6. **Military services:** Completed
7. **Email:** gmstavr@hmu.gr
8. **Education:**

Εκπαιδευτικό Ίδρυμα [Από – Έως]	**Διπλώματα:**
School of Chemical Engineering, National Technical University of Athens (NTUA) (2006-2010)	**PhD**. Thesis title: Mathematical modelling of thermal comfort and indoor air quality and advanced techniques for optimizing building design-Applications in naturally ventilated buildings. DOI: 10.12681/eadd/25592, url: http://thesis.ekt.gr/thesisBookReader/id/25592#page/1/mode/2up
School of Chemical Engineering NTUA (2003-2005)	**M.Sc. in Computational Mechanics** (Grade: 8.64/10, Discipline: Fluid Flow)
School of Chemical Engineering NTUA (1998-2003)	**Diploma in Chemical Engineering** (Grade: 7.50/10, Discipline: Process Analysis and Plant Design)

9. **Languages:** (a) Greek: Mother tongue, (b) First Certificate in English of Cambridge University, (c) Professional and scientific experience in English. Skill indication in scale 1 to 5 (1 - Excellent; 5 - Basic)

Language	**Reading**	**Speaking**	**Writing**
English	1	1	1
Greek	Mother tongue		

10. **Skills: (e.g. Computer literacy, etc.)**
    - Experienced user of dynamic and simplified building energy simulation packages (DesignBuilder, quasi-steady simulation in the Greek-EPBD software).
    - Experienced user of computational fluid dynamics (CFD) packages, e.g. FLUENT, PHOENICS, EnviMET, in energy and environmental applications.
    - Programming environments: FORTRAN and C++.
    - Linear and non-linear programming in Matlab.
    - Multicriteria decision aid analysis (MCDA) in urban energy planning.
    - User of Renewable Energy production softwares, such as the RETSCREEN and HOMMER.
    - Excellent computer skills (e.g. word, excel, powerpoint, internet, etc.).
    - Excellent skills in coordination, communication, knowledge exploitation and transferring.

11. **Current positions:**
    - Assistant Professor in the Department of Mechanical Engineering – Power plant synthesis laboratory, School of Engineering, Hellenic Mediterranean University (HMU)

12. **Professional experience in:**

Country	**From – to**
Greece	2003 – to date
EU Countries & North Africa (Algeria)	2012 – to date

13. **Professional and Research Experience:**

From – To	Location	Oranisation	Position	Description
November 2019 – September 2024	Heraklion & Athens, Greece	MES Energy SA Aiolou 67, GR-10559, Athens MES Energy SA Branch Office 1821 Str. No.76, GR-71201, Heraklion http://www.mese.gr/	Energy projects research and development consultant	As Senior expert, Dr. Stavrakakis is involved in the development, management and implementation of numerous projects in the field of in Energy Efficiency, Renewable Energy and Rational Use of Energy (EE/RES/RUE).

Indicative projects and activities in MES Energy SA				
Project	**Funding body – Client**	**Duration**	**Organisation role / Consultant role**	**Description**
Thermal Energy Storage for On-demand Solar Trigeneration με ακρωνύμιο TES4Trig (ref. T12EPA5-00059) in the framework of ERANET CSP Cofund Programme	General Secretariat for Research and Innovation – Ministry of Development (GSRI))	4/4/2022-3/11/2023 (19 months)	Partner – Leader of WP1: Identification of design parameters / Scientific Responsible	Development of an innovative tri-generation system powered by solar trough collectors, based on Organic Rankine Cycle and Ejector Cooling Cycle (ORC-ECC) combination with a heat storage system. Pilot installation and application in the Administration Building of NTUA Technology and Cultural Park in Lavrio, Greece.
Project “Operational plans for RES/EE innovation development for application in nearly zero energy-consumption infrastructures (ref. no. GG2CL-0365783)” in the framework of the Programme “Competitiveness, Entrepreneurship and Innovation 2014–2020”	General Secretariat for Research and Innovation – Ministry of Development (GSRI))	14/7/2022-31/12/2023 (18 months)	Partner – Leader of WP3: Energy management / Scientific consultant	Techno-Economic Analysis of a Hydrogen-Based Power Supply Backup System for Tertiary Sector Buildings: A Case Study in Greece. Development and implementation of experimental assembly for the investigation of system response and coverage of electrical loads. Conduction of a plan for increasing the penetration of hydrogen technology in the energy market.
Provision of technical support in the framework of the project «Med SEACAP integration through uniform adapted assessment and financing, targeting buildings in education and health sectors, for sustainable development goals in a smart society- SEACAP 4 SDG» (C_B.4.3_0058)	University of Patras Special Account for Research Funding	5/10/2022-4/2/2023 (4 months)	Subcontractor / Scientific collaborator	Provision of technical support to Greek Municipalities in evaluating and planning energy management measures. Technical support to one Municipality (Egialeia) in exploiting specialized tools of the SEACAP4SDG project’s portfolio for conducting and/or revising local energy-upgrading plans and strategies in line with the regulatory framework and the national and EU goals of energy transition.
Technical support in monitoring and updating the municipal-building stock energy upgrading plan (ref: 22SYMV011476751)	Municipality of Heraklion	24/10/2022-31/12/2022 (2 months)	Subcontractor / Scientific Responsible	Conduction of the energy renovation plan (ERB plan) for the public building stock (Greek abbreviation for ERB in Latin characters: SEAK) in the framework of Art.6 L.4843/2021.

Indicative projects and activities in MES Energy SA				
Project	**Funding body – Client**	**Duration**	**Organisation role / Consultant role**	**Description**
Technical support in implementing and evaluating the energy retrofit and electric vehicle integration in the high school building at Agios Mironas Village in the framework of the project «C-IZEBs» MIS 5050682 of the Programme Interreg Greece-Cyprus 2014-2020 (ref. 22SYMV011475505)	Municipality of Heraklion	21/10/2022 – 20/9/2023 (11 months)	Subcontractor / Coordinator of local technical activities	- Review of building energy retrofit technical studies. - Pilot building energy simulation using the quasi-steady zonal modelling tool for the Greek EPBD (TEE KENAK) - Coordination of technical activities regarding route optimization of the suggested electric mini-bus serving students and citizens of the near-by villages, using GIS. - Determination of technical specifications of the electric mini-bus and the accompanied charging station.
Technical support for the implementation of the deliverables 3.3.1, 5.3.2, 5.3.3, 5.3.4, 5.3.5, 6.3.2, in the framework of the project C-IZEBs of the Programme Interreg Greece-Cyprus (ref. 22SYMV010174451)	Regional Development Fund of Crete	3/3/2022 – 30/6/2023 (16 months)	Subcontractor / Coordination of local technical activities	- Development of technical specifications of the KNX-based measurement system for monitoring energy consumption, indoor CO_2 concentration, indoor air temperature and relative humidity, in near-real time. - Supervision of the installation of the measurement system. - Processing of measured database towards energy performance, thermal comfort and indoor air quality indicators.
Provision of technical support in the framework of the «IMPULSE PLUS» Interreg-MED project 9MED20_2.1_M3_006 (ref. 22SYMV010718944)	Region of Western Greece	9/6/2022-30/6/2022 (1 month)	Subcontractor / Scientific consultant	- Energy assessment of 11 public buildings. - Techno-economic analysis of buildings energy upgrading scenarios using advanced indicators of energy, environmental and financial performance. - Application of IMPULSE project (Interreg MED 2014-2020) tools and conduction of a gradual energy renovation plan for the studied building stock.
Consulting services for the implementation of an Energy Community (ref. 21SYMV009792067)	Municipality of Hersonissos	20/12/2021-20/4/2022 (6 months)	Subcontractor / Scientific consultant	Provision of technical support for the development of Municipality's Energy Community in the framework of L. 4513/2018.
Development of the electric vehicles charging plan (ref. 20SYMV007758346)	Municipality of Heraklion	2/12/2020-2/6/2021 (6 months)	Subcontractor / Scientific consultant	Development of the electric vehicles charging plan according to L. 4710/2020 and the technical specifications of the Joint Ministerial Decision ΥΠΕΝ/ΔΜΕΑΑΠ/93764/396/2020 (4380/Β/5-10-2020).
Development of the electric vehicles charging plan (ref. 22SYMV010017677)	Municipality of Chania	7/2/2022-7/10/2022 (8 months)	Subcontractor / Project Vice-Coordinator, Consultation Coordinator, Coordinator of sight inspections	Development of the electric vehicles charging plan according to L. 4710/2020 and the technical specifications of the Joint Ministerial Decision ΥΠΕΝ/ΔΜΕΑΑΠ/93764/396/2020 (4380/Β/5-10-2020).
Implementation of the initiative "Transition towards low-carbon economy through citizens' participation processes (ref. 21SYMV008570690)	Municipality of Heraklion	7/5/2021-6/5/2022 (12 months)	Subcontractor / Responsible for households' clustering, data collection and statistical processing of energy-performance indices	- Planning and coordination of energy inspections in 121 households. - Planning and coordination of measurements campaigns in 12 households selected as living labs (energy consumption, indoor air temperature and relative humidity). - Development of excel-based model for the compilation of hourly measurements to the thermal comfort index PMV. - Development and monitoring of behavioural-shift programs for the 12 living-lab households.

Indicative projects and activities in MES Energy SA				
Project	**Funding body – Client**	**Duration**	**Organisation role / Consultant role**	**Description**
Management and implementation of transferring and capitalization activities of the horizontal project EFFICIENT BUILDINGS of the Programme Interreg MED 2014-2020 (ref. 22SYMV010015445)	Centre for Renewable Energy Sources and Saving (CRES)	17/1/2022-16/7/2022 (6 months)	Subcontractor / Scientific consultant	Management and implementation of transferring and capitalization activities of Mediterranean Cooperation projects regarding public-buildings energy efficiency in the framework of the Programme Interreg MED 2014-2020.

From – To	Location	Organisation	Position	Description
February 2012 – October 2019	Pikermi, Attica, Greece	Centre for Renewable Energy Sources and Saving (CRES) 19th km Marathonos Ave., GR-19009, Pikermi, Attica http://www.cres.gr	Research associate at the devision of Development Programmes	Development, management and implementation of numerous research projects in the field of Energy Efficiency, Renewable Energy and Rational Use of Energy (EE/RES/RUE), in the framework of EU and national Programmes.

Indicative projects and activities as research associate in CRES				
Project	**Funding body - Client**	**Duration**	**Organisation role / Researcher role**	**Description**
"Building ENergy EFficiency ImprovemenT: Demonstration for public buildings (BENEFIT)"	Interreg GREECE -THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA 2014-2020	10/2018-10/2020 (24 months)	Partner / Scientific associate	Development of a methodology for building-stock clustering into representative typologies based on energy-related indicators. General methodology for conducting building-stock renovation plans using special tools and indices of energy, environmental and economic performance of energy-upgrading scenarios, applicable to the partner Countries.
Mitigation Enabling Energy Transition in the Mediterranean Region	DG NEAR EU	1/5/2018-30/4/2020 (24 months)	Partner / Scientific associate	Enforcing the regional collaboration for promoting energy transition in Algeria, Egypt, Jordan, Lebanon, Morocco, Palestine and Tunisia. (a) Technical support for the implementation of energy policies and regulations in Mediterranean Basin Countries regarding energy efficiency and renewable energy, (b) energy policy and regulatory framework analysis, (c) Capacity building of local authorities, (δ) Development of the training course "Energy Intensive Areas in Municipalities / Gradual energy renovation plans for public buildings" in the framework of the training activity "Sustainable Energy Policy Design" held in Algeria and in Tunisia.
"IMPULSE-Integrated Management Support for Energy efficiency in Mediterranean Public buiLdings" (1MED15_2.1_M2_178)	Programme Interreg MED 2014-2020	1/11/2016-31/7/2019 (33 months)	Lead Partner / Overall project coordinator	Development of a transnational GIS-based tool for mapping the energy performance of public-building stocks as well as of alternative energy-upgrading scenarios aiming at facilitating energy management and the conduction of reliable and affordable energy renovation plans in compliance with the EU energy efficiency directive 2012/27/EU.

Indicative projects and activities as research associate in CRES				
Project	**Funding body - Client**	**Duration**	**Organisation role / Researcher role**	**Description**
"SHared knowledge for Energy renovation in buildings by Public Administrations (SHERPA)" (1MED15_2.1_M23_181)	Programme Interreg MED 2014-2020	1/11/2016-31/1/2020 (39 months)	Partner / Scientific associate	Enhancing the capacity of public administrations at regional and local level, to improve the energy efficiency of the public building stock accompanied with the reduction of carbon emissions.
"Promoting innovative nEtworks and cLusters for mArine renewable energy synerGies in mediterranean cOasts and iSlands - PELAGOS" (1MED15-1.1-M2-147)	Programme Interreg MED 2014-2020	1/11/2016-31/7/2019 (33 months)	Lead Partner / Scientific associate	Development of services for enhancing innovation capacity and the collaboration of Mediterranean authorities involved in Blue-energy exploitation (e.g. wave electricity production, offshore RES installations) through the operation of a transnational cluster for the establishment of common perception of the opportunities and challenges and the joint processing of smart technologies for exploiting blue energy.
"Integrative Smart City Planning (InSMART)" (ENER/FP7/314164)	EC FP7-ENERGY-SMARTICITIES-2012	1/12/2013-31/3/2017 (40 months)	Lead Partner / Scientific associate	Development and testing of an innovative methodology planning sustainable smart cities and communities based on an interdisciplinary approach for participative multicriteria decision making involving stakeholders in the formulation of the decision-making scheme.
"Energy Performance Contracting Plus (EPC+)" (Grant agreement ID: 649666)	EC HORIZON2020 SOCIETAL CHALLENGES - Secure, clean and efficient energy	1/3/2015-31/3/2018 (37 months)	Lead Partner / Scientific associate	Establishment of SPINS (SME Partnerships for Innovative eNergy Services) in each partner Country; Capacity-building of the pilot SPINs on administrative, technical, legal and financial matters pertaining to the SPIN's operational practices; Development of highly standardized energy service packages which can be easily implemented by the SPINs; Pilot actions of SPINs operation in real-life small scale energy upgrading projects.
DOW-Europe private contract (Jul-Sep 2015): Project "Cool Roof Impacts on Building's Thermal Performance (CRIBUTE)"	DOW Europe	22/6/2015-15/9/2015 (3 months)	Subcontractor / Scientific associate	Measurement of thermal parameters of a School building (7th Elementary School of Egaleo, Greece) before and after a cool roof application, and dynamic simulations to assess its impacts on building energy performance. Conducted extensive building energy inspections (with interviews to end-users) and exhaustive building thermal and energy dynamic simulations using the DesignBuilder v.4 software (validation/calibration in relation to monitored thermal performance indices and further use of the model to assess the impact of the cool roof on building energy performance and on indoor thermal comfort).
"Retrofitting PUBLic spaces in Intelligent MEDiterranean Cities (REPUBLIC-MED" (1C-MED12-73)	Programme MED 2007-2013	1/3/2013-30/6/2015 (28 months)	Lead Partner / Overall project coordinator	The project introduced practical and innovative methods to conduct complete techno-economical studies for the energy upgrading of public buildings and for Urban-Heat-Island (UHI) mitigation in Mediterranean city-scapes based on micro-scale modelling. As a technical coordinator, he supervised the development of a novel methodology to conduct feasibility studies for energy and microclimate valuation as well as optimization schemes for the improvement of building energy performance and for the mitigation of the UHI effect. He also coordinated dissemination and capitalization activities in the partner Countries. Part of his activities included the analysis of policy context regarding the existing building energy directives in Greece and in other participating Countries, with a special focus on the assumptions and calculation methodologies followed, also in relation with the recast EPBD 2010/31/EU and with the regulation 244/2012/EU.
"Energy Efficiency in Low-Income Housing in the Mediterrenean (ELIH-MED" (1S-MED10-029)	Programme MED 2007-2013	1/4/2011-31/3/2014 (36 months)	Partner / Scientific associate	Identify and conduct large scale experimentation of cost effective building energy-efficiency solutions and innovative public and private financing mechanisms to foster energy efficiency investment in low income housing towards the mitigation of energy poverty. Conducted techno-economic feasibility studies for assessing energy upgrading potential of several design (retrofitting) scenarios, and for identifying the optimum retrofitting measures in student dormitory buildings. As part of the project an operational plan of coordination of European financial instruments was developed, in the context of a Mediterranean macro-regional strategy 2014-2020.

Indicative projects and activities as research associate in CRES				
Project	**Funding body - Client**	**Duration**	**Organisation role / Researcher role**	**Description**
Energy Sustainability for Adriatic Small Communities (ALTERENERGY)	Cross-border Cooperation Programme IPA Adriatic	9/2011-12/2014 (48 months)	Partner / Scientific associate	Conducted the techno-economic feasibility studies for assessing energy upgrading potential of several design (retrofitting) scenarios in a public office building (using the Greek EPBD software) and for identifying the optimum retrofitting measures, as well as the development of the energy balance of the Igoumenitsa Community of Region of Thesprotia (as per the Covenant of Mayors specifications).
"Integrated Strategy for Sustainable Development of Mediterranean Rural Areas (MedStrategy)" (2G-MED09-282)	Programme MED 2007-2013	1/4/2011-31/3/2014 (36 months)	Partner / Scientific associate	Improving territorial governance of Med rural areas towards sustainability through an innovative planning model comprising integrated social, economic, and environmental analysis. Conducted assessment of the institutional framework and review of successful governance models. Definition of strategic pilot plan patterns involving transnational synergies in the planning model's execution.
European Economic Area Financial Mechanism (EEA FM) 2009-2014 Co-funded Area: Renewable Energy	EEA FM 2009-2014 Programme Renewable Energy - GR03	2012-2017 (5 yrs)	Programme Promoter / Scientific associate	Contributed in the preparatory stage (proposal drafting) and during implementation in the development of the technical submission template, according to which the beneficiaries submitted their technical proposals and energy indicators. In this framework, he estimated the energy indicators that will be most-likely achieved from the projects of beneficiaries for various RES installations, i.e. Photovoltaics, wind turbines, geothermal heat pumps, biomass units, etc., in representative typologies existing in Greek Communities, using HOMER and RETSCREEN computational tools mainly.
"Greece / Albania Energy Tourism G.A.L.E.T"	Interreg Greece-Albania 2007-2013	2013-2016	Partner / Scientific associate	Technical study for the investigation of alternative solutions for urban renovation of a public square in the urban context of Ioannina; Building energy analysis and eventual estimation of cooling and thermal loads (in the ex-ante and ex-post situation) of the administrative office building of Ioannina Perfecture, Greece, using 4M energy analysis software.

Indicative projects and activities as Engineering Consultant (free lancer) and PhD candidate in NTUA				
From – To	**Location**	**Organisation**	**Position**	**Description**
2011-2016	Athens, Greece	Free lancer Engineer Filippou Str., No.21, GR-15344, Athens	Energy and Environmental Expert	Private contract with the firm Green Evolution SA in the framework of the Project FP7 (RIA) - HERB: "Holistic energy-efficient retrofitting of residential buildings": Evaluation of building energy performance and energy-retrofit optimization taking into account indoor air quality. Development and implementation of a measurement system for energy consumption and indoor air quality in pilot households.
				Private contract with the firm C-ENERGY (2015), Development of an Action Plan for the promotion of the GRASP-MED project through pilot applications regarding the energy upgrade planning of selected public buildings of the Spata Municipality: Coordination of building energy inspections in three public buildings (data collection, questionnaires to end-users); Feasibility studies to identify optimal retrofit measures by means of energy performance and green-product criteria according to the GRASP platform (building energy simulation performed using the Greek EPBD software).
				Documentation of bioclimatic design (Issue H) of the technical study 37232002ED submitted in the framework of the Architectural contest procurement entitled "General plan for the exploitation of a land space nearby the Pancretan Stadium located at the north sea front of the city of Heraklion", A.A.H. A.E. OTA, 4/3/2014. Development of a CFD model, in ANSIS FLUENT, for the simulation of physical processes of microclimate and the calculation of thermal comfort indicators spatial distribution. Model application for the determination of optimal architectural measures for mitigating local urban heat island.
				Bioclimatic study (2014)-Private contract with "Latomiki-Limeniki" Company for the numerical assessment of UHI mitigation: Numerical justification of bioclimatic design in the framework of the project: "Enhancement of urban vegetation in the area "Trigono Ethnikis Antistasis" in Kifisia Municipality". The main objective was the development and application of a microclimate finite difference model (using the ENVI-met software) for the identification of the optimal retrofitting scenario for Urban Heat Island mitigation purposes.

Indicative projects and activities as Engineering Consultant (free lancer) and PhD candidate in NTUA				
From – To	**Location**	**Organisation**	**Position**	**Description**
2008 – 2011	Heraklion and Athens	Free lancer Engineer 1821 Str., No.76, GR-71201, Heraklion	Energy and Environmental Expert	Bioclimatic design (2011)-Private contract with "A2Ggreen Architects" Company: Participation in the preparation of the proposal of Malevizi Municipality submitted in the Programme "Bioclimatic upgrades of open public spaces" co-financed by the Cohesion Fund. - Development of a CFD model targeted to calculate microclimatic parameters and thermal comfort indicators in the urban fabric using the Fluent CFD platform. - Application of the above integrated model for valuating UHI effect in the existing situation and in mitigation scenarios. - What-if analysis and conclusion of the optimum design scenario.
				Bioclimatic design (2011)-Private contract with the firm "A Papamattheoou-DIMEKO": Participation in a technical study for urban bioclimatic upgrade in Chalkida Municipality. CFD simulations campaigns as described in the above project.
				Environmental impact assessment (2010)-Private contract with "Greek Pollution Control Engineering Company-K. Kremalis": Optimization of the ventilation system of a large deckhouse allocated for painting works of C-130 aircrafts- Application in the Hellenic Aerospace Industry. Collection of technical data of the deckhouse (geometry, construction materials) and of the aircrafts (construction materials, common position) as well as common positions of laborers. Development of an indoor air quality (IAQ) model and integration in the CFD platform Fluent for the prediction of the airflow pattern under different design configurations of the ventilation system. Application of the above model for the identification of the design scenario that corresponds to minimum VOCs concentration at the breathing level of laborers during the painting work.
				Αξιολόγηση μελετών ασφαλείας στα πλαίσια εφαρμογής του SEVESO-II σε θέματα αρμοδιότητας του Υπουργείου Ανάπτυξης. Ως μέλος της τεχνικής ομάδας μελέτης συμμετείχε στην αξιολόγηση της αποτελεσματικότητας των μέτρων ασφαλείας σε βιομηχανικές μονάδες διεργασιών πετρελαίου.
2005 – 2008	Athens	School of Chemical Engineering NTUA Iroon Polytechneiou Str., No.9, GR-15780, Athens http://www.ntua.gr	Researcher / PhD candidate	Development of a methodology for controlling odour emissions in chemical industries-Pilot application in "INTERCHEM HELLAS SA". As a research collaborator he was involved in the determination of odour elimination measures in the polymer industry and applications in "INTERCHEM".
				Archimedes-II research program: Development of a methodology to determine indoor air quality (IAQ) in air-conditioned enclosures. The project was undertaken during the period July 2006-December 2006 in collaboration with the TEI of Chalkida. As a research collaborator he participated in designing the experiment (envelope thermal performance measurements, temperature and air speed measurements in an experimental chamber) and he carried out the CFD simulation of the airflow pattern in and around the chamber. (refer to publication J9)
				Archimedes-II research program: Utilizing reflective insulation to improve building-envelope thermal performance and phase-change for heat transmission. The project was undertaken during the period July 2006-December 2006 in collaboration with the TEI of Chalkida. As a research collaborator he participated in designing the experiment and he carried out the CFD simulation of the building envelope thermal performance.

14. Teaching and Training experience

Teaching experience at higher education Institutes				
From-To	**Location**	**Institute**	**Position**	**Description**
4 Oct. 2021 – 11 Feb. 2022	Heraklion, Crete	Hellenic Mediterranean University Department of Mechanical Engineering https://mech.hmu.gr/	Fellow lecturer	Autonomous teaching of the course "Turbine engines design" in the framework of the academic scholarship contract 4/10/2021.
22 Oct. 2020 – 30 Jun 2021	Heraklion, Crete		Fellow lecturer	Autonomous teaching in the scientific field "Applications of heat and fluid dynamics". Courses: • Energy management and saving in buildings (MSc Programme "Energy Systems"). • Computational Fluid Mechanics. • Heating-Cooling-Air Conditioning-I.
13 Apr 2020 – 24 Jul 2020	Heraklion, Crete	Hellenic Mediterranean University Department of Electrical and Computer Engineering https://ece.hmu.gr/	Fellow lecturer	Autonomous teaching in the scientific field "Energy Systems". Courses: • Building energy management. • Introduction to Renewable Energy Sources.
7/3-30/6/2013, 8/11/2013-20/2/2014, 5/4-23/6/2014	Athens	Mediterranean College 107 Patision & 8 Pellinis Str. info@medcollege.edu.gr	Rapporteur	Courses Planning and Teaching in the Programme «Professional diploma in Energy Production and Management». Courses: - Environmental technology and impact assessment: Environmental management systems, ISO14001 and EMAS, Environmental impact assessment studies, Estimation of biogas emissions, Estimation of emissions and pollutants' dispersion from thermo-electric power stations, absorption columns design. - Energy efficiency in buildings: Thermal insulation efficiency, EPBD directives, energy efficiency technologies, heat transfer mechanisms in buildings, bioclimatic design, building energy performance prediction, double and triple energy systems. - Saving and rational use of energy in industry: heat recovery, energy and exergy losses, computation of exergy of fluid streams, heat exchangers design.
7/10/2008-5/7/2009	Athens	Technological Educational Institute (TEI) of Athens http://www.teiath.gr	Experimental collaborator-Teaching associate	Associate teacher in the Department of Civil Works and Infrastructure Technology in the field of Experimental Hydraulics. In this course he demonstrated various experiments and theoretical analysis of various Hydraulics problems, such as liquid-density measurements, Hydrostatic force determination, viscosity measurement following the Stokes Method, Laminar-to-Turbulence transition, Jet impingement on flat and curved surfaces.
1/9/2006 – 30/6/2007	Athens	School of Chemical Engineering NTUA Iroon Polytechneiou Str., No.9, GR-15780, Athens http://www.ntua.gr	PhD Candidate / teaching assistant	Teaching assistance for the courses: Energy analysis of industrial systems Transport Phenomena II

Training experience				
From-To	**Location**	**Organisation**	**Position**	**Description**
10 Jul 2019 – 10 Jul 2019	Algiers, Algeria	CRES	Senior expert, trainer	Senior expert invited trainer in the training seminar «Training on the use of a Sustainable Energy Design Toolkit for Public Authorities» implemented in the framework of the project meetMED (https://meetmed.org). A lecture entitled «GRADUAL ENERGY RENOVATION PLANS FOR PUBLIC BUILDINGS» was conducted focusing on training the participants (technical experts of energy agencies, technicians and engineers of public authorities, energy managers, researchers, etc.) in applying novel methods and computational tools for the development of Action Plans for gradual energy upgrading of public buildings (for further details refer to https://meetmed.org/meetmed-training-seminar-on-the-use-of-a-sustainable-energy-design-toolkit/).

Training experience				
From-To	**Location**	**Organisation**	**Position**	**Description**
7 December 2018 – 7 December 2018	Heraklion, Crete	CRES	Leading trainer	Training in “Computational tools for decision-making in the energy upgrading of public buildings” which was organized in the framework of the IMPULSE project (CRES was the project Lead Partner) by the Municipality of Heraklion (Project Partner). Training was focused on the use of IMPULSE computational tools for the conduction of realistic and affordable plans of gradual energy upgrading of large samples of public buildings. The target groups consisted mainly of engineers and technicians from technical services of public administrations (regions and municipalities), energy managers, members of teams of the Sustainable Energy Action Plans in the framework of Covenant of Mayors, etc.
22 September 2015	Valencia, Spain	Valencia Institute of Buildings (IVE) And Climate KIC Carolina Mateo cmateo@five.es Maria Loloni maria.loloni@climate-kic.org	Lecturer/ Keynote Speaker	Invited lecturer in the session “Identifying CO2 saving opportunities in Mediterranean cities” in the framework of “CLIMATE KIC-PHD SUMMER SCHOOL 2015” implemented in Valencia, organized by IVE and Climate-KIC. The following issues were presented to PhD candidates: - Energy consumption in Greek building stock and interrelation to the Urban Heat Island effect - Urban Heat Island intensities in Greece and main causes (including anthropogenic heat) - Climate change challenges - National policies strengths and weaknesses to tackle Climate Change - Methods to assess and mitigate Urban Heat Island (mainly based on finite volume methods) - Urban energy planning approaches - Good examples of mitigation measures, e.g. Cool-roof case study - Recommendations for future research work e.g. meso- and micro-scale coupling based on future-oriented climate change scenarios to extract future proofed urban planning and retrofit solutions - Questions & Answers session (Speed dates with PhD Candidates)
Sep. 2014-Dec. 2014	Athens and Patra	Energy Trading S.A. www.entrade.gr	Project coordinator and Trainer	Coordinator of the project “Development, planning and implementation of training seminars in the framework of the European Programme GRASP-MED” according to a private contract between the Company and Patras University. As project coordinator G. Stavrakakis took over: - Coordination of all activities - Planning and organization of training sessions on Energy Efficiency and Renewable Energy - Preparation of case studies using computational tools e.g. KENAK software (national building energy calculation software) - Development of excel-based routines for calculating energy and thermal indicators in buildings and open spaces - Methods and indicators to assess Urban heat island in local level - Presentations in two seminars (Patra and Athens) with SMEs, engineers, Local authorities representatives and students being the main attendees. - Draft relevant notes for trainees including a special chapter with analysis of National Course over the adaption of 2010/31/EC and 244/2012/27 and issues remaining for Greek compliance with EU directives.

15. **Other information** (e.g., awards, research impact, publications)

Awards

- **3-year scholarship** funded by the State Scholarships Foundation of Greece in the research field "Chemical Engineering Sciences" for the elaboration of PhD thesis (01/11/2007-01/11/2010).
- **"Thomaidis" award for contribution to scientific progress** for the papers (J19) και (C6) in 2010 and 2006, respectively.
- **7th place in the Elsevier list "top25 hottest articles" of the scientific journal "Energy and Buildings"** during April to June 2008 regarding the article J20.
- **6th place in the Elsevier list "top25 hottest articles" of the scientific journal "Applied Mathematical Modelling"** during July to September 2011 regarding the article J15.

Impact of research work

- **Over 750 citations (since 2008), h-index: 11**, according to "Google Scholar".
- **Reviewer in international peer reviewed scientific journals**, e.g. Building and Environment-Elsevier, Energy and Buildings-Elsevier, Energies-MDPI, Environmental Fluid Mechanics-Springer.
- **The tools for conducting public-buildings energy renovation plans developed in the framework of the IMPULSE Interreg MED project are embedded in the website of the Ministry of Energy and Environment** for conducting ERB plans by local authorities in the framework of the L.4843/2021: https://ypen.gov.gr/energeia/energeiaki-exoikonomisi/ktiria/schedio-energeiakis-apodosis-ktirion-perifereion-kai-dimon/
- **Guest co-Editor of the Special Issue** "Planning and Management of Buildings' Energy and Environmental Efficiency in Urban Environment" of the scientific journal Energies (mdpi): https://www.mdpi.com/journal/energies/special_issues/28ZZAAEX14

Member of Committees

- Member of the Technical Programming Committee of "Sustainable Places 2014" Conference, held in Nice, France (October 2014):

  https://www.sustainableplaces.eu/wp-content/uploads/2017/01/SP2014_Paper-Proceedings.pdf.

- **Review Editor** in the international peer-reviewed scientific journal Frontiers in Energy Efficiency https://loop.frontiersin.org/people/2029217/overview.

Scientific publications

Chapters in refereed international books

B1) G.M. Stavrakakis, A.I. Stamou, N.C. Markatos, "Evaluation of thermal comfort in indoor environments using Computational Fluid Dynamics (CFD)", In: Harris R.G., Moore D.P. (editors), Indoor Work and Living Environments: Health, Safety and Performance. Nova Science Publishers Inc., 2009, pp. 97-166, ISBN: 978-1-61728-521-9.

B2) D.P. Karadimou, G.M. Stavrakakis, N.C. Markatos, "Computational prediction of airflow and thermal comfort in naturally ventilated real-scale buildings", In: Nemecek J., Schulz P. (editors), Buildings and the Environment, Nova Science Publishers Inc., 2009, ISBN: 978-1-60876-128-9.

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J2)Tziritas, D.; Braimakis, K.; Bakirtzis, D.; Stavrakakis, G.M.; Yfanti, S.; Terzis, K.; Langouranis, P.; Zervas, P.L.; Karellas, S. Cost-Optimality Assessment of a Solar Trigeneration System for Tertiary Sector Buildings in Greece. *Energies* 2024, *17*, 2819.

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J7) Tziritas, D.; Stavrakakis, G.M.; Bakirtzis, D.; Kaplanis, G.; Patlitzianas, K.; Damasiotis, M.; Zervas, P.L. Techno-Economic Analysis of a Hydrogen-Based Power Supply Backup System for Tertiary Sector Buildings: A Case Study in Greece. *Sustainability* 2023, *15*, 7646.

J8) Stavrakakis, G.M.; Zervas, P.L.; Terzis, K.; Langouranis, P.; Saranti, P.; Stephanedes, Y.J. Exploitation of Mediterranean Cooperation Projects' Tools for the Development of Public Buildings' Energy Efficiency Plans at Local Level: A Case Study in Greece. *Energies* 2023, *16*, 3352.

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C13) Γιώργος Μ. Σταυρακάκης, Παρουσίαση των υπολογιστικών εργαλείων του Έργου IMPULSE PLUS και του τρόπου αξιοποίησης για την εκπόνηση Σχεδίων σταδιακής ενεργειακής αναβάθμισης κτιρίων και Επιδεικτικές εφαρμογές χρήσης των εργαλείων σε μελέτη περίπτωσης, Διαδικτυακό εκπαιδευτικό σεμινάριο στη χρήση υπολογιστικών εργαλείων για την εκπόνηση σχεδίων ενεργειακής απόδοσης δημόσιων κτηρίων στο πλαίσιο του Έργου IMPULSE PLUS του Ευρωπαϊκού Προγράμματος Εδαφικής Συνεργασίας Interreg MED 2014-2020, 28/6/2022. Διαθέσιμο στον ηλεκτρονικό σύνδεσμο (πρόσβαση την 23 Μαΐου 2023): https://impulse.interreg-med.eu/index.php?id=3318&tx_news_pi1[news]=11976&tx_news_pi1[controller]=News&tx_news_pi1[action]=detail&cHash=543100481197b3aab703741546b4656e.

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"Thermal Energy Storage for On-demand Solar Trigeneration-TES4Trig" implemented in the framework of the Programme CSP ERA-NET 1st Joint Call (T12EPA5-00059), March 2023.

D2) Konstantinos Braimakis (NTUA), Dimitrios Tziritas (MESE), Dimitrios Bakirtzis (MESE), Emmanouil Efthymiou (MESE), Christina Chatzipoulka (MESE), George M. Stavrakakis (MESE), Julio Terron (CADE), Siddharta Dutta (PT). Deliverable D1.3 Conceptual plant layout and operating strategies. Project "Thermal Energy Storage for On-demand Solar Trigeneration-TES4Trig" implemented in the framework of the Programme CSP ERA-NET 1st Joint Call (T12EPA5-00059), March 2023.

D3) Δημήτριος Τζιρίτας, Γ.Μ. Σταυρακάκης, Γιώργος Καπλάνης, Σπύρος Τσίκνας, Τόνια Κατσίμπρα, Αριστέα Βλάχου, Λιάνα Ντυμένου, Αγγελική Στάμου, Σελένα Μαρκουίζου, Μιχαήλ Κατσιβελάκης, Ελεάνα Ματαράγκα, Παναγιώτης Μαρκάτος, Τόνια Μαραγκού, Σταυριάννα Ζαχαρίου, Κωνσταντίνος Τερζής, Παναγιώτης Λαγγουράνης, Παναγιώτης Ζέρβας. Σχεδιασμός και Ανάπτυξη Τεχνικών Προδιαγραφών για Έξυπνο Συστήμα Παροχής Τροφοδοσίας μέσω Υδρογόνου. Στο πλαίσιο του Έργου «Επιχειρησιακά Σχέδια Ανάπτυξης της Καινοτομίας ΑΠΕ-ΕΞΕ για εφαρμογή σε Υποδομές Σχεδόν Μηδενικής Ενεργειακής Κατανάλωσης [ΓΓ2CL-0365783]» του Προγράμματος ΓΓΕΚ «ΕΠ «Ανταγωνιστικότητα Επιχειρηματικότητά και Καινοτομία», ΕΣΠΑ 2014-2020», Ιανουάριος 2023.

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