

Associate Professor Sofoklis Makridis, Director InnoEnergy



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University – Qualified Physics Engineer – Industrial Research and Development

An ambitious, diligent and results-orientated **University Professor in Mechanical, Electrical, Chemical and Environmental Engineering courses** and highly qualified **Physics Engineer** combining excellent engineering and planning skills acquired during academic studies, lecturing and industry-based laboratory, supervision experience and leading academic and industrial projects. A confident, disciplined and dedicated tutor / lecturer, able to demonstrate a practical and analytical approach to resolving challenging problems and issues, even while under significant pressure. An academically talented individual who is able to understand, interpret and clearly articulate specialist, complex information to a variety of audiences. Proactive and versatile, this dynamic team player is keen to develop and seeks to make a major contribution. Hydrogen Storage Projects with Carbon280-Australia, HYSA-Africa, Seawind-UK

Skills

Leadership	Manages scientists, students, course development and supervision
Lecturing	Experienced in supervising and organising new course modules & exams
Mentoring	Provides sound advice and guidance to students
Team Working - Editorial	Enjoys working collaboratively in a range of multi-disciplinary teams
Complex Research	Possesses a highly analytical mind & develops new research methods
Highly Adaptable	Works well in different environments / roles, delivers under pressure
Innovation- Entrepreneurship	Development of science of a new process, e-learning in teaching
Project planning- management	Research projects, lecturing, students' supervision

Selected Achievements

- ✓ Breakthrough on efficient hydrogen storage in Mg-nanocomposites and novel nanochemistry manipulation for ultra-fast hydrogen absorption-desorption processes in intermetallics
- ✓ CFD modelling and optimisation in hydrogen-fuel cell systems, CO₂ capture apparatus and metal hydride tanks
- ✓ Materials and processes of metal hydride hydrogen compressor systems, heat exchange analysis, hydrogen policy
- ✓ Electrification, nanocomposite magnetic materials for high temperature permanent magnets
- ✓ Environmental approaches in green buildings and smart cities, focusing on innovative zero carbon technologies
- ✓ Developing the career of 67 diploma under-postgraduate students world-wide and nine (9) PhD students (3 finished: E. Gkanas is a Lecturer at the University of Coventry in UK, E. Kouloukakis is a R&D Mech.-Eng. in Crown Holdings in Greece, A. Ioannidou is in Research and Standards at Public Power Corporation S.A. in Greece). Director of the Global Greek Green Deal Cluster on Materials, Energy and Environment.

Education

Aristotle University of Thessaloniki, Greece Dept. Electrical & Computer Engineering	Ph.D. in Materials Science and Engineering	Oct.2000 - Feb.2004
Aristotle University of Thessaloniki, Greece Dept. Chemical & Mechanical & Electrical Engineering	MSc in Materials Science and Engineering	Mar.2001 - Dec.2002
University of Ioannina, Greece Dept. Physics	B. Sc. (Hons) in Physics	Oct.1994 - June 1999

Career History

June 2016 to today **University of Patras, Dept. Environmental Engineering** **Associate Professor**
Associate Professor (since 10/2019) & Assistant Professor (6/2016-9/2019) in Materials and Processes in Energy – Hydrogen Technologies, School of Engineering. Modules in undergraduate and postgraduate studies. Assessing and revalidating existing courses to ensure consistent standards and delivery. Additionally, responsible for carrying out comprehensive research as appropriate. Supervising PhD students. Academic Enterprise. Student career development. Director of Materials and InnoEnergy Laboratory for Teaching and Research.

March 2020 to today **Chem. Eng., University of Bradford, UK** **Honorary Visiting Academic Staff**
Visiting Professor in the Department of Chemical Engineering (#4 Guardian) for Research Collaboration in Hydrogen Production and Storage, Electrification and Green Deal Approaches with Dr. Panagiota Pimenidou. PhD students co-supervision with Prof. Felician Campean & Dr. Pimenidou in PhD by published work and Regular PhD programs. Development of a new Publishing Company in-house targeted in students' academic writing and publishing experience.

March 2019 to February 2020

KU Leuven, BELGIUM

Visiting Professor

Raw materials and Sustainability: research to commercialisation activities, from intellectual property creation to venture building in the field of advanced materials and microfabrication. Involved in technology, product and service development, project management, technology consultancy, market analysis, strategy and business development.

August 2018 to February 2019

University of Loughborough, UK

Senior Researcher in Hydrogen CFD

Visiting Senior Researcher at the University of Loughborough – Dept. of Aeronautical and Automotive Engineering on CFD modeling of hydrogen – solid oxide fuel cells (S. Korea Project). Two diploma students I supervised at the University of Western Macedonia (Dept. Mechanical Engineering) have been PhD candidates (one Industrial PhD with 3M has finished) in Gary Critchlow's (Principal supervisor - Head of Materials Department) team.

August 2013 to April 2014

University of Bolton, UK

Lecturer in Materials and Energy

Playing a key role as a Lecturer on interdisciplinary courses: Hydrogen & Fuel Cells, CO₂ capture, CFD modeling for undergraduate and postgraduate students, within the Institute for Materials Research and Innovation (IMRI) and the Institute for Renewable Energy and Environmental Technologies (IREET). Responsible for providing academic advice and guidance, as well as a range of administrative tasks including assessing and validating / revalidating new and existing courses to ensure consistent standards and delivery and preparing / submitting exam documents to the exam course committees. Awarded a grant by the Lawrence Berkeley National Laboratory (LBNL). PhD and MEng/MSc students' supervision.

Key Projects / Achievements

- Hydrogen storage and CO₂ capture with LBNL(USA) project + Agiltron for US Army hydrogen vehicles
- Researched, developed and coordinated 3 course modules and effectively supervised and delivered the modules to students
- Acted as principal investigator for studies on performance & emissions, 2 awarded PhD theses.

April 2014 to May 2016

University of Western Macedonia, Greece

Lecturer in Materials and Energy

Lecturer in the Department of Mechanical and Electrical Engineering and Lecturing in MSc and MEng students: Hydrogen Technology, Renewable Energy, Supervising students. Developing Environmental Laboratory. Undergraduate 'process engineering systems' module and on the post-graduate 'renewable sources of energy' module, while undertaking PhD studies and supervising laboratory sessions.

September 2012 to October 2012

University of Nottingham (UK)

Visiting Researcher

EPSRC project: Co-investigator in Development and Integration of Biomass and Concentrating Photovoltaic System for Rural and Urban Energy Bridge: BioCPV - Hydrogen storage and processes (CFD) in Prof. Gavin Walker's Group. After the one month I continued collaborating with Dr. Alaistar (Senior Researcher in Group) and sent my PhD student, E. Gkanas, in Walker's lab at Nottingham.

December 2012 to May 2013

European Commission (EC), Brussels JRC (Institute for Energy and Transport)

Grantholder on "Materials for low-carbon energy technologies"

October 2000 to today

NCSR "Demokritos", Greece

External Collaborator

At the Institute of Nuclear Technology and Radiation Protection (INTRP), National Centre of Scientific Research (NCSR) "DEMOKRITOS" and the Institute of Materials Science NCSR "DEMOKRITOS"

Key Projects / Achievements

- NET-tools: Hydrogen and fuel cell technology platform
- European Integrated Program NESSHY - Novel Efficient Solid Storage for Hydrogen
- Visiting Researcher in Josef Stefan Institute through the Bilateral Program between Greece-Slovenia on "Novel Solid-State Intermetallic Materials for Hydrogen Storage and Advanced Characterizations", Hellenic General Secretariat Research Technology
- European program "Hydrogen Storage in Hydrides for Safe Energy Systems" (HYSTORY)
- Bilateral program Greece-UK, Synthesis and processes of nanocomposite permanent magnetic materials
- European program "Cost-Effective and durable nanostructured Pd catalysts for natural gas vehicle and premixed burner applications" (CATNAT)
- EU R&D in Ferroxcube (Philips), Ferrites for high frequency applications
- EU program High Temperature Permanent Magnets (HITEMAG)

Industrial experience

- 2012-2013 CIDETE company (Spain), EU Thermoelectrics and hydrogen project, EDEN
- 1/2/2011-31/10/2012, HyStore Technologies Ltd, Experienced Researcher Advisor, Marie Curie Industry-Academia partnership 'ATLAS-H₂', Nicosia –Cyprus
- 1/3/2006 – 31/8/2006 and 1/1/2007 – 30/6/2007, HyStore Technologies Ltd, Experienced Researcher, Marie Curie Transfer of Knowledge 'DIAMANTE', Nicosia –Cyprus
- 2010 – 2014, Energy Conversion Devices (ECD Ovonic), long- distance collaboration on electronic properties research for materials dedicated on batteries, Michigan 48309, USA

Consultancy experience (2004- today)

- CETCOR Conferences Events, CognitoLink/Third Bridge (UK), Origami Engineering (UK), Lek (France), Amen-Technologies (Greece), CIDETE (Spain), Hystore Technologies Ltd (Cyprus), LabTech (Bulgaria), McPhy (France)

June 2000 to October 2001

University of Delaware, USA

Research Assistant

PhD student at the Sharp lab of the Physics Department at the University of Delaware Defence Sciences Office of the federal Defense Advanced Research Projects Agency (DARPA): Magnetic Metamaterials Program for Electromagnetic Applications – High temperature permanent magnets – Prof. George Hadjipanayis' Group

Awards

- Awarded PostDoc by the Greek Scholarships Foundation (IKY) from January 2005 to June 2006 in science and engineering on Hydrogen Storage at University of Western Macedonia (Greece)/ Jožef Stefan Institute (Slovenia)
- Awarded in Academic and Research Excellence in Higher Education: Promotion and Support, <http://excellence.minedu.gov.gr/en/druseis/listing/1387-hydrogen>

Funding EPSRC ID (PID: M112587G), FP7-HORIZON2020 Expert, National Science Centre (Poland)

Secured grant funding of Institutional Income - USA programs & institution - industrial, designed and project managed feasibility studies, technology and product development.

Publications-Patents

Googles Scholar: <https://scholar.google.com/citations?user=Fhzh3o8AAAAJ&hl=en&authuser=2>

Research Gate: https://www.researchgate.net/profile/Sofoklis_Makridis3

Scopus: <http://orcid.org/0000-0002-0736-8778>

International & National Exposures (33 in USA-UK-GR-Kazakhstan, Australia)

<https://www.bolton.ac.uk/MediaCentre/Articles/2013/Dec2013-02.aspx>

<http://www.hydrogenfuelnews.com/organizations-team-address-hydrogen-fuel-storage-challenges/8516312/>

<https://www.linkedin.com/company/global-greek-green-deal-cluster>

Leading in Committees – Memberships – Activities

- Editor-in-Chief & Editor in Elsevier, Nature Publishing Group, Springer, MDPI, DeGruyter Open
- IEEE Magnetics Society
- Evaluator in EPSRC Review Proposal Panel (UK)
- Member of the European Hydrogen Association (EHA)
- Member of the Materials Research Society (MRS)
- Knowledge Transfer Network (UK) - My PhD student is a Knowledge Transfer Manager
- UK Hydrogen & Fuel Cells Association
- Knowledge Centre for Materials Chemistry (KCMC) in UK
- Member of Greek Physics and Materials Science Association
- International Chamber of Commerce (ICC) Hellas in Commission on Environment and Energy (Greece)
- **Father of five (5) children**

Referees

- **Prof. Panagiota Mihalakakou**, Head of the Dept. of Environmental Engineering, University of Patras, Greece

Email : pmichala@upatras.gr

- **Dr. Francesco Massari**, General Manager Xebec Europe at Xebec Adsorption Inc - CTO Electrolysis, Italy

Email : f.massari@windowlive.com, <https://www.linkedin.com/in/francescomassari/>

- **Dr. Kwo-hsiung Young**, Group Leader (Chemist - Batteries), Ovonic Division at BASF (Battery Materials), USA

Email: kwoyoung@yahoo.com; kwo_young@basf.com, <https://www.linkedin.com/in/kwo-young-328a007/>

- **Prof. Gary Critchlow**, Head of Department of Materials, Professor of Surface and Interface Science, UK

Email: g_w.critchlow@lboro.ac.uk, <https://www.linkedin.com/in/gary-critchlow-a3368174/>

- **Prof. Peter Myler**, Electric vehicles, ESS, School of Engineering, The University of Bolton, UK

E-mail: P.Myler@bolton.ac.uk, <https://www.linkedin.com/in/peter-myler-04447841/>