

CURRICULUM VITAE



FIVOS ANDRITSOS

Mechanical Engineer, PhD

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COMPETENCY AREAS

As per the EC Taxonomy of Functions & Domains

Science & Research

Innovation & Creativity

Climate, Environment & Natural Resources

Maritime Affairs (maritime safety & security)

Technologies & Engineering in Science & Industry

Energy Policies & Technologies

Transport

Safety, Security & Crisis Management

Education & Training

Information & Communication Technologies

IT Tools for specific application areas

EDUCATION

Basic degree

Mechanical Engineering

Patras University, Engineering School, July 1977

Post graduate degree

Doctoral degree (PhD)

Patras University, Engineering School, March 1982

Post graduate studies

University of Newcastle upon Tyne, Mech. Engineering dept.

October 1979 – December 1980.

Scholarship from the British Council

Specialized training

Management

Maritime safety & security

Humanitarian de-mining

CAD / CAE

Languages

English

Fluent - C2 level - Cambridge & Michigan Proficiency, high-school education at the American Athens College, 15 months stay in UK

French

Fluent - C2 level - Certificate I & II from the French Institute of Athens, Sorbonne I diploma

Italian

Fluent - C2 level - located and working in Italy since 1986, courses for 2 years in JRC

Greek

Native language

PRESENT OCCUPATION

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| <i>Since February 2025</i> | Guest Senior Researcher |
| <i>Company / organization</i> | Hellenic Mediterranean University (HMU) Mechanical Engineering Dpt Energy Systems Laboratory 71410 Hertaklion, Crete, Greece |
| <i>Field of work / application</i> | Energy Security of Crete with emphasis to the floating and underwater infrastructure Set up, implementation and management of research projects / actions. Systems' analysis, functional requirements & specifications. Maritime safety, port security, underwater inspection & intervention systems, marine pollution containment, offshore safety. Robotics, mechatronics, autonomous systems, simulation and testing of robotic systems. |
| <i>Since September 2019</i> | Consultant |
| <i>Company / organization</i> | Self employed |
| <i>Nature of work and responsibilities</i> | Technical / Scientific Advisor, Evaluator Member of several evaluation / accreditation panels of Greek Universities or University Departments, as assigned by HAHE (Hellenic Authority for Higher Education, ex HQAA) in the frame of the <i>Quality Assurance in the European Higher Education Area</i> scheme. Principal author of a report on the hydrocarbon deposits and other assets of the Albanian state company ALBPETROL for the FORTEN Risk Management Ltd. Participation in the drafting of research proposals. Collaboration with the Italian company ISTEOP (Sustainable Technologies for Energy production and Environmental Protection). |

MAIN PROFESSIONAL CAREER

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|--|---|
| | July 1 st 1986 – August 31 st 2019 |
| <i>Company / organization</i> | Commission of the European Communities Joint Research Centre Directorate E - Space, Security and Migration (former Institute for the Protection and Security of the Citizen) 21027 Ispra (VA), Italy |
| <i>Position held</i> | Principal Scientific Officer , AD13 since January 2011 Digital Security unit, 2011 – 2019 Maritime Affairs unit, 2004 – 2011 Conceptual Design & General Design sectors, 1986 – 2004 |
| <i>Nature of work and responsibilities</i> | Research, scientific support to the Community policies Support to the conception & implementation of EC policies, mainly in the maritime and transport domains. Set up, implementation and management of research projects / actions. Participation in Commission task forces. Planning, setting up and managing of engineering design laboratories. |
| <i>Field of work / application</i> | Systems' analysis, functional requirements, specifications and testing, quality control / assurance procedures. |

Engineering design analysis and numerical simulation.

Safety & security, emergency management & interventions, search & rescue, identity management and border control.

Maritime safety, port security, underwater intervention systems, inspection systems, marine pollution containment, offshore safety, inland water navigation.

Robotics, mechatronics, autonomous systems, simulation and testing of robotic systems.

PUBLICATIONS

Detailed list in annex 1

In reviewed journals

22 including journals like: Tribology International, Lubrication Technology (ASME), Fusion Engineering & Design (Elsevier), Fusion Technology (ANS), Information & Software Technology (Elsevier)

In congresses usually after review

56 mainly in international topical congresses like: International Marine Design Conference, European Wave Energy Conference, International Symposium on Fusion Nuclear Technology

Technical reports

51 mainly reports in the frame of large European research projects

Other

27 including books, EUR publications, contribution in series of the International Atomic Energy Agency (IAEA)

PRESS

Results of my projects (mainly DIFIS on underwater pollution containment) have appeared at least twice in EURONEWS (Hightech), in CNN (Connect the World), in national TV broadcasts as well as the Parliament magazine and on numerous articles on the Greek, Italian and French press.

Some of my projects have been mentioned as examples of JRC scientific contribution by the former RTD Commissioner Busquin

PATENTS

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|--------------------|--|
| EP 1524186 | Double inverted funnel system for the collection and / or removal of hydrocarbons from ship wrecks, even in great depths (i.e. PRESTIGE) - granted |
| EP 2643211 | Under-keel inspection system: system that allows inspecting the hull of a ship while it is underway in a navigation corridor - granted |
| EP 11181618 | Double inverted funnel system adapted for the intervention on deep offshore oil well blow-outs - granted |
| EP 13175822 | Multiple inverted funnel system for separating and collecting methane gas out of marine hydrate deposits - submitted |

COMPETITIVE PROJECTS #1

Which I generated and had the main role in their setting-up and execution, usually as the overall project technical manager.

Total budget: 19+ M€, from which 4+ M€ only for my team in JRC

*Concluded
July 2019*

eIWT: Electronic tools in support of Inland Water Transport, in particular the electronic Service Record Book (eSRB) and Vessel Logbook. Financed entirely by DG MOVE.

Two consecutive contracts with DG MOVE for a total of budget of 440 k€

TAPS concluded April 2009
TAPS II concluded Jul 2011

just for JRC.

TAPS & TAPS II -Technological Aspects of Port Security: Administrative Arrangement (AA) with DG TREN.G aimed at the identification of additional regulations (minimum standards, guidelines or best practices) for the implementation of the International Ship & Port Security (ISPS) code and the relevant EC regulations on the EU port facilities.

TAPS II is the follow-up AA aiming at the extension of TAPS to the whole port area, including the sea-side part.

Total cost: 700 k€ over 3 years, exclusively for the JRC

Concluded
April 2012

ASPIs: Novel surveillance system for surface transport means and public spaces, based on place-and-forget devices that, upon the occurrence of a potentially catastrophic event (explosion, fire), form an ad-hoc network, send an alarm and forward information useful for the management of the emergency.

Total cost 3.5 M€ from which 0.85 M€ for the JRC

Concluded
November 2009

DIFIS: Novel system for the intervention on ship wrecks to collect and remove any leaking or trapped hydrocarbons, even at great depths (like in the case of PRESTIGE). EC financed project under the Sustainable Surface Transport (SST) line.

Total cost: 3.11 M€

ROTIS: concluded
2002
ROTIS II: concluded
August 2008

ROTIS and **ROTIS II**: EC financed projects for the development of a ROV based system capable of navigating inside the ballast tanks of modern double-hull vessels to perform all the required inspections, even while navigating.

Total cost: 7.6 M€, from which 1 M€ for JRC

Concluded
June 2005

LOCCATEC: EC financed project, under the IST line, for the location of people trapped under the ruins of collapsed buildings.

Technical / scientific manager for the whole project.

Total cost: 3.25 M€, from which 0.8 M€ for JRC

Concluded
2002

ROBMAR: Thematic network for the Robotics in the Maritime Industries, GROWTH

Scientific manager for the whole network

Total cost: 300 k€, from which 100 k€ for JRC

Concluded
2001

AIPS - Automation & Integration of Processes in Shipbuilding: State of the Art report for DG Enterprise

Total cost: 150 k€, exclusively for JRC

COMPETITIVE PROJECTS #2

Most of which as responsible for JRC

Total budget: 50+ M€, from which 2+ M€ only for my team in JRC

FASTPASS: Security research project on the next generation automated border control, particular focus on the maritime scenario, co-financed by DG HOME, concluded successfully

EPCIP-2011 A4: Activity #4 on Identity Management in large Ports, within the 2011 European Programme for Critical Infrastructure Protection (250 k€ for activity #4, financed entirely by DG HOME), concluded successfully

SECUR-ED: Large (44 M€) demo project on the security of land mass transport systems, 690 k€ for the JRC, concluded successfully

EFFORTS: Integrated project on Effective Port Operations, 200 k€ for the JRC, FP6 SST, concluded successfully

ALIVE: Autonomous Underwater Vehicle (AUV) capable of underwater interventions and manipulations, GROWTH, concluded successfully
Total cost: 4.5 M€, from which 0.35 M€ for JRC

PARREHA: Virtual reality system for the rehabilitation of persons suffering from the Parkinson's disease, IST, concluded successfully
Total cost: 3.5 M€, from which 0.43 M€ for JRC

PIOWC: Optimization of oscillating column wave energy power plants, Pico island power plant, Azores, JOULE, concluded successfully
Total cost: 721 k€, from which 148 k€ for JRC

ERAMAR: Thematic network for the synergy in R&D activities for the Maritime Industry, GROWTH, concluded successfully

FREESUB: Autonomous underwater vehicles (AUV) for underwater interventions, Marie Curie training network,

FREESUB.NET: AUV for underwater interventions, Marie Curie training network, continuation of FREESUB, concluded successfully

ADVANCES: DG TREN network on quality shipping, concluded successfully

IGNITOR: Thermo-mechanical optimization of the central solenoid of the experimental thermonuclear reactor IGNITOR, commissioned by ABB

Design analysis of a helicopter planetary gearbox, under contract from AGUSTA-BELL

INSTITUTIONAL PROGRAMS

JRC own funds

SURCIT: Surveillance Technologies and the Citizen – smart surveillance systems fulfilling security but also privacy functionalities

Maritime Security: Vulnerability of maritime systems, autonomous surveillance & alarm systems, container security

Humanitarian de-mining: Design and pilot application of an expert system for mine detection alarm confirmation through multi-sensor data fusion.

NET & SEAFP - European programs on thermonuclear fusion: Liquid LiPb breeder Blanket design, Safety & Environmental Assessment

ITER-EDA - International thermonuclear fusion program: Nuclear integration, engineering design analysis, remote handling and maintenance.

Nuclear safety (fission): Engineering design analysis in support of the simulation of reactor core melt-down (Three Mile Island incident); Low-cycle fatigue of a pressurized water reactor (PWR) pressure vessel; Boiling water reactor (BWR) Lower Head failure experiment.

High temperature materials: FAFNIR out-of-pile experiment, biaxial creep of tubular specimens

In the context of a wider European program

In the context of a wider international program (EU, USA, Japan and Russia)

In collaboration with US and Swiss partners

TOPICAL WORKSHOPS

Which I have organized

Impact of Robotics in Maritime Vessel Inspection & Maintenance,
October 2002, Ispra, IT

Post-Prestige Issues,
March 2004, Brussels, BE

Research for a Secure Maritime Transport & Mobility,
November 2004, Barcelona, ES

New technologies for the support of SAR operations,

June 2005, Athens, GR

Technical Aspects of Port Security,

March 2009, Ispra, IT

Technical Aspects of Port Area Security,

March 2011, Ispra, IT

Emerging Surveillance Capabilities and Requirements

July 2011, Ispra, IT

Emerging Surveillance Techniques for Crime Prevention & Prosecution

December 2012, Ispra, IT

Electronic tools in support of Inland Water Transport,

September 2016, Ispra, IT

EXPERT PANELS

Panels or committees to which I have participated

1996 - 1997

Maritime Task Force,

DG Industry, Brussels, representing JRC.

1996 - 2010

Personnel selection committees,

Participation in numerous EC personnel selection committees on behalf of the administration or the personnel committee.

RTD proposal selection committees,

Participation in numerous EC or National (Greek) research project selection committees.

2016 - 2019

Public Procurement Advisory Group,

Technical expert at numerous EC Public Procurement Advisory Groups (PPAG).

2010 - present

HQA evaluation / accreditation panels,

Member of the Hellenic Quality Assurance and Accreditation Agency (HQA) panels for the external evaluation / accreditation of Greek Universities:

- Mechanical Engineering Dpt, Univ. of Thessaly: December 2010
- Mechanical Engineering Dpt, Univ. of Patras: March 2012
- Hellenic Naval Academy: December 2013
- Hellenic Air Force Academy: April 2015
- University of Thessaly: September 2019
- Hellenic Army Academy: December 2019
- Hellenic Air Force Academy: December 2020
- Hellenic Naval Academy: December 2020
- Product and Systems Design Engineering Dpt, University of the Aegean: March 2021
- Technical University of Crete: September 2021
- Mechanical Engineering Dpt, Hellenic Mediterranean University: February 2023
- University of Peloponnese, Mechanical Engineering Undergraduate program: May 2023
- University of Patras, Erasmus Mundus Master in Biomedical Engineering: July 2023
- Harokopio University of Athens, PSP on Advances in Computer Science and Information Systems, November 2024
- University of Patras, Engineering School, Human - Machine Interface PSP: December 2024

PAST POSITIONS

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|------------------------|---|
| | Prior to my position as EC official at JRC |
| August 85 - June 86 | Lecturer Patras University, Engineering School Mechanical Engineering department |
| October 84 - June 86 | Professor Technological Educational Establishment (TEI) of Patras, School of Technological Applications |
| May 84 - August 85 | Engineer Quality control, development & production studies PIRELLI spa, tyre industry, Patras, GR |
| March 83 – February 84 | Engineer – military service Quality assurance, control & testing Hellenic Defense Ministry, Military Industry Department, Mixed Section of Quality Assurance, Hellenic Arms Industry (EBO), Aigio, GR |
| June 82 - March 83 | Engineer – military service Engineering design & planning 301 Base Military Factory, Design Department, Athens, GR |

PERSONAL INFORMATION

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| Nationality | Greek | |
| Date of birth | May 25, 1954 | |