

CURRICULUM VITAE
DR. SOTIRIA DIMITRELLOU



PERSONAL INFORMATION

Profession: Associate Professor, Department of Naval Architecture, Faculty of Engineering, University of West Attica.
Mechanical Engineer, B.Sc., M.Sc., Ph.D., Member of Technical Chamber of Greece, record No.: 96339/2003.

Place of Birth: Athens, Greece

Date of Birth: 12 October 1978

Nationality: Greek

EDUCATION

- 2002 – 2008 **Ph.D. in Mechanical Engineering** at the Mechanical Design & Control Systems Department of the School of Mechanical Engineering of National Technical University of Athens (NTUA). PhD. Thesis: “Assignment on the Role of Accuracy of Geometrical Elements in the Quality and the Manufacturing Cost of Mechanical Components” - A new methodology and system were developed for the systematic analysis and subsequent computer aided assignment of optimum, in terms of manufacturing quality and cost, geometrical accuracy specifications to mechanical products.
- 2000 – 2001 **M.Sc. program “Advanced Mechanical Engineering”** at the Department of Mechanical Engineering of the School of Engineering and Information Technology of University of Sussex. Awarded the degree of **Master of Science (with Distinction)**. MSc. Dissertation: “Rapid Prototyping Using to Investigate CO2 Laser to Cut and Stack Thin Metal Sheets” - A new method was developed for the manufacture of a mechanical part with Rapid Prototyping Technique.
- 1998 – 2000 **B.Sc. course in ‘Mechanical Engineering’** at the Department of Mechanical Engineering of the School of Engineering and Information Technology of University of Sussex. Awarded the degree of **Bachelor of Engineering** with Honours Second Class (Division Two). B.Sc. Dissertation: “Prediction of Laser Bending” - Thermal and structural analysis of metal sheets using finite element analysis. Prediction of temperature changes, the yielding stress and the subsequent bending angle and comparison with experimental values.
- 2002 Recognition and equivalence with the Diploma in Mechanical Engineering of National Technical University of Athens (NTUA) with a corresponding grade of 7.23 and designation of "Very Good". (No. D.I.K.A.T.S.A.: 16-255/2002).
- 1996 – 1998 Undergraduate student for two years in the School of Electrical and Computer Science, in Polytechnic University of Patras, Greece.

ACADEMIC ACTIVITY

- 2017 – today Associate Professor at the Department of Naval Architecture of the Faculty of Engineering of University of West Attica. Scientific area: "**Computer Applications in Ship Mechanical Systems and Technical Maritime Issues**".
Fields of scientific interest:
 - CAD/CAE/CAM applications in ship mechanical systems.
 - Mechanical design based on quality, cost, and environment. Constructive development of ship systems.
 - Additive manufacturing. Reverse engineering and digital reproduction of products.
 - Advanced polymers and composites.
 - Energy efficient design. Management of ship energy performance. Techno-economic and environmental assessment.

- 2002 – 2008 Researcher at the Mechanical Design & Control Systems Department of the School of Mechanical Engineering of National Technical University of Athens (NTUA) with research interest on mechanical design, design for assembly, design for manufacturing, tolerance analysis and synthesis, cost-optimum tolerancing, rapid prototyping, reverse engineering, development of computer-based tools for CAD applications, modelling of operational processes and risk management.

TEACHING EXPERIENCE

- 2017 – today Teaching the undergraduate courses "Mechanical Engineering Drawing & Introduction to MCAD", "Manufacturing Processes", "Maritime Transport Economics" (for 3 academic years), "3D Computer Aided Design" and the postgraduate course "Advanced 3D Ship Systems Design" of the MSc Program "Advanced Technologies in Shipbuilding and Marine Engineering".

- 2013 – 2017 Teaching and Laboratory Assistant Educator at the Department of Naval Architecture of Technological Educational Institute of Athens (TEIATH) of the courses "Mechanical Engineering Drawing & Introduction to MCAD" and "Manufacturing Processes".

- 2012 – 2013 Educator at Public Institutes of Vocational Training of the course "Mechanics – Strength of Materials" for the professional specialty "Technician of motors and vehicles" (IEK Aigaleo) and "Technician of thermal and hydraulic installations" (IEK Acharnon).

- 2002 – 2009 Providing assistant teaching in laboratory exercises, workshops, exam supervision and correction, on undergraduate courses at the Mechanical Design & Control Systems Department of the School of Mechanical Engineering of NTUA.

- 2002 – 2006 Assistant Educator of the undergraduate courses "Mechanical Design I", "Design for Manufacture II" and the laboratory course "Mechanical Design II" at the Mechanical Design & Control Systems Department of NTUA.

- 2003 – 2004 *Educator at Public Institutes of Vocational Training of the course "Mechanics – Strength of Materials" for the professional specialty "Technician of motors and vehicles" (IEK Ag.Anargyron).*
Educator at Public Technical Vocational Educational Schools (TEE).

PARTICIPATION IN RESEARCH PROJECTS

Participation in submitted projects

- 12/10/2022 **University of West Attica, School of Engineering, Department of Naval Architecture. Part of the research team.** “Smart / Multi-component Marine Spare Parts employing 3D/4D Additive Manufacturing. Acronym: SmartSpareParts”. In the framework of the action: *Basic Research Financing (Horizontal support for all Sciences), National Recovery and Resilience Plan (H.F.R.I.)*.
- 12/10/2022 **Hellenic Naval Academy. Part of the research team.** “Development and Feasibility Study of a Spark Assisted Compression Ignition Hydrogen Marine 2-Stroke Engine. Acronym: SACIHL2-SE” In the framework of the action: *Basic Research Financing (Horizontal support for all Sciences), National Recovery and Resilience Plan (H.F.R.I.)*.
- 30/05/2019 **University of West Attica, School of Engineering, Department of Naval Architecture. Project coordinator.** “Application of Advanced Technologies of Additive Manufacturing and 3D Scanning in the Shipbuilding Industry. Acronym: 3DTECH-SHIP”. In the framework of the action: "Research-Create-Innovate" of the *Programme Competitiveness, Entrepreneurship and Innovation 2014-2020 (EPAnEK)*.
- 30/3/2018 **University of West Attica, School of Engineering, Department of Naval Architecture. Participating faculty member.** “Conceptual Design of Small-Scale LNG Supply Chain for Green Energy and Shipping. Acronym: SSLNGCOMSHIP”. In the framework of the action: *Greece-China Bilateral and Multilateral Cooperation of the Programme Competitiveness, Entrepreneurship and Innovation 2014-2020 (EPAnEK)*.
- 30/3/2018 **University of West Attica, School of Engineering, Department of Naval Architecture. Participating faculty member.** “The hybrid ship composite energy system capacity optimization and flexible control technology. Acronym: HYBRIDCOMSHIP”. In the framework of the action: *Greece-China Bilateral and Multilateral Cooperation of the Programme Competitiveness, Entrepreneurship and Innovation 2014-2020 (EPAnEK)*.

Participation in completed projects

- 2013 – 2015 **Technological Educational Institute (TEI) of Athens, Department of Naval Architecture. Researcher.** "Implementation of LNG fuel in commercial ship propulsion plants". In the framework of the action: *Competitiveness and Entrepreneurship, Bilateral Cooperation between China and Greece, 2012-2014. Partners: TEI Athens, Hellenic Register of Shipping, Harbin Engineering University and China International Marine Containers*. Duration: 36 months.
- 2004 – 2006 **National Technical University of Athens, Sector of Industrial Management and Operational Research. Researcher.** “WaCOM: Development of Web-based Collaborative Tools for Complex Industrial Products”. In the framework of the action: *E-business project of Information Society, Action 3.3.1*. Duration: 18 months.
- 2003 – 2007 **National Technical University of Athens, School of Mechanical Engineering. Ph.D. student.** In the framework of the action: *HRAKLEITOS: Scholarships for basic research, Project of Operational Program ‘Education’, Measure 2.2. Co-funded by the European social fund (75%) and national resources (25%)*. Duration: 4 years.

SCIENTIFIC PUBLICATIONS / PRESENTATIONS

In International Journals:

1. I. Iakovidis, S. Dimitrellou, G. Orfanos, M. Vlachogiannis, **2024**, “Improving the mechanical properties of Glass Reinforced Plastics by slight mechanical compression”, *Accepted for publication in Journal of Physics: Conference Series*.
2. S. Dimitrellou, I. Iakovidis, D.-R. Psarianos, **2024**, “Mechanical characterization of PLA, PC, and carbon fiber-reinforced PA specimens fabricated by Fused Deposition Modeling”, *Journal of Material Engineering and Performance, Springer*, <https://doi.org/10.1007/s11665-024-09144-9>.
3. M. Serris, P. Petrou, I. Iakovidis, S. Dimitrellou, **2023**, “Techno-Economic and Environmental Evaluation of a Solar Energy System on a Ro-Ro Vessel for Sustainability”. *Energies, Vol.16, No.18, 6523*. <https://doi.org/10.3390/en16186523>.
4. S.Ch. Dimitrellou, **2018**, “Reducing Energy Consumption in Greek School Buildings through Energy-Efficient Design”, *Journal of Engineering and Architecture, Vol. 6, No. 2, pp. 1-11*. <https://doi.org/10.15640/jea.v6n2a4>.
5. Dimitrellou S.Ch., Diplaris S.C., and Sfantsikopoulos M.M., **2008**, “Tolerance Elements. An Alternative Approach for Cost Optimum Tolerance Transfer”, *Journal of Engineering Design, Vol. 19, No. 2, Special Issue: Cost Engineering, pp. 173-184*. <https://doi.org/10.1080/09544820701874039>.
6. Dimitrellou S.Ch., Diplaris S.C., and Sfantsikopoulos M.M., **2007**, “Cost-competent Tolerancing in CAD”, *International Journal of Advanced Manufacturing Technology, Vol. 35, Nos. 5-6, pp. 519-526*. <https://doi.org/10.1007/s00170-006-0745-6>.

In International Conferences Proceedings with full paper review:

1. G. Stratis, S. Dimitrellou, A. Theodoulidis, **2023**, “Re-production of the hull geometry of a traditional Greek boat by using advanced 3D scanning and ship design techniques, *17th Annual Conference of Marine Technology, Hellenic Institute of Marine Technology (H.I.M.T.), Eugenides Foundation, 14-15 November 2023, Athens, Greece*.
2. S.Ch. Dimitrellou, E. Strantzali, D.N. Pagonis, G.A. Livanos, **2020**, “Retrofit of a Ro-Ro Passenger Ferry to Operate on LNG Fuel: A Greener and Safe Solution for Short-Sea Transportation”, *International Conference on Sustainable and Safe Passenger Ships, HIMT & RINA, 4 March 2020, Athens, Greece*.
3. V. Zacharis, S. Dimitrellou, K. Politis, G. Livanos, Vassilios. Pagounis, O. Arabatzi, M. Tsakiri, **2019**, “The use of geodetic techniques in stability monitoring of floating structures”, *4th Joint International Symposium on Deformation Monitoring (JISDM), 15-17 May 2019, Athens, Greece*.
4. G.A. Livanos, S. Dimitrellou, E. Strantzali, G. Theotokatos, **2015**, “Economic and Environmental Evaluation of an Open-type Ferry Converted to Use LNG Fuel”, *International Conference on Shipping in Changing Climates (SCC 2015), 24-26 November 2015, Glasgow, United Kingdom*.
5. G. Theotokatos, G.A. Livanos, S. Dimitrellou, E. Strantzali, D.-N. Pagonis, K. Politis, A. Theodoulides, D. Peirounakis, P. Mizithras, **2015**, “Design of LNG storage and feeding system for an open type ferry”, *16th International Congress of the International Maritime Association of the Mediterranean (IMAM 2015), 21-24 September 2015, Pula, Croatia*.
6. G. Theotokatos, G.A. Livanos, E. Strantzali, S. Dimitrellou, D.-N. Pagonis, D. Peirounakis, P. Mizithras, **2015**, “Computational investigation of LNG storage tank for open type ferries”, *16th International Congress of the International Maritime Association of the Mediterranean (IMAM 2015), 21-24 September 2015, Pula, Croatia*.
7. Dimitrellou S.Ch., Kaisarlis J.G., Diplaris C.S., Sfantsikopoulos M.M., **2009**, “A Cost Optimal Tolerance Synthesis Methodology for Design and Manufacturing Integration”, *11th CIRP Conference on Computer Aided Tolerancing, 26-27 March, Annecy, France*.
8. Dimitrellou S.Ch., Diplaris S.C., and Sfantsikopoulos M.M., **2007**, “A Prototype System for Cost Optimum Tolerance Transfer”, *40th CIRP International Seminar on Manufacturing Systems, 30 May - 1 June, Liverpool, UK*.

9. Dimitrellou S.Ch., Diplaris S.C., and Sfantsikopoulos M.M., **2007**, “A Systematic Approach for Cost Optimal Tolerance Design”, *International Conference on Engineering Design (ICED’07)*, 28-31 August, Paris, France.
10. Dimitrellou S.Ch., Kaisarlis G.J., Diplaris S.C., and Sfantsikopoulos M.M., **2007**, “A Systematic Approach for Functional and Cost Optimal Dimensional Tolerancing in Reverse Engineering”, *Metrology and Metrology Assurance 2007 Symposium, 10-14 September, Sozopol, Bulgaria*.
11. Leopoulos V., Bellos E., Diamantas V., and Dimitrellou S., **2006**, “Business Process e-Engineering for Small and Medium Suppliers in the Aeronautic Industry”, *8th International Conference on Stimulating Manufacturing Excellence in Small and Medium Enterprises, SMESME, 25-28 June, Coventry, UK*.

In International Conferences Proceedings with abstract review:

1. S. Dimitrellou, E. Farkona, M-M Papadatou, E. Dima, **2018**, “Energy-efficient design strategies in Greek school buildings”, *International Congress on Engineering and Architecture, 14-16 November 2018, Alanya, Turkey*.
2. E. Strantzali, S. Dimitrellou, K. Aravossis, G.A. Livanos, F. Magana, **2018**, “A Methodological Approach for Sustainable Energy Planning in Decentralised Regions: The case of Greek islands”, *International Congress on Engineering and Architecture, 14-16 November 2018, Alanya, Turkey*.
3. G.A. Livanos, S. Dimitrellou, E. Strantzali, G. Theotokatos, **2015**, “Evaluation of LNG Bunkering Concept for Greek Sea Territory”, *International Conference on Science in Technology (SCinTE 2015), 5-7 November 2015, Athens, Greece*.

Chapters in Books:

1. G. Theotokatos, G.A. Livanos, E. Strantzali, S. Dimitrellou & D.N. Pagonis, **2015**, “Computational investigation of LNG storage tank for open type ferries”, Book: *Towards Green Marine Technology and Transport*, CRC Press, 1st Edition, London, eBook ISBN9780429225604, <https://doi.org/10.1201/b18855>.
2. G. Theotokatos, G.A. Livanos, S. Dimitrellou, E. Strantzali, D.N. Pagonis, K. Politis & A. Theodoulides, **2015**, “Design of LNG storage and feeding system for an open type ferry”, Book: *Towards Green Marine Technology and Transport*, CRC Press, 1st Edition, London, eBook ISBN9780429225604, <https://doi.org/10.1201/b18855>.

Presentations in Scientific Meetings:

1. Dimitrellou Sotiria, **2017**, “Reducing the Energy Footprint in Social Building Infrastructure”, *Presentation at the two-day Energy Conference of Technical Chamber of Greece, 10-11 July 2017, Athens*.
2. Pagonis D.-N., Dimitrellou S., **2014**, “Implementation of LNG fuel to an existing RoRo Passenger ship - Preliminary design study results”, *Presentation at the Posidonia workshop “Implementation of LNG Fuel in Commercial Ship Propulsion Plants”, 05 June 2014, Athens*.
3. Sfantsikopoulos M., Diplaris S., Polydoros S., Kaisarlis G., Galanis Ch., Dimitrellou S., Tsakatikas D., Dimopoulos P., **2006**, “Modern methods for maintenance and manufacture of industrial products in the frame of Concurrent Mechanical Design”, *Presentation and poster at the exhibition “Hellenic Days of Research and Technology” organized by Technical Chamber of Greece, 22-23 June, Athens, Greece*.

ADDITIONAL SCIENTIFIC WORK

- Guest editor at Special Issue “Additive Manufacturing in Shipbuilding and Marine Industry” at scientific journal *Applied Sciences*, MDPI, (section: Marine Science and Engineering, Impact factor: 2.838 (2022), (https://www.mdpi.com/journal/applsci/special_issues/VB694AU95Z))
- Member of the editorial board of “Journal of Architectural Design and Construction Technology” (JADCT), July 2020.

- Reviewer of scientific articles in the Journal of Engineering Design of Taylor & Francis (2007 – now).
- Reviewer of scientific proposals in the 3rd Competition for Applied Research and Innovation entitled "Greece Innovates!". Organized by BSE Enterprises (SEV) and the Bank Eurobank Ergasias S.A. December 2014.
- Member of scientific team for "Investigation of the possibility and economical evaluation of large solar photovoltaic systems to school buildings in Greece". Commissioned by School Building Organization, 2010-2011.
- Coordinator and head of the Greek team in the programs: α) Leader of the Erasmus+ Youth Exchange program "Youth for Heritage" in Chisinau, Moldova, 15-22 May 2016. Participating countries: Portugal, Slovakia, Greece, Armenia, Georgia, Moldova and Ukraine, b) Leader of the Erasmus+ Training Course program "Peace 2015" in Canakkale, Turkey, 6-10 July 2015. Participating countries: Turkey, Spain, Italy, Greece, Hungary, Macedonia, Bulgaria, Romania and Armenia, c) Leader of the Erasmus+ Youth Exchange program "Food Immersion" in Bolognetta, Italy, 5-16 January 2015. Participating countries: Italy, Poland, Greece, Spain and Lithuania.

PROFESSIONAL (NON-ACADEMIC) ACTIVITY

- 2013 – 2017 **Mechanical Engineer at Building Infrastructures S.A.** concerning the design of the electromechanical facilities/systems in public buildings and supervision of projects construction.
- 2012 – 2013 **Freelance Mechanical Engineer.** Completion of the following projects:
 - "*Construction of the river bridge in Neapoli, Peloponissos*", design of the electromechanical systems and budget estimation, assigned by ENCODIA Consulting Engineers LTD.
 - "*Land planning recast of the roadway and public spaces of the village Lygourio, Peloponissos*", design of the electromechanical systems and budget estimation, assigned by ENCODIA Consulting Engineers LTD.
 - "*Redesigning and rebuilding of the Utility Institution for children & families in Athens*", mechanical installation design, assigned by the company LID CONSTRUCTION.
 - "*Design of alternative heating system with heat-pumps for residence buildings*", assigned by the company NEW PLANNERS.
 - Budget estimation of the project: "*Public Wastewater System of the Municipal Sections Assos - Lechaiou and Vochas, Peloponissos*", assigned by ENCODIA Consulting Engineers LTD.
 - "*49th Primary School and 84th Kindergarten of Athens*", design of the electromechanical systems, assigned by SBO. S.A.
 - "*New bungalow with basement and swimming pool in Eretria*", design of the electromechanical systems and supervision, in cooperation with the architecture office ARCHETYPO.
 - "*Building of a new building section for the Primary School (12 classes) in Asclepion Epidaurus, Peloponissos*", design of the electromechanical systems and budget estimation, assigned by ENCODIA Consulting Engineers LTD.
- 07/2007 – 10/2011 **Mechanical Engineer at the School Building Organization (SBO S.A.)** concerning the design of the electromechanical facilities/systems in buildings of tertiary section (Heating, Ventilation & Air Conditioning systems, Fan-coils, Electrical network system, Photovoltaic systems, Energy-saved systems, Water supply system, Plumbing & Biological wastewater treatment, Rainwater recycling and irrigation, Solar system for hot water, Lighting protection and fire protection systems, Bioclimatic applications, Energy Performance of Buildings Regulations). Indicative projects:

- *3rd Secondary School and 3rd High School of Filadelfia, Attica*
 - *13th Kindergarten and 10th Primary School in Stayroupoli, Thessaloniki*
 - *Multi-purpose Usage Building and Gymnasium in the 1st primary school in Thessaloniki*
 - *Multi-purpose Usage Building in the 1st primary school of Sximatari, Attica*
 - *Primary school (day school) at Markopoulo, Attica (9 classes)*
 - *All day Kindergarten, all day Primary School (12 classes) & all day Secondary School (12 classes) in Pikermi, Attica*
 - *Experimental secondary school in Tripoli, Peloponnesus*
 - *Upgrade of the electromechanical facilities in 8 schools in the region of Rodopi, North Greece*
- 10/2004 – 11/2006 **Mechanical Engineer in Private Technical Company** in the design of mechanical systems for residence buildings.

PARTICIPATION IN PROFESSIONAL SEMINARS

- Seminar “Near Zero Energy Buildings (nZEB) at Countries of South Europe”. Duration 50 hours. “Intelligence Energy Europe Program”. Participating countries: Greece, Cyprus, Italy, Portugal. Awarded the certificate of nZEB Trainer. 01/2016.
 - Seminar “Fire Protection Systems compliant with the current European and International Standards”. Duration 10 hours. Organized by Engineering Intelligence. 12/2015.
 - Seminar “Inspection in Electrical Installation compliant with KEHE and HD384 standards”. Duration 10 hours. Organized by KAFKAS Institute. 04/2015.
 - Seminar on “Quality Management (Standardization/Conformity/Metrology)”. Organized by Technical Chamber of Greece. Duration 24 hours. 04/2013.
 - Seminar on “*Energy Buildings Inspectors B course*” in conformity with the Training and Testing Procedure for Energy Inspectors. Organized by Technical Chamber of Greece. Duration 60 hours. 07/2012.
 - Two-day seminar on “*Autonomous Systems I: Construction of Photovoltaic Modules*”. Organized by the technical laboratory NeaGuinea. 11/2011.
 - Educational workshop on “*Air Conditioning*”. Organized by LG Electronics Hellas. 02/2011.
 - Training program on “*Building Energy Study - Application to School Buildings*”. Organized by Technical Chamber of Greece. Duration 20 hours. 11/2010.
 - Seminar on “*Energy in Social Housing Renovation - Energy Interventions on the E/M Installations*”. Organized by the Center for Renewable Energy & the Housing Organization. Duration 8 hours. 12/2007.
- Seminar on “*Management Information Systems in Production. Architecture ARIS* ». Organized by National Technical University of Athens - Department of Industrial Management and Operational Research. Duration 8 hours. 07/2004.

PARTICIPATION IN COMPETITIONS

- Participation in the architectural competition “Landscaping of the Historical Monument Eptapyrgio in Thessaloniki – Greece” that was proclaimed the Ministry of Environment, Energy and Climate. November 2012. Consortium: I. Kouloukouris, Th. Papatomas, P. Nakou, A. Giannopoulos, S. Dimitrellou.
- Participation in the international architectural competition “Innovative Bioclimatic European School Complex in Crete – Greece”, proclaimed by the Organization of School Buildings in collaboration

with the International Union of Architects (UIA). October 2012. Consortium: B. Krousoubou, Ch. Liantinioti, S. Dimitrellou.

OTHER KNOWLEDGE

COMPUTER SOFTWARE

- CAD/CAM/CAE (Solidworks, Fusion360, Pro-Engineer, AutoCAD Mechanical, Inventor, Rhinoceros)
- Mechanical design (Matlab, Ansys Structural Mechanics/Fluid Dynamics, Origin)
- Electro-mechanical design (4M Fine 10NG, Adapt/Fcalc, GCAD NG, KENAK, AutoCAD)

MACHINE HANDLING

- Conventional and CNC machines (turn Maximat V13, CNC milling machine Bridgeport series II, turn AJAX CNC, column drill, grinding machine, sand casting equipment) of the “Conventional and CNC machines Laboratory” of the Department of Naval Architecture of University of West Attica.
- 3D printer Ultimaker S5 (FDM technology) of the “Conventional and CNC machines Laboratory” of the Department of Naval Architecture of University of West Attica.
- Laser PRC3500 CO₂ for metal cutting with ALPHACAM software and Unidex 600 MMI controller of the “Industrial Informatics and Manufacturing Systems Laboratory” of University of Sussex.
- Rapid Prototyping machine LOM HELISYS 1015 of the “Rapid Prototyping and Reverse Engineering Laboratory” of NTUA.
- Coordinate Measuring Machine – CMM - DEA/ Brown & Sharpe/ Mistral/ Renishaw Head of the “Rapid Prototyping and Reverse Engineering Laboratory” of NTUA.

FOREIGN LANGUAGES

- English Language (State Certificate of Language Proficiency - Adequacy and Teaching License)
- Spanish Language (Basic)