SPYROS A. KARAMANOS, Ph.D.

Professor of Mechanical Engineering
Vice Rector of International Relations, Outreach & Lifelong Education

General and Contact Information

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Languages

Fluent in English, French and Greek.

Specialization and Research Interests

Structural Mechanics, Numerical Methods & Finite Elements, Design & Analysis of Steel Structures, Stability & Buckling, Analysis of Plates & Shells, Inelastic Behavior of Materials, Pipelines and Industrial Structures, Fatigue of Welded Components, Earthquake Engineering.

Current Positions

2014 - present	Professor of Mechanical Engineering, University of Thessaly, Volos, Greece
2023 - present	Vice Rector of International Relations, Outreach & Lifelong Education, University of Thessaly, Volos, Greece
2019 - present	Honorary Viciting Professor, School of Engineering, The University of Edinburgh, UK

Education

1993	Ph.D. in Structural Mechanics, Department of Civil Engineering, The University of Texas at Austin, USA.
1991	Master of Science in Engineering (M.Sc.) in Structural Engineering, Department of Civil Engineering, The University of Texas at Austin, USA.
1989	Diploma (5-year degree) in Civil Engineering, National Technical University of Athens, Greece (Highest Honors, 1st out of 350 students, GPA=9.58/10.0).

Academic & Professional Experience

10/2014 – present	Professor, Department of Mechanical Engineering, University of Thessaly, Volos, Greece.
07/2023 - present	Vice Rector of International Relations, Outreach & Lifelong Education, University of Thessaly, Volos, Greece
09/2020 – 06/2022	Chairman of the Department of Mechanical Engineering, University of Thessaly, Volos, Greece.
08/2016 – 08/2019	Professor and Chair of Structural Engineering, School of Engineering, The University of Edinburgh, Scotland, UK.
08/2009 – 10/2014	Associate Professor, Department of Mechanical Engineering, University of Thessaly, Volos, Greece.
05/2003 – 08/2009	Assistant Professor, Department of Mechanical Engineering, University of Thessaly, Volos, Greece.
05/1999 – 05/2003	Lecturer, Dept. of Mechanical Engineering, University of Thessaly, Volos, Greece.
10/1996 - 05/1999	Structural Design Engineer, EGNATIA ODOS AE., Thessaloniki, Greece.
01/1996 - 10/1996	Post-Doctoral Fellow, *Steel Structures Laboratory, Faculty of Civil Engineering,* Delft University of Technology, The Netherlands.
01/1994 - 12/1995	Military Service (Mandatory), Naval Works Department, Hellenic Navy General Staff - duration: 23 months.
09/1993 - 01/1994	Graduate Teaching Assistant in Steel Structures & Structural Analysis, *Department of Civil Engineering*, The Univ. of Texas at Austin, USA.

09/1991 - 09/1993	Graduate Research Assistant, Dept. of Civil Engineering, The Univ. of Texas at Austin, *Sponsored by Shell Oil Company,* Houston, Texas, USA.
09/1989 - 05/1991	Graduate Research Assistant, Dept. of Civil Engineering, The Univ. of Texas at Austin, *Sponsored by the Offshore Technology Research Center (OTRC)*, Austin, Texas, USA.
01/1990 – present	Professional Civil Engineer in Greece, member of Technical Chamber of Greece.

Administrative positions and experience

At the University of Thessaly (1999-present):

- Chairman of the Department of Mechanical Engineering (2020-2022).
- Vice Chairman of the Department of Mechanical Engineering.
- Director of Graduate Studies in Energy Systems (2015-2016) and (2022-present).
- Vice Chair, Board for Research & Innovation Excellence (DEKA) (2020-present); Vice Chair of DEKA (2022-present).
- Scientific Responsible for the Technology Transfer Office (2021-present)
- Director: Section of Mechanics, Materials and Manufacturing, Department of Mechanical Engineering (2009-2010, 2013-2014, 2022-2023).
- Member of the Technical Council of the University of Thessaly (2014-2017).
- Member in numerous departmental committees for student affairs, building maintenance etc.

At Egnatia Odos A.E., Thessaloniki, Greece (1996-1999): Responsible for the development, evaluationand award of numerous contracts for highway/bridge engineering design and construction.

US Patent

Keil, B. D. and Karamanos, S. A. (2020), SEISMIC PIPE JOINT, US Patent Provisional Application No. 62/884,638; May 1, 2020.

Books

Karamanos, S. A., Gresnigt, A. M., Dijkstra, G. J. (2021), *Geohazards and Pipelines, State-of-the-art design using experimental, numerical and analytical methodologies*, Springer Nature, Cham, Switzerland, 208 pages, book website (ISBN: ISBN: 978-3-030-49891-7).

Karamanos, S. A. (2023), Structural Mechanics and Design of Metal Pipes, Elsevier, Amsterdam, The Netherlands, 512 pages, book website (ISBN: 9780323886635).

Administrative positions and experience

At the University of Thessaly (1999-present):

- Chairman of the Department of Mechanical Engineering (2020-2022).
- Vice Chairman of the Department of Mechanical Engineering.
- Director of Graduate Studies in Energy Systems (2015-2016) and (2022-present).
- Vice Chair, Board for Research & Innovation Excellence (DEKA) (2020-present); Vice Chair of DEKA (2022-present).
- Scientific Responsible for the Technology Transfer Office (2021-present)
- Director: Section of Mechanics, Materials and Manufacturing, Department of Mechanical Engineering (2009-2010, 2013-2014, 2022-2023).
- Member of the Technical Council of the University of Thessaly (2014-2017).
- Member in numerous departmental committees for student affairs, building maintenance etc.

At Egnatia Odos A.E., Thessaloniki, Greece (1996-1999): Responsible for the development, evaluationand award of numerous contracts for highway/bridge engineering design and construction.

Editor & Assoc. Editor in Peer-Review Journals

ASME Journal of Pressure Vessel Technology

- Editor in Chief (2023 – present)
- Associate Editor (2008 – 2015)

ASCE Journal of Pipeline Systems, Engineering & Practice

- Associate Editor (2009 – 2021)

Editorial Board Member

International Journal of Steel Structures, Springer (2012 – present)

Soil Dynamics and Earthquake Engineering (2019 – present)

International Seminar and Workshop Organizer

Symposium and Workshop: "Geohazards and Pipelines; Safety of Buried Steel Pipelines under Ground-Induced Actions", [principal organizer] co-organized by BIG and GIPIPE consortium, Delft, The Netherlands, June 23-24, 2014.

Workshop: "Structural steel solutions in earthquake-prone areas; Design & Retrofitting" [principal organizer], organized by the University of Thessaly and Shelter S.A. in the course of RFCS STEEL-EARTH dissemination project, Volos, Greece, December 04, 2015.

Workshop: "Natural Hazards and Pipeline Infrastructure" [principal organizer with Costas Papazachos], organized in the ICONHIC 2019, Conference, Chania, Crete, Greece, June 24-26, 2019.

Honors & Awards

09/1984 — **Ranked First (1st)** in the Nationwide General University Entrance Examination – Department of Civil Engineering, NTU Athens.

07/1989 — **First Honor Graduate** (1st out of 350 students); GPA=9.58/10.0

1985 - 1989 — **Fifteen (15) Awards and Merit-Based Scholarships** from the National Technical University, the National Scholarship Foundation of Greece, and the Technical Chamber of Greece for excellent academic performance

1989 - 1993 — Full Academic **Merit-Based Assistantship** and two **Merit-Based Departmental Fellowships** for excellent academic performance, Dept. of Civil Engineering, The University of Texas, Austin, USA.

2004, 2005 — Awards from the Hellenic Society of Theoretical & Applied Mechanics and the Greek Society of Computational Mechanics, for excellent theses of his students.

2006 — **Best Paper Award 2006 – Pipeline Technology Symposium** for paper OMAE2006-92208, Andreadakis, K. P., and Karamanos S. A., "Pipe Response Under Concentrated Lateral Loads and External Pressure.", *Offshore Mechanics and Arctic Engineering Conference*, American Society of Mechanical Engineering, ASME, Hamburg, Germany, June 2006.

2007 — **Sam Y. Zamrik Literature Award 2006, American Society of Mechanical Engineering, Pressure Vessels & Piping Division** – for paper Karamanos, S. A., Tsouvalas, D. and Gresnigt, A. M., "Ultimate Bending Capacity and Buckling of Pressurized 90 deg Steel Elbows.", *Journal of Pressure Vessel Technology*, ASME, Vol. 128, No. 3, pp. 348-356, August 2006.

2010 — **Outstanding Technical Paper Award from Design & Analysis Committee (2009), American Society of Mechanical Engineering, Pressure Vessels & Piping Division** – for paper Sotiria Houliara and Spyros A. Karamanos, "Buckling of Thin-Walled Long Steel

Cylinders Under Bending.", *Pressure Vessels & Piping Conference***,** American Society of Mechanical Engineering, ASME, Prague, Czech Republic, July 2009.

2012 **G. E. Otto Widera Literature Award 2011, American Society of Mechanical Engineering, Pressure Vessels & Piping Division** – for paper Karamanos, S. A., and Vasilikis, D., "Buckling Design of Confined Steel Cylinders Under External Pressure.", *Journal of Pressure Vessel Technology,* ASME*,* Vol. 133, No.1, Article Number: 011205, February 2011.

2013 **Invited Paper in Special Issue on Pressure Vessel Technology (2013), American Society of Mechanical Engineering,** Joint Issue of *Applied Mechanics Reviews* and *J. Pressure Vessel Technology,* for paper: Vasilikis, D. and Karamanos, S. A., "On the Mechanics of Confined Steel Cylinders Under External Pressure.", *Applied Mechanics Reviews,* ASME*,* Vol. 66, Article No.: 010801, January 2014.

Awards of his students

2004 Charis Eleftheriadis, 3rd Award of Competition for the Best Diploma Thesis in Theoretical & Applied Mechanics in Greece for 2001-2004. Awarded by the Hellenic Society of Theoretical & Applied Mechanics (HSTAM).

2005 Manolis A. Platyrrachos, 2nd Award of John Argyris Competition for the Best Diploma Thesis in Computational Mechanics for 2002-2005. Awarded by the Greek Association for Computational Mechanics (GRACM).

2009 Daniel Vasilikis, 3rd Award Student Paper Competition, ASME Pressure Vessels and Piping Conference (PVP), Prague, Czech Rep., July 2009, for paper: Vasilikis, D., and Karamanos, S. A., "Buckling Design of Confined Steel Cylinders Under External Pressure.", *Pressure Vessel and Piping Conference*, ASME, PVP2009-77216, Prague, Czech Rep., July 2009.

2009 Maria Vathi, 2nd Award of Competition for the Best Diploma Thesis in Steel Structures for 2005-2008. Awarded by the Greek Metal Structures Research Society (MSRS).

2013 G. E. Varelis, 3rd Award Student Paper Competition, ASME Pressure Vessels and Piping Conference (PVP), Paris, France, July 2013, for paper: Varelis, G. E. and Karamanos, S. A., "Buckling of Steel Cylinders Under Cyclic Bending in the Inelastic Range.", *Pressure Vessel and Piping Conference*, ASME, PVP2013-98159, Paris, France, July 2013.

2014 Aglaia E. Pournara, Student Competition Finalist with Distinction, International Pipeline Conference, IPC 2014, for paper: Pournara, A. E., Karamanos, S. A., Papatheocharis, T., Perdikaris, P. C., "Structural Integrity of Steel Hydrocarbon Pipelines with Local Wall Distortions.", *International Pipeline Conference*, IPC2014-33210, Calgary, Alberta, Canada, September 2014

2016 Aglaia E. Pournara, OMAE Subrata Chakrabarti Young Professional recipient [OOAE Award's Committee] for presentation and paper: Pournara, A. E., Papatheocharis, T., Karamanos, S. A., Perdikaris, P. C., "Structural Integrity of Buckled Steel Pipes.", *Offshore Mechanics and Arctic Engineering Conference*, ASME, OMAE2015-41386, St. John's, NL, Canada, June 2015.

Professional and Scientific Societies

- Chairman (2011-2013) and Member (2004 – present) of Seismic Engineering Committee, Pressure Vessels & Piping Division, ASME.
- Technical Program Representative, Seismic Engineering Track, Pressure Vessels & Piping Conference, ASME (2008 and 2009).
- Member of Offshore Pipelines Committee, Offshore Mechanics and Arctic Engineering Division, ASME (2005 – present).
- Member of Flexible Steel Pipe Committee, Pipeline Div., ASCE (2004 – 2009).

- Member of Stability Committee, Engineering Mechanics Div., ASCE (2005 – 2015).
- Secretary, Greek Association for Computational Mechanics (2005 – 2009).
- Member of ECCS, TWG 8.4 Stability of Shells (2004 – present). Secretary of ECCS, TWG 8.4 (2008 – present).
- Member of ASME, ASCE, Hellenic Society of Th. & Appl. Mechanics, Metal Structures Research Society, Greek Association for Computational Mechanics

Teaching Experience

University of Thessaly

(2000 – 2016) *Mechanics - Statics* (Undergraduate course – 2nd semester)

(1999 – present) *Finite Elements* (Undergraduate course – 6th semester)

(1999 – present) *Structural Mechanics* (Undergraduate elective course – 9th semester)

(1999 – 2018) *Advanced Finite Element Methods* (Post-Grad course)

(2000 – 2018) *Nonlinear Structural Mechanics - Stability* (Post-Grad course)

(2007 – 2008) *Continuum Mechanics* (Post-Grad course in the Dept. of Civil Engineering)

(2014 – 2018) ***Behavior and Design of Hydrocarbon Pipelines*** (Post-Graduate course)

(2019 – present) ***Structural Design of Energy Infrastructure Systems*** (Post-Graduate course)

(2018 – present) ***Structural Behavior & Design of Marine Pipelines*** (Post-Graduate course) NTU Athens.

The University of Edinburgh

(2016 – 2019) *Finite Elements in Solids and Structures 4* (Undergraduate course – 4th year)

(2016 – 2019) *Structural Mechanics 2B* (Undergraduate course – 2nd year)

Ten (10) Representative Recent Publications [2020 – present]

[1] Varelis, G. E., Papatheocharis, T., **Karamanos, S. A.**, Perdikaris, P. C., "Structural behavior and design of high-strength steel welded tubular connections under extreme loading", *Marine Structures*, Vol. 71, pp. 102701, May 2020 DOI.

[2] Papatheocharis, T., Sarvanis, G. C., Perdikaris, P. C., **Karamanos, S. A.**, Zervaki, A. D., "Fatigue resistance of welded steel tubular X-joints", *Marine Structures*, Vol. 74, Article 102809, November 2020 DOI.

[3] Sarvanis, G. C., Chatzopoulou, G., Fappas, D., **Karamanos, S. A.**, Keil, B. D., Lucier, G., Gobler, F., Mielke, R. D., "Bending Response of Lap Welded Steel Pipeline Joints", *Thin-Walled Structures*, Vol. 157, Article 107065, December 2020 DOI.

[4] Chatzopoulou, G. and **Karamanos, S. A.**, "Numerical Simulation of the Mechanical Behaviour of Steel Pipe Bends Under Strong Cyclic Loading", *International Journal of Pressure Vessels & Piping*, Vol. 188, Article 104239, December 2020 DOI.

[5] Bakalis, K. and **Karamanos, S. A.**, "Uplift Mechanics of Unanchored Liquid Storage Tanks Subjected to Lateral Earthquake Loading", *Thin-Walled Structures*, Vol. 158, Article 107145, January 2021 DOI.

[6] Chatziioannou, K., **Karamanos, S. A.**, Huang, Y., "Coupled Numerical Simulation of Low-Cycle Fatigue Damage in Metal Components", *Engineering Structures*, Engineering Structures, Vol. 229, Article 111536 February 2021 DOI.

[7] Chatzopoulou, G. and **Karamanos, S. A.** (2021), "Numerical Implementation of Bounding-Surface Model for Simulating Cyclic Inelastic Response of Metal Piping Components", *Finite Elements in Analysis & Design*, Vol. 185, pp. 103493 DOI.

[8] Gavriilidis, I. and **Karamanos, S. A.** (2022), "Structural response of steel lined pipes under cyclic bending", *International Journal of Solids and Structures*, Vol. 234-235, pp. 111245 DOI.

[9] Antoniou, K., Stamou, A. G., **Karamanos, S. A.**, Palagas, C., Tazedakis, A., Dourdounis, E., "Finite element modeling of the JCO-E line pipe fabrication process; material properties and collapse pressure prediction", *Thin-Walled Structures*, Vol. 192, article 111120, November 2023 DOI.

[10] Gavriilidis, I., Stamou, A. G., Palagas, C., Dourdounis, E., Voudouris, N., Tazedakis, A., **Karamanos, S. A.**, "Heat treatment effects on collapse of JCO-E steel pipes under external pressure: experiments and numerical predictions", *Marine Structures*, Vol. 93, article 103536, January 2024 DOI.

Previous Research Projects

(1988-1992) *Structural Integrity of Offshore Pipelines*. Sponsor: Offshore Technology Research Center (OTRC) – Texas, USA. Partners: The University of Texas at Austin, USA, Texas A&M University, USA [*participant - researcher*].

(1991-1993) *Stability of Tubes Under External Pressure and Structural Loads.* Sponsor: Shell Oil Company, Houston, Texas, USA. Partners: The University of Texas at Austin, USA [*participant - researcher*].

(1995-1996) *Fatigue Design Guide for Circular and Rectangular Hollow Section Multiplanar Joints*. Sponsor: European Convention of Steel and Coal (ECSC). Partners: Delft University of Technology, The Netherlands, University of Karlsruhe, Germany, TNO Bouw, The Netherlands [*participant - researcher*].

(2001-2003) *Development of Design Guidelines for the Seismic Design of Industrial Equipment,* Sponsor: Greek Organization for Earthquake Planning and Protection. Partners: University of Thessaly, Phosphoric Fertilizers Industry, Thessaloniki, Greece [*Scientific Responsible for U. of Thessaly*].

(2005-2008) FATHOMS: *Fatigue behavior of high strength steels welded joints in offshore and marine systems*, Sponsor: European Commission, project RFSR-CT-2005-00042, Partners: CSM, Italy, Corus, UK, ISQ, Portugal, SZMF, Germany, Univ. of Thessaly [*participant - senior researcher*].

(2007-2010) OPUS: *Optimizing the seismic performance of steel and steel-concrete structures by standardizing materials quality control*, Sponsor: European Commission, project RFSR-CT-2007-00039, Partners: RIVA Acciaio spa, Italy, University of Liege, Belgium, Technical University of Aachen, Germany, University of Thessaly, Arcelor Profil Luxemburg SA, Luxemburg, INSA de Rennes, France, University of Pisa, Italy [*Scientific Responsible for U. of Thessaly*].

(2007-2010) PRECASTEEL: *Prefabricated steel structures for low-rise buildings in seismic areas*, Sponsor: European Commission, project RFSR-CT-2007-00038, Partners: ILVA SpA, Italy, University of Camerino, Italy, Technical University of Aachen, Germany, University of Thessaly, University of Pisa, Italy, University of Navarra, Spain, Ferriere Nord, Italy, Shelter SA, Greece, ISQ, Portugal, VTT Technical Research Centre, Finland, OCAM s.r.l., Italy [*Scientific Responsible for U. of Thessaly*].

(2007-2010) STEELRETRO: *Steel solutions for seismic retrofit and upgrade of existing constructions*, Sponsor: European Commission, project RFSR-CT-2007-00050, Partners: RIVA Acciaio SpA, Italy, CERI University of Rome, Italy, Technical University of Aachen, Germany, University of Thessaly, Arcelor Profil Luxembourg SA, Luxemburg, Shelter SA, Greece, ISQ, Portugal, University of Pisa, Italy, Polytechnic University of Timosoara, Romania , Region of Tuscany, Italy, VTT Technical Research Centre, Finland [*Scientific Responsible for U. of Thessaly*].

(2008-2011) HITUBES: *Design and Integrity Assessment of High Strength Tubular Structures for Extreme Loading Conditions*, Sponsor: European Commission, project RFSR-CT-2008-00037, Partners: University of Trento, Centro Sviluppo Materialli, ISQ, Fundacion ITMA, KIMAB AB, University of Liege, University of Thessaly, Stahlbau Pichler [*Scientific Responsible for U. of Thessaly*].

(2008-2011) ATTEL: *Performance-based approaches for high strength tubular columns and connections under earthquake and fire loadings* Sponsor: European Commission, project RFSR-CT-2008-00035, Partners: U. Trento, Centro Sviluppo Materialli, U. Liege, U. Thessaly, Stahlbau Pichler [*Scientific Responsible for U. of Thessaly*].

(2009-2012) INDUSE: *Structural safety of industrial steel tanks, pressure vessels and piping systems under seismic loading,* Sponsor: European Commission, project RFSR-CT-2009-00022, (www.mie.uth.gr/induse), Partners: Univ. of Thessaly, CSM, Univ. of Trento, *Delft University of Technology*, RWTH Aachen, EBETAM AE, TechniPetroL Hellas SA [**Program Coordinator** & *Scientific Responsible for U. Thessaly*].

(2010-2013) INNO-HYCO*: Innovative hybrid and composite steel-concrete structural solutions for building in seismic area,* Sponsor: European Commission, project RFSR-CT-2010-00025, Partners: University of Camerino, Italy, University of Liege, Belgium, Technical University of Aachen, Germany, Pisa Consortium Research, Italy, Shelter SA, Greece, Univ. of Thessaly (subcontractor of Shelter SA) [*Scientific Responsible for U. Thessaly*].

(2010-2014) *Structural integrity of steel oil & gas pipelines with local wall distortions,* Sponsor: Ministry of Education, program HRAKLEITOS – Funding of PhD dissertation research, awarded to Aglaia E. Pournara - PhD candidate.

(2011-2014) GIPIPE: *Safety of buried steel pipelines under ground-induced deformations,* Sponsor: European Commission, project RFSR-CT-2011-00027 (www.mie.uth.gr/gipipe), Partners: Univ. of Thessaly, CSM, TU Delft, NTU Athens, Corinth PipeWorks SA, Tebodin BV [**Program Coordinator** *& Scientific Responsible for U. of Thessaly*].

(2011-2014) COMBITUBE: *Bending Resistance of Steel Tubes in CombiWalls,* Sponsor: European Commission, project RFSR-CT-2011-00034, Partners: *Delft University of Technology*, Univ. of Thessaly, Univ. of Edinburgh, BAM Infraconsult BV, Arcelor Mittal, Karlsruhe Institute of Technology [*Scientific Responsible for U. of Thessaly*].

(2011-2014) ULCF: *Ultra low cycle fatigue of steel under cyclic high-strain loading conditions,* Sponsor: European Commission, project RFSR-CT-2011-00029, Partners: Univ. of Porto, Univ. of Thessaly, CSM, CIMNE, RWTH Aachen, SZMF [*Scientific Responsible for U. of Thessaly*].

(2012-2015) RASOR: *Risk Assessment for the Seismic Protection of Industrial Facilities,* Sponsor: General Secretariat of Research & Development, Athens, Greece, program THALES, Partners: NTUA Univ. of Thessaly, ITSAK, Univ. of Patras [*Scientific Responsible for U. of Thessaly*].

(2012-2015) UPGRADE: *Contemporary Evaluation Methodology of Seismic Vulnerability and Upgrade of Port Facilities*, Sponsor: General Secretariat of Research & Development, Athens, Greece, program THALES, Partners: NTUA, Univ. of Thessaly, Univ. of Thessaloniki [*participant - senior researcher*].

(2013-2016) MATCH: *Material Choice for Seismic Resistant Structures,* Sponsor: European Commission, project RFSR-CT-2013-00024, Partners: RWTH Aachen, Univ. of Thessaly, NTUA, UPisa, Ruuki, ILVA [*Scientific Responsible for U. of Thessaly*].

(2013-2016) SBD-SPIPE: *Strain-based design of spiral-welded pipes for demanding pipeline applications,* Sponsor: European Commission, project RFSR-CT-2013-00025, Partners: CSM, Univ. of Thessaly, SZMF, OCAS, UGhent, Corinth Pipe Works [*Scientific Responsible for U. of Thessaly*].

(2014-2017) INDUSE-2-SAFETY: *Component fragility evaluation and seismic safety assessment of "special risk" petrochemical plants under design-basis and beyond-design-basis accidents,* Sponsor: European Commission, project RFSR-CT-2014-00025, Partners: Univ. of Trento, Univ.

	Roma III, CSM, Univ. of Thessaly, RWTH Aachen, Univ. of Liverpool, CEA, Walter Tosto SpA, IGF MBH [*Scientific Responsible for U. of Thessaly*].
(2015-2018)	JABACO: *Development of Modular Steel Jacket for Offshore Windfarms,* Sponsor: European Commission, project RFSR-CT-2015-00024, Partners: CSM, OCAS, Univ. of Thessaly, Ramboll, NTUA, IDESA [*Scientific Responsible for U. of Thessaly*] http://jabaco.uth.gr/
(2016-2019)	REFOS: *Life-Cycle Assessment of a Renewable Energy Multi-Purpose Floating Offshore System,* Sponsor: European Commission, project NUMBER-709526-REFOS, Partners: NTUA, CSM, Univ. of Thessaly, Europipe, Elliniki Technolomiki-Anemos, IDESA [*Scientific Responsible for U. of Thessaly*] https://refos3.wixsite.com/refos.
(2017-2021)	FASTCOLD: *Fatigue strength of COLD-formed structural steel details,* Sponsor: European Commission, project NUMBER-745982-FASTCOLD, Partners: Fincon Consulting, Univ. of Pisa, RWTH Aachen, Univ. of Potro, University of Burgos, Univ. of Thessaly, SCL, Shelter, Univ. of Genoa, Fritz Schafer, European Racking Federation, [*Scientific Responsible for U. of Thessaly*] https://fastcold-rfcs.com/.
(2020-2023)	HYCAD: *Innovative Steel-Concrete Hybrid Coupled Walls for Buildings in Seismic Areas: Advancements and Design Guideline*, Sponsor: European Commission, project NUMBER-899381-HYCAD, Partners: University of Camerino, Italy, University of Hasselt, Belgium, Technical University of Aachen, Germany, Pittini/Ferriere Nord S.p.A., Italy, OCAM s.r.l., Italy, Shelter SA, Greece, Univ. of Thessaly (subcontractor of Shelter SA) [*Scientific Responsible for U. Thessaly*] https://www.hycad.be/.

Current Research Projects

(2022-2025)	SIRENES: Structural Integrity of Offshore Renewable Energy Platforms, project 3887, Hellenic Foundation for Research and Innovation (ELIDEK), Ministry of Education, Athens, Greece.
(2023-2026)	Structural Integrity of Offshore Steel Pipelines for Natural Gas and Hydrogen Transmission, Hellenic Foundation for Research and Innovation (ELIDEK), Ministry of Education, Athens, Greece – Funding of PhD dissertation research, awarded to Aris G. Stamou - PhD candidate.

Industrial projects

(2002-present)	Involvement in industrial projects for structural analysis, design and assessment of structural systems. Most of the projects include hydrocarbon & water pipelines and storage facilities. Few representative projects at the University of Thessaly are stated below:
(2002)	Waterbedrijf Europoort NV, Rotterdam [*water pipeline assessment in Rotterdam*]
(2006-2009)	Hellenic Petroleum S.A., Athens, Greece [*assessment of tanks & vessels in Elefsina refinery, near Athens*]
(2011-2017)	Shelter S. A., Larisa, Greece [*seismic design of steel structures*]
(2015)	HDR Inc., Portland, OR, USA [*seismic design and resilence of Willamette Water Supply System, Oregon*]
(2014-2015)	E.ON. Technologies GmbH, Duisburg, Germany [*seismic design of Trans Adriatic Pipeline - TAP*]
(2015-2017)	Metallemporiki S.A., Larisa, Greece [*structural strength and design of steel, composite and polyurethane panels*]
(2017-2018)	C&M Engineering S.A., Athens, Greece [*structural performance of buried steel water pipelines subjected to permanent ground deformation in Ptolemais Unit V 660 MW Power Plant*]

(2021) BAM Infraconsult BV, Gouda, The Netherlands [*residual strength of buckled steel tubes*]

(2018-2023) Corinth Pipeworks S.A., Athens, Greece [*modelling of JCO-E pipe manufacturing procedure*]

(2018-2020) Northwest Pipe Co., Vancouver, WA, USA [*seismic design and structural integrity of steel water pipelines*]

(2018-present) Northwest Pipe Co., Vancouver, WA, USA [*structural assessment of steel water pipeline junctions at the TRWD KBR Bypass and structural Integrity of Steel Water Pipes in Back River Waste Water Treatment Plant (Baltimore, MD) and the Segment B Pipeline Project at the West Harris County (Houston, TX)*]

(2021-2022) ETC Field Services, LLC, Dallas, Texas, USA, Expert Witness for Pipeline Structural Integrity.

(2022-2023) ETC Northest Pipeline, LLC, Dallas, Texas, USA, Consultant Expert & Expert Witness for Pipeline Structural Integrity.

Supervision of PhD Dissertations

Completed

[1] Sotiria Houliara, "Computational Techniques in Structural Stability of Thin-Walled Cylindrical Shells", *Department of Mechanical Engineering, University of Thessaly*, March 2008.

[2] Daniel Vasilikis, "Structural Stability of Confined Cylindrical Steel Shells", *Department of Mechanical Engineering, University of Thessaly*, December 2012.

[3] Polynikis Vazouras, "Structural Behavior of Buried Pipelines under Earthquake Action", *Department of Civil Engineering*, *University of Thessaly, co-advising with Prof. P. Dakoulas,* October 2013.

[4] George E. Varelis, "Ultimate Capacity of Steel Structural Members under Strong Cyclic Loading", *Department of Mechanical Engineering, University of Thessaly,* December 2013.

[5] Aglaia E. Pournara, "Structural Integrity of Steel Hydrocarbon Pipelines with Local Wall Distortions", *Department of Mechanical Engineering, University of Thessaly*, July 2015.

[6] Patricia Pappa, "Computational Methods for Shell Buckling in the Plastic Range", *Department of Mechanical Engineering*, *University of Thessaly,* July 2016.

[7] Maria Vathi, "Structural Behavior of Liquid Storage Steel Containers under Strong Dynamic Excitation", *Department of Mechanical Engineering*, *University of Thessaly*, July 2016.

[8] Konstantinos Chatziioannou, "Cyclic Plasticity and Low-Cycle Fatigue of Steel Tubular Components and Joints", *School of Engineering, The University of Edinburgh, co-advising with Dr Yuner Huang*, June 2019.

[9] Giannoula Chatzopoulou, "Numerical Modelling of Steel Tubular Members under Cyclic Loading", *Department of Mechanical Engineering*, *University of Thessaly*, December 2019.

[10] Ilias Gavriilidis, "Mechanical Behavior of Steel Lined Pipes", *School of Engineering, The University of Edinburgh*, *School of Engineering, The University of Edinburgh*, under development, July 2021.

[11] Konstantinos Antoniou, "Effects of JCO Manufacturing Process on the Structural Performance of Offshore Pipelines", *Department of Mechanical Engineering, University of Thessaly*, July 2021.

[12] Apostolos Nasikas, "Structural Instability of Steel Cylinders in the Inelastic Range", *School of Engineering, The University of Edinburgh*, June 2022.

Under development

[1] Gregory C. Sarvanis, "Numerical Simulation of Fatigue Cracking in Steel Components", *Department of Mechanical Engineering, University of Thessaly*, under development, to be completed in July 2024.

[2] Aris G. Stamou, "Structural Integrity of Offshore Steel Pipelines for Natural Gas and Hydrogen Transmission", *Department of Mechanical Engineering, University of Thessaly*, under development, to be completed in 2026.

[3] George T. Plakias, "Multidisciplinary analysis and design of a Floating Offshore Wind Platform", *Department of Mechanical Engineering, University of Thessaly*, under development, to be completed in 2026.

International recognition of research work

- **3525** citations in Scopus (h-index=34). **Excluding self-citations**: **2922** (h-index=30).
- **4845** citations in Goggle Scholar, h-index=39 (**2445** in the last 5 years, h-index=25)
- Several paper awards from ASME (for Spyros Karamanos and his students)

Appointment as **Editor in Chief** in ASME Journal of Pressure Vessel Technology (2023 – present)

Associate Editor in two international scientific journals:

- ASME Journal of Pressure Vessel Technology (2008 – 2015)
- ASCE Journal of Pipeline Systems Engineering & Practice (2009 – 2021)

Methodologies developed and presented in Spyros Karamanos' publications have been adopted by the following standards/manuals:

1. International Institute of Welding – IIW (1999), *Recommended Fatigue Design Procedure for Welded Hollow Section Joints*. IIW, Subcommission XV-E, IIW Doc. XV-E-99-251, Second edition
2. Comité International pour le Développement et l' Etude de la Construction Tubulaire-CIDECT (2000), *Design Guide for Circular and Rectangular Hollow Section Welded Joints Under Fatigue Loading* (authors: Zhao, X-L, Herion, S, Packer, JA, Puthli, RS, Sedlacek, G, Wardenier, J, Weynand, K, van Wingerde, AM, Yeomans, NF) Design Guide, TUV-Verlag, Koln, Germany
3. American Society of Civil Engineers (2011), *Manual of Practice for Steel Penstocks*, ASCE Energy Division, Task Committee on Steel Penstocks, *New York, NY,* Manuals & Reports for Engineering Practice, No. 79.
4. American Society of Civil Engineers (2021), *Manual of Practice for Srismic Design of Buried Pipelines*, ASCE, Technical Committee on Seismic Design of Buried Pipelines, *New York, NY,* Manuals & Reports for Engineering Practice, to be published, 2022.

Spyros Karamanos' work is cited by the following standards/design recommendations:

1. European Committee for Standardization, Eurocode 3: *Design of Steel Structures, PART 4-3: Pipelines*, ENV 1993-4-3, Brussels, 2006.
2. American Society of Civil Engineers, ASCE (1997), *Guidelines for the Design of Double-Layer Grids*, Daniel A. Cuoco, ed., New York, USA. ISBN: 0-7844-0253-1.
3. European Convention for Construction Steelwork, *Buckling of Shells, European Recommendations*. 5th Edition, ECCS publication No. 125, 2008.
4. American Society of Civil Engineers, *Buried Flexible Steel Pipe. Design and Structural Analysis*, ASCE Manuals & Reports for Engineering Practice, No. 119, 2009.
5. American Water Works Association, *M11 Steel Pipe - A Guide for Design and Installation*, Fifth Edition, Denver, Colorado, 2016.

Professional Experience before joining U of Thessaly

1989 - 1996 Engineering Consultant in special design and analysis issues on metal tubular structures, steel pipelines and seismic engineering (TRITON Engineers & Consultants, and A. S. Karamanos & Associates).

Professional and Scientific Societies

- Chairman (2011-2013) and Member (2004 – present) of Seismic Engineering Committee, Pressure Vessels & Piping Division, ASME.
- Member of Offshore Pipelines Committee, Offshore Mechanics and Arctic Engineering Division, ASME (2005 – present).
- Member of Flexible Steel Pipe Committee, Pipeline Div., ASCE (2004 – 2009).
- Member of ECCS, TWG 8.4 Stability of Shells (2004 – present). Secretary of ECCS, TWG 8.4 (2008 – present).
- Member of ASME, ASCE, Hellenic Society of Th. & Appl. Mechanics, Metal Structures Research Society, Greek Association for Computational Mechanics
- Member of Technical Committee on Seismic Pipeline Design, ASCE (2014 – present)

Reviewer in Journals

Annals of Biomedical Engineering
Applied Mathematical Modelling
Applied Ocean Research
Archives of Applied Mechanics
ASCE Journal of Engineering Mechanics
ASCE Journal of Geotechnical and Geoenvironmental Engineering
ASCE Journal of Materials in Civil Engineering
ASCE Journal of Structural Engineering
ASCE Journal of Transportation Engineering
ASCE Journal of Pipeline Systems Engineering and Practice
ASME Journal of Computing and Information Science in Engineering
ASME Journal of Offshore Mechanics & Artcic Engineering
ASME Journal of Pressure Vessel Technology
Bulletin of Earthquake Engineering
Computer Methods in Applied Mechanics & Engineering
Computational Mechanics
Computers and Fluids
Computers and Structures
Engineering Structures
Earthquake Spectra
Earthquake Engineering and Structural Dynamics
Fire Safety Journal
International Journal of Fatigue
International Journal of Nonlinear Mechanics
International Journal of Mechanical Sciences
International Journal of Pavement Engineering
International Journal of Pressure Vessels and Piping
International Journal of Solids and Structures
Journal of Constructional Steel Research
Journal of Applied Mathematics
Journal of Earthquake Engineering
Journal of Fluids and Structures
Journal of Mechanical Engineering Science
Journal of Pipeline Engineering
Journal of Sound and Vibration

Journal of Strain Analysis
Marine Structures
Ocean Engineering
Thin-Walled Structures
Soil Dynamics and Earthquake Engineering
Steel and Composite Structures
Structural Engineering and Mechanics
Structural Engineering International

Member of Scientific Committees in International Conferences

Seismic Engineering Committee, ASME Pressure Vessels and Piping Conference (PVP), since 2004.

Pipeline Technology Committee, ASME International Conference on Offshore Mechanics and Arctic Engineering (OMAE), since 2005.

ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, COMPDYN, since 2007.

GRACM Congress on Computational Mechanics (2002 – present).

Steel Structures National Conference (2010 – present).

SEECCM South-East European Conference on Computational Mechanics, (a) 1st SEECCM Kragujevac, Serbia, 2006; (b) 2nd SEECCM Rhodes, Greece, 2009.