



SPYROS A. KARAMANOS, Ph.D.
Professor, University of Thessaly
Curriculum Vitae and List of Publications

**General and
Contact Information**

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<http://excellence.minedu.gov.gr/listing/483-hydrocarbon-transfer-storage>

Languages

Fluent in English, French and Greek.

**Specialization and
Research Interests**

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

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).

**Academic &
Professional
Experience**

10/2014 – present Professor, Department of Mechanical Engineering, University of Thessaly, Volos, Greece.
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, Department of Mechanical Engineering, University of Thessaly, Volos, Greece.
10/1996 - 05/1999 Design Engineer, EGNATIA ODOS AE., Thessaloniki, Greece (<http://www.egnatia.eu/page/>).
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.*

Associate Editor in Peer-Review Journals	ASME Journal of Pressure Vessel Technology (2008 – 2015) ASCE Journal of Pipeline Systems, Engineering & Practice (2009 – present)
Editorial Board Member	International Journal of Steel Structures, Springer (2012 – present)
International Seminar and Workshop Organizer	Symposium and Workshop: “Geohazards and Pipelines; Safety of Buried Steel Pipelines under Ground-Induced Actions”, co-organized by BIG and GIPIPE consortium, Delft, The Netherlands, June 23-24, 2014 (http://www.gipipe.eu) Workshop: “Structural steel solutions in earthquake-prone areas; Design & Retrofitting”, organized by the University of Thessaly and Shelter S.A. in the course of RFCS STEEL-EARTH dissemination project, Volos, Greece, December 04, 2015.
 Academic 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)
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.", <i>Offshore Mechanics and Arctic Engineering Conference</i> , 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.”, <i>Journal of Pressure Vessel Technology</i> , 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.”, <i>Pressure Vessels & Piping Conference</i> , 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.”, <i>Journal of Pressure Vessel Technology</i> , 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.

Teaching Experience (1999 – present)

Mechanics - Statics (Undergraduate course – 2nd semester) – taught every year since Spring 2001 in the Department of Mechanical Engineering, University of Thessaly.

Finite Elements (Undergraduate course – 6th semester) – taught every year since Spring 2000 in the Department of Mechanical Engineering, University of Thessaly.

Structural Mechanics (Undergraduate course – 9th semester) – taught 5 times since Fall 1999 in the Department of Mechanical Engineering, University of Thessaly.

Advanced Finite Element Methods (Post-Graduate course) – taught every other year since Fall 1999 in the Department of Mechanical Engineering, University of Thessaly.

Nonlinear Structural Mechanics - Stability (Post-Graduate course) – taught every other year since 2000 in the Department of Mechanical Engineering, University of Thessaly.

Continuum Mechanics (Post-Graduate course) – taught in Fall 2006 and 2007 in the Department of Civil Engineering, University of Thessaly.

Structural Behavior and Design of Marine Pipelines (Post-Graduate course) – taught in Fall 2013, 2014 and 2015 in the School of Naval Architecture and Marine Engineering, National Technical University of Athens.

Behavior and Design of Hydrocarbon Pipelines (Post-Graduate course) – new course introduced in Fall 2015, Departments of Mechanical & Civil Engineering, University of Thessaly.

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 Division, ASCE (2004 – 2009).
- Member of Stability Committee, Engineering Mechanics Division, ASCE (2005 – present).
- 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

Member of Scientific Committees in International Conferences

- Seismic Engineering Committee, ASME Pressure Vessels and Piping Conference (PVP), annually, since 2004.
- Pipeline Technology Committee, ASME International Conference on Offshore Mechanics and Arctic Engineering (OMAEE), annually, since 2005.
- ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering (a) COMPDYN 2007, Rethymno, Crete, Greece, 13–16 June 2007, (b) COMPDYN 2009, Rhodes, Greece, June 22-24, 2009, (c) COMPDYN 2013, Kos, Greece, June 12-14, 2013, (b) COMPDYN 2015, Heraklio, Greece, May 25-27, 2015.
- GRACM Congress on Computational Mechanics, (a) 4th GRACM Patras, Greece, 2002 (b) 5th GRACM Limasol, Cyprus, 2005, (c) 6th GRACM Thessaloniki, Greece, 2008, (d) 8th GRACM Volos, Greece.
- SEECCM South-East European Conference on Computational Mechanics, (a) 1st SEECCM Kragujevac, Serbia, 2006 and (b) 2nd SEECCM Rhodes, Greece, 2009.

Administration experience

At the University of Thessaly (1999-present):

- Vice Chairman of the Department of Mechanical Engineering, and Director of Graduate Studies.
- Director of Section of Mechanics, Materials and Manufacturing, Department of Mechanical Engineering (2009-2010 and 2013-2014).
- Member of the Technical Council of the University of Thessaly (2013-present).
- Member in numerous departmental committees for student affairs, building maintenance etc.

At Egnatia Odos A.E., Thessaloniki, Greece (1996-1999):

- Responsible for the development, evaluation and award of numerous contracts for highway/bridge engineering design and construction.

Reviewer in Journals

- Aerospace Science and Technology
- 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 & Arctic 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
- 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
- ISET Journal of Earthquake Technology
- 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

Reviewer in International Conferences

- ASME Pressure Vessels and Piping Conference (PVP), 2005 – present
- ASME International Conference on Offshore Mechanics and Arctic Engineering (OMAE), 2006 – present
- GRACM International Congress on Computational Mechanics, 2005 – present

Other Professional Experience

- 1989 - present Professional Engineer in Greece, member of Technical Chamber of Greece
- 1989 - 1996 Engineering Consultant in special design and analysis issues on metal tubular structures, steel pipelines and seismic engineering (TRITON Engineers & Consultants, A. S. Karamanos & Associates).

Supervision of PhD Dissertations Completed

- Sotiria Houliara, "Computational Techniques in Structural Stability of Thin-Walled Cylindrical Shells", Department of Mechanical Engineering, University of Thessaly, completed, March 2008.
- Daniel Vasilikis, "Structural Stability of Confined Cylindrical Steel Shells", Department of Mechanical Engineering, University of Thessaly, completed December 2012.
- Polynikis Vazouras, "Structural Behavior of Buried Pipelines under Earthquake Action", Department of Civil Engineering, *co-advising with Prof. P. Dakoulas*, University of Thessaly, completed October 2013.
- George E. Varelis, "Ultimate Capacity of Steel Structural Members under Strong Cyclic Loading", Department of Mechanical Engineering, University of Thessaly, completed December 2013.
- Aglaia E. Pournara, "Structural Integrity of Steel Hydrocarbon Pipelines with Local Wall Distortions", Department of Mechanical Engineering, University of Thessaly, completed, July 2015.

Under development

- Maria Vathi, "Structural Behavior of Liquid Storage Steel Containers under Strong Dynamic Excitation", Department of Mechanical Engineering, University of Thessaly, under development, to be completed March 2016.
- Patricia Pappa, "Computational Methods for Shell Buckling in the Plastic Range", Department of Mechanical Engineering, University of Thessaly, under development, to be completed May 2016.
- Giannoula Chatzopoulou, "Numerical Modelling of Steel Tubular Members under Cyclic Loading", Department of Mechanical Engineering, University of Thessaly, under development, to be completed in 2017.
- Gregory Sarvanis, "Structural Instabilities of Shell Structures", Department of Mechanical Engineering, University of Thessaly, under development, to be completed in 2018.

Ten (10) Representative Publications

- [1] **Karamanos, S. A.**, "Bending Instabilities of Elastic Tubes.", *International Journal of Solids & Structures*, Vol. 39, No. 8, pp. 2059-2085, April 2002.
- [2] **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 [**Sam Y. Zamrik Literature Award 2006, American Society of Mechanical Engineering, Pressure Vessels & Piping Division**].
- [3] Patkas, L. A. and **Karamanos, S. A.**, "Variational Solutions of Liquid Sloshing in Horizontal-Cylindrical and Spherical Containers.", *Journal of Engineering Mechanics*, ASCE, Vol. 133, No. 6, pp. 641-655, June 2007.
- [4] Houliara, S. and **Karamanos, S. A.**, "Stability of Long Transversely-Isotropic Elastic Cylinders Under Bending.", *International Journal of Solids and Structures*, Vol. 47, No. 1, pp. 10-24, January 2010.
- [5] Vazouras, P., **Karamanos, S. A.**, and Dakoulas, P., "Finite Element Analysis of Buried Steel Pipelines Under Strike-Slip Fault Displacements", *Soil Dynamics and Earthquake Engineering*, Vol. 30, No. 11, pp. 1361-1376, November 2010.
- [6] Vasilikis, D., and **Karamanos, S. A.**, "Buckling Design of Confined Steel Cylinders Under External Pressure.", *Journal of Pressure Vessel Technology*, ASME, Vol. 133, No.1, Article Number: 011205, February 2011 [**G. E. Otto Widera Literature Award 2011, American Society of Mechanical Engineering, Pressure Vessels & Piping Division**]
- [7] Vasilikis, D. and **Karamanos, S. A.**, "Mechanical Behavior and Wrinkling of Lines Pipes.", *International Journal of Solids and Structures*, Vol. 49, No. 23-24, pp. 3432-3446, November 2012.
- [8] Vasilikis, D. and **Karamanos, S. A.**, "On the Mechanics of Confined Steel Cylinders Under External Pressure.", *Applied Mechanics Reviews*, ASME, **Invited paper**, Vol. 66, Article Number: 010801, January 2014.
- [9] **Karamanos, S. A.**, "Mechanical Behavior of Steel Pipe Bends; An Overview.", *Journal of Pressure Vessel Technology*, ASME, **Invited paper: special issue for the 50th Anniversary of PVPD**, accepted for publication, to appear.
- [10] Pappa, P., and **Karamanos, S. A.** "Non-Associative J_2 Plasticity Model for Finite Element Buckling Analysis of Shells in the Inelastic Range", *Computer Methods in Applied Mechanics and Engineering*, Vol. 300, pp. 689-715, March 2016.

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
- (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

- (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.
- (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 [*Technical Manager for U. of Thessaly*].
- (2003) *Fatigue Failure of Buckled Pipelines*. Sponsor: Waterbedrijf Europoort, Rotterdam, The Netherlands. Partners: Delft University of Technology, University of Thessaly, TNO Building and Construction Research.
- (2005-2008) FATHOMS: *Fatigue behavior of high strength steels welded joints in offshore and marine systems*, Sponsor: European Commission, program RFSR-CT-2005-00042, Partners: CSM, Italy, Corus, UK, ISQ, Portugal, SZMF, Germany, Univ. of Thessaly.
- (2007-2010) OPUS: *Optimizing the seismic performance of steel and steel-concrete structures by standardizing materials quality control*, Sponsor: European Commission, program 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, program 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, program 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, program RFSR-CT-2008-00037, Partners: University of Trento, Centro Sviluppo Materiali, 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, program RFSR-CT-2008-00035, Partners: U. Trento, Centro Sviluppo Materiali, 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, program 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, program RFSR-CT-2010-00025, Partners: University of Camerino, Italy, University of Liege, Belgium, Technical University of Aachen, Germany, University of Thessaly, 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, program RFSR-CT-2011-00027 (www.mie.uth.gr/gipipe), Partners: Univ. of Thessaly, CSM, Delft University of Technology, NTUAthens, 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, program 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, program RFSR-CT-2011-00029, Partners: Univ. of Porto, Univ. of Thessaly, CSM, CIMNE, RWTH Aachen, SZMF [*Scientific Responsible for U. of Thessaly*].

Current Research Projects

- (2012-2015) RASOR: *Risk Assessment for the Seismic Protection of Industrial Facilities*, Sponsor: General Secretariat of Research & Development, Athens, Greece, 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, Partners: NTUA, Univ. of Thessaly, Univ. of Thessaloniki.
- (2013-2016) MATCH: *Material Choice for Seismic Resistant Structures*, Sponsor: European Commission, program 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, program 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, program 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, program RFSR-CT-2015-00024, Partners: CSM, OCAS, Univ. of Thessaly, Ramboll, NTUA, IDESA [*Scientific Responsible for U. of Thessaly*].

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 are stated below:

- Waterbedrijf Europoort NV, Rotterdam [*water pipeline assessment in Rotterdam*] (2002)
- Hellenic Petroleum S. A., Athens, Greece [*assessment of tanks & vessels in Elefsina refinery, near Athens*] (2006-2009)
- HRD Inc., Portland, OR, USA [*seismic design and resilience of Willamette Water Supply System, Oregon*] (2015)
- E.ON. Technologies GmbH, Duisburg, Germany [*seismic design of Trans Adriatic Pipeline - TAP*] (2014-2015)

International recognition of research work

- 529 citations in Scopus - excluding self-citations (h-index=12).
- 4 paper awards from ASME
- Appointment as Associate Editor in two international scientific journals, namely:
 - ASME Journal of Pressure Vessel Technology (2008 – 2015)
 - ASCE Journal of Pipeline Systems Engineering & Practice (2009 – present)
- 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, Subcommittee 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, *Manual of Practice for Steel Penstocks*, ASCE Energy Division, Task Committee on Steel Penstocks, New York, NY, Manuals & Reports for Engineering Practice, No. 79, 2011.
- 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, editor, 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, to appear, 2016.