

Stavros Tsantzalis

Curriculum Vitae

PERSONAL

Name/Surname	Stavros Tsantzalis
Born	Athens, 17 December 1973
Marital Status	Married
Present Status	<ul style="list-style-type: none">• Scientific Associate, Technical Educational Institute of Athens,• Senior Research Associate, Applied Mechanics Laboratory, University of Patras.
Nationality	Hellenic (Greek)

Addresses

Business	<i>Applied Mechanics Laboratory Department of Mechanical Engineering and Aeronautics University of Patras GR-265 00 Patras GREECE tel. +302610 969443 fax +302610 969417 mobile: +30 6932 008503 e-mail address : tsantzal@mech.upatras.gr</i>
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EDUCATION

Graduate Studies in Mechanical and Aeronautical Engineering
Postgraduate studies in Mechanical and Aeronautical Engineering
Surveyor ISO Quality Systems
Surveyor of Elevators
Surveyor of Playgrounds

FOREIGN LANGUAGES

English and French

COMPUTING and PROGRAMMING EXPERIENCE

Operating Systems Dos, Windows 3.11, 98, NT, 2000, Unix

Programming Languages
Scientific Computation packages
Design packages
Finite Elements Analysis
Certificate PC

Microsoft Visual Basic, Fortran 77
MatLab, Origin, Excel, Statistica, Access
Solid-Works
Nastran/PC, NASTAN/Unix, Patran/Unix
Vellum, July 2007

WORK EXPERIENCE

- Practice work as undergraduate Mechanical Engineer at Elefsis Shipyard, NDT department, 1993.
- Practice work as undergraduate Mechanical Engineer at Hellenic Technology Company 1995-1996. STRIDE-HELLAS (EPET 1.5), Installation of Infrastructure for the local Development, Installation and Maintenance of Wind Energy Production System in Combination with Seawater Desalination System (WinD), 1993-1995.
- “4 wheels” Automotive magazine, Editor of technical articles 1993-1997.
- Surveyor ISO quality certified, 2002 – today.
- Surveyor of Elevators, 2003 – today.
- Surveyor of NISSAN service points and paint shops dealers net in Greece, 2003.
- Surveyor of playgrounds, 2004 – σήμερα.
- Surveyor of TOYOTA show rooms, service points and paint shops dealers net in Greece, 2003 – 2004.
- Surveyor of TOYOTA show rooms, service points and paint shops dealers net in Greece, 2007 – 2008.
- Technical Educational Institute of Athens, «Heat Technology», September 2008 – March 2010.
- Technical Educational Institute of Athens, «Internal Combustion Engines», September 2008 – today.
- After Sales Manager, Modena Engineering LTD, January 2008 – 2011.
- Post Doc Researcher, Applied Mechanics Laboratory, University of Patras, 2014-today.

RESEARCH INTERESTS

- Composites materials (friction-wear, characterisation modelling, thermo mechanical characterisation),
- Coating technologies and characterisation, based on nanoindentation test simulation using FEM Analysis
- Design and Analysis and Optimisation of Composites Structures, Composite Roll cage for a Racing car
- Manufacturing processes of Composites Materials, optimisation of motorcycle Helmet
- Biomechanics.

DIPLOMA THESIS

- “*Friction and Wear of 2D Carbon/Carbon Composites*”, 1996.
- “*3-D modelling of nanoindentation experiment on a coating-substrate system*”, 1997.

PHD THESIS

- “*Design and optimization of an intramedullary leg lengthening device motorised by shape memory alloys*”, 2002.

PARTICIPATION in RESEARCH PROGRAMS

1. STRIDE-HELLAS (EPET 1.5), “*Installation and Infrastructure for the local Development, Installation and Maintenance of Wind Energy Production System in Combination with Sea Water Desalination System (WinD)*”, 1993-1995.
2. PAVE program “*Advanced Structure of Composite Wood*”, 1997-1999.
3. EPET II “*Design and Construction of a pilot Composite Bridge*”. 1998-2001.
4. Brite-Euram III program “*(CERCO) CERamic Components for industrial gas turbines*” 1998-2002.
5. PENED program “*Design of a intramedullary leg lengthening device motorised by shape memory alloys*”, 2003-2007.
6. IKYDA, DAAD-IKY Project: “*Controlled Damping of Composite Structures Using Piezoelectric Particulate Fillers*”, 2003-2006.
7. EKVAN: “*Seismic Assessment and Rehabilitation of Concrete Structures*”, 2003-2006.
8. FP 6, EU-STREP: “*Cost Effective and Environmentally Sound Dismantling of Obsolete Vessels*”, ShipDismantl, 2004-2008.
9. *Innovative Action for Plastics & Composites (IAPC)* (2006-2008).
10. Contract No 030907 ADHER, “*Automated Diagnosis for Helicopter Engines and Rotating parts*”, sixth Framework Programme – Contract for Specific Research Project – STREP).
11. FP7 “*Self-Healing Polymers for Concepts on Self-Repaired Aeronautical Composites*”.

PUBLICATIONS

1. A.P. Fortis, E. Panagiotopoulos, V. Kostopoulos **S. Tsantzalis** and Th. Boudouris, “*Strain Development in Carpal Scaphoid for various Wrist Positions: A Cadaveric Study using Strain Gauges*”, Injury, International Journal of the Care of the Injured, Volume 31, 2000, pp. 529-535.
2. A.P. Fortis, Z. Milis, V. Kostopoulos, **S. Tsantzalis**, P. Kormas, N. Tzinieris and Th. Boudouris “*Experimental investigation of the tension band in fractures of the patella*”. Injury Volume 33, Issue 6, July 2002, pp. 489-493.
3. A.P. Fortis, V. Kostopoulos, E. Panagiotopoulos, **S. Tsantzalis** and A. Kokkinos, “*Viscoelastic Properties of Cartilage-Subchondral Bone Complex in Osteoarthritis*”, Journal of Medical Engineering & Technology, 2004, Vol. 28, part 5, pp. 223-226.
4. E. Panagiotopoulos, V. Kostopoulos, **S. Tsantzalis**, A.P. Fortis, A. Doulalas, “*Impact energy absorption by specimens from the upper end of the human femur.*”, Injury, Volume 36, 2005, pp. 613-617
5. **Tsantzalis, S.**, Karapappas, P., Vavouliotis, A., Tsotra, P., Kostopoulos, V., Tanimoto, T., Friedrich, K.: *On the improvement of toughness and fatigue life of CFRP with resin doped with CNF and PZT particles*. Composites Part A, Vol. 38, 2007, pp. 1076-1081.
6. **Tsantzalis, S.**, Karapappas, P., Vavouliotis, A., Tsotra, P., Kostopoulos, V., Friedrich, K.: *Enhancement of the mechanical performance of an epoxy resin and*

- fiber reinforced epoxy resin composites by the introduction of CNF and PZT particles at the microscale*. Composites Part A, Vol. 38, 2007, pp. 1159-1162.
7. V. Kostopoulos, P. Tsotra, A. Vavouliotis, P. Karappapas, **S. Tsantzalis**, and T. Loutas, *Damage Detection during Fatigue Loading of CNF Doped CFRPs via Resistance Measurements and AE*, Solid State Phenomena Vols. 121-123, 2007, pp. 1399-1402.
 8. Kostopoulos, V., Tsotra, P., Karapappas, P., **Tsantzalis, S.**, Vavouliotis, A., Paipetis, A., Friedrich, K., Tanimoto, T.: *Mode I Interlaminar Fracture of CNF or/and PZT Doped CFRPs via acoustic emission monitoring*, Composites Science and Technology, Vol.67, 2007, pp.822-828.
 9. **S. Tsantzalis**, P. Tsotra, P. Karapappas, A. Vavouliotis, N. Fanis, V. Kostopoulos, K. Friedrich, *Influence of carbon nanofibers and piezoelectric particles on the thermomechanical behavior of epoxy mixtures*, Solid State Phenomena Vols. 121-123 (2007) pp. 1419-1422.
 10. P. Karapappas, **S. Tsantzalis**, E. Fiamegou, A. Vavouliotis, K. Dassios, V. Kostopoulos, *Multi-Wall Carbon Nanotubes Chemically Grafted on Reinforcing Carbon Fibres*, Advanced Composites Letters, Volume 17, Issue 3, 2008, pp 103-107.
 11. V. Kostopoulos, P. Karapappas, **S. Tsantzalis**, A. Vavouliotis, P. Tsotra, A. Paipetis, T.H. Loutas, K. Friedrich, *Investigation of the Effect of CNF and PZT Particles on the Interlaminar Fracture Behaviour of CFRP Laminates*, STRAIN, Volume 47, Issue Supplement s1, (2011), pp. e269 -e282.
 12. A. Kotrotsos, A. Vavouliotis, **S. Tsantzalis** and V. Kostopoulos, *Effect of CNT modified matrix of epoxy CFRPs on hydrothermal behaviour of material. Evaluation of water uptake using electrical resistance measurements*, Plastics, Rubber & Composites, Volume 43 Issue: 4, May 2014, pp. 122 - 129.
 13. A. Ampatzoglou, **S. Tsantzalis**, D. E. Mazarakos and V. Kostopoulos, *3D Printed frame for CubeSat applications for LowEarth orbit mission*, International Journal of Computer Aided Engineering and Technology, (2015), (accepted for publication).
 14. V. Kostopoulos, A. Kotrotsos, **S. Tsantzalis**, P. Tsokanas, T. Loutas and A. W. Bosman, *Toughening and healing of continuous fibre reinforced composites by supramolecular polymers*, Composites Science and Technology, (2016), (accepted for publication).

PARTICIPATION in CONFERENCE

1. A. Raptopoulos, G. C. Christopoulos, Y. P. Markopoulos, Y. Z. Pappas, **S. Tsantzalis**, V. Kostopoulos and S. A. Paipetis, *Design Optimization of a Motorcycle Safety Helmet Shell*, First Hellenic Conference on Composite Materials and Structures, Xanthi, Greece, July 1997.
2. **S. Tsantzalis** and V. Kostopoulos, *Friction and Wear of 2D Carbon/Carbon Composites*, 8th International Conference on Mechanics and Technology of Composites Materials, Sofia, Bulgaria, September 1997.
3. A.P.Fortis, Z.Milis, **S. Tsantzalis**, V.Kostopoulos, P.Kormas, N.Tzineris "Experimental investigation of the tension band principle". European conference ESSKA, London, England, September 2000.
4. A.P.Fortis, Z.Milis, A.Varatsos, V.Kostopoulos, **S.Tsantzalis**, O.Peridis, E.Panagiotopoulos. "Meniscal tears in stables knees. A histological and

- biomechanical study*". 10th Congress European Society of Sports Traumatology knee Surgery and Arthroscopy. Rome 23-27 April 2002.
5. **Tsantzalis, S.**, Karapappas, P., Vavouliotis, A., Tsotra, P., Kostopoulos, V., Tanimoto, T., Friedrich, K.: *On the improvement of toughness and fatigue life of CFRP with resin doped with CNF and PZT particles*. DFC-8 and ETDCM-7, University of Sheffield (2005).
 6. **Tsantzalis, S.**, Karapappas, P., Vavouliotis, A., Tsotra, P., Kostopoulos, V., Friedrich, K.: *Enhancement of the mechanical performance of an epoxy resin and fiber reinforced epoxy resin composites by the introduction of CNF and PZT particles at the microscale*. DFC-8 and ETDCM-7, University of Sheffield (2005).
 7. P. A. Kokkinos, I. Z. Zarkadis, **S. Tsantzalis**, D. D. Deligianni, *Expression of Cbfa in Human Bone Marrow Derived Osteoblasts Cultured Under Dynamic Conditions on Ti-6Al-4V.*, 7th Annual Meeting of the Hellenic Research Club for Connective Tissue & matrix Biology. Patras 8-9 April 2005.
 8. Kostopoulos, V., Tsotra, P., Vavouliotis, A., Karapappas, P., **Tsantzalis, S.**, Loutas, T.: *Damage Detection during Fatigue Loading of CNF Doped CFRPs via Resistance Measurements and AE*. ChinaNano Conference, Peking, China (2005).
 9. **Tsantzalis, S.**, Tsotra, P., Karapappas, P., Vavouliotis, A., Fanis, N. Kostopoulos, V., Friedrich, K.: *Influence of carbon nanofibers and piezoelectric particles on the thermomechanical behavior of epoxy mixtures*. ChinaNano Conference, Peking, China (2005).
 10. Tsotra, P., **Tsantzalis, S.**, Karapappas, P., Vavouliotis, A., Fanis, N. Kostopoulos, V., Friedrich, K.: *Thermomechanical properties of epoxy doped with carbon nanofibers and piezoelectric particles*. MEDICTA Conference, Thessaloniki, Greece (2005).
 11. Kostopoulos, V., Tsotra, P., Karapappas, P., **Tsantzalis, S.**, Vavouliotis, A., Paipetis, A., Friedrich, K., Tanimoto, T.: *Mode I Interlaminar Fracture of CNF or/and PZT Doped CFRPs*. Carbon Nanotube (CNT)-Polymer Composites International Conference, Hamburg, Germany (2005).
 12. P A Kokkinos, I K Zarakdis, **S Tsantzalis**, D D Deligianni, *Expression of Cbfa1 in Human Bone Marrow Desired Osteoblasts Cultured Under Dynamic Conditions on Ti-6Al-4V*. 19th European Conference on Biomaterials 11-15 September 2005, Sorrento, Italy.
 13. A. Kokkinos, P. Pappas, **S. Tsantzalis**, A. Fortis, K. Galiotis, B. Kostopoulos H. Panagiotopoulos, I. Parthenios, *Design of an Intramedullary Limb Lengthening Device using Shape Memory Alloys.*, 1st Conference of Bioscience, Conference Center, University of Patras.
 14. Kostopoulos, V., Tsotra, P., Vavouliotis, A., Karapappas, P., **Tsantzalis, S.**, Loutas, T. *Nano-modified Fiber Reinforced Composites: A Way Towards The Development Of New Materials For Space Applications*. 5th Round Table on Micro/Nano Technologies for Space, Noordwijk, The Netherlands (2005).
 15. P. A. Kokkinos, I. Z. Zarkadis, **S. Tsantzalis**, D. D. Deligianni, *Expression of Cbfa in Human Bone Marrow Derived Osteoblasts Cultured Under Dynamic Conditions on Ti-6Al-4V.*, 7th Annual Meeting of the Hellenic Research Club for Connective Tissue & matrix Biology. Patras 8-9 April 2005.
 16. **Σ. Τσαντζαλής**, X. Δέρδας, N. Αθανασόπουλος, Κ. Δημόπουλος, Θ. Κοτζακόλιος, Δ. Μαζαράκος, Γ. Μιχαλέλης, Δ. Σικουτρή, Β. Κωστόπουλος *Χρήση τεχνολογιών αιχμής για το σχεδιασμό, την ανάλυση και την κατασκευή*

- ηλεκτροκίνητων αυτοκινήτων, Ημερίδα TEE, Ηλεκτροκίνητα μέσα μεταφοράς στην Ελλάδα · Υφιστάμενη κατάσταση και προοπτικές (12-13 Ιαν., 2006).
17. Tsotra, P., Vavouliotis, A., Karapappas, P., **Tsantzalis, S.**, Kostopoulos, V. *CNT Modification of EP/PANI Blends*. ChemOnTubes, Arcachon, France (2006).
 18. Kostopoulos, V., Tsotra, P., Karapappas, P., Vavouliotis, A., **Tsantzalis, S.**, Friedrich, K. *Carbon Fiber Reinforced Epoxy Resin Composites by the Introduction of Carbon Nano-Fibers (CNF)*. American Institute of Aeronautics and Astronautics (AIAA) Conference. Boston. USA (2006).
 19. P. Tsotra, P. Karapappas, A. Vavouliotis, T. Loutas, A. Miaris, **S. Tsantzalis**, V. Kostopoulos, *On the improvement of fracture behavior of unidirectional CFRP laminates by the use of multiwall CNTs as matrix dopants*, 12th European Conference on Composite Materials, 29th August-1st September 2006, Biarritz, France.
 20. P. Tsotra, A. Vavouliotis, P. Karapappas, N. Nikolaou, **S. Tsantzalis**, A. Paipetis, V. Kostopoulos, *Damage Detection during Cyclic Loading of CNT Doped CFRPs via Resistance Measurements*, 12th European Conference on Composite Materials, 29th August-1st September 2006, Biarritz, France.
 21. P. Tsotra, I. Fotiou, P. Karapappas, A. Vavouliotis, **S. Tsantzalis**, A. Paipetis, V. Kostopoulos, *Passive Vibration Damping Enhancement of CFRPs via the CNT Matrix Doping*, 12th European Conference on Composite Materials, 29th August-1st September 2006, Biarritz, France.
 22. Kostopoulos, V., Tsotra, P., Karapappas, P., Vavouliotis, A., **Tsantzalis, S.**, Fiamegkou E. and Miaris A., *Improved Sensing Properties of Epoxy Resin Polymers and Carbon Reinforced Epoxy Resin Composites by the Introduction of Multi-Wall Carbon Nanotubes*. American Institute of Aeronautics and Astronautics (AIAA) Conference. Hawaii. USA (2007).
 23. **S. Tsantzalis**, E. Panagiotopoulos, V. Kostopoulos, *A smart intramedullary leg lengthening device (nail) using Shape Memory Alloy torsional actuators*, 1^η επιστημονική ημερίδα δικτύου Ερευνητικού δικτύου Βιοτρικών και Βιοτεχνολογικών εφαρμογών, «Βιοτρικές και Βιοτεχνολογικές εφαρμογές με έμφαση στη Φαρμακοστόχευση Ασθενιών και τις εφαρμογές Βιοσυμβατών Υλικών στην Ιατρική», Συνεδριακό κέντρο Πανεπιστημίου Πατρών, αίθουσα I-2, 5 Νοεμβρίου 2010.
 24. E. Fiamegkou, A. Vavouliotis, **S. Tsantzalis** and V. Kostopoulos, *"Investigation of Nano-Doped Adhesives on Al-Al Single Lap Joints. A Numerical Analysis Using Cohesive Zone Model Principle"*, The 5th International Conference on Structural Analysis of Advanced Materials 23 - 26 September 2013, Island of Kos, Greece.
 25. A. Kotrotsos, A. Vavouliotis, **S. Tsantzalis**, V. Kostopoulos, *"The effect of CNTs modified matrix of epoxy CFRPs on the hydrothermal behavior of the material: Evaluation of the water uptaking using electrical resistance measurements."* The 5th International Conference on Structural Analysis of Advanced Materials 23 - 26 September 2013, Island of Kos, Greece.
 26. **S. Tsantzalis**, X. Tsilimigkra, P. Tsokanas, V. Kostopoulos, *"Experimental investigation on Self-healing efficiency of doped Fiber Reinforced Plastics with Thermoplastic micro-Particles"*, A. Kotrotsos, A. Baltopoulos, ICSAAM 2015, The 6th International Conference on Structural Analysis of Advanced Materials 08 - 11 September 2015, Porto, Portugal.
 27. X. Tsilimigkra, A. Baltopoulos, **S. Tsantzalis**, A. Kotrotsos, N. Siakavellas, V. Kostopoulos, *"Strategies on implementing a potential self healing functionality in*

- a composite structure*”, ICSAAM 2015, The 6th International Conference on Structural Analysis of Advanced Materials, 08 - 11 September 2015, Porto, Portugal.
28. A. Kotrotsos, A. Baltopoulos, **S. Tsantzalis**, X. Tsilimigkra, P. Tsokanas, D. H. Turkenburg, H. R. Fischer, V. Kostopoulos “*Experimental investigation on Self-healing efficiency of doped Carbon Fiber Reinforced Plastics with Bis-maleimide based polymers*”, E-MRS FALL MEETING 15 Warsaw - Sept. 15-18.
 29. E. Giannaros, T. Kotzakolios, **S. Tsantzalis**, G. Sotiriadis, V. Kostopoulos *Numerical modeling of dynamic response in fabric materials subjected to impact loading*, 17th European Conference for Composite Materials (ECCM17) Munich 26-30th June 2016 (accepted)
 30. R. Rodriguez, M. Chapartegui, I. Gaztelumendi, S. Florez, X. Tsilimigkra, **S. Tsantzalis**, V. Kostopoulos *Acrylic microcapsules for Self-healing*, 17th European Conference for Composite Materials (ECCM17) Munich 26-30th June 2016 (accepted for oral presentation)
 31. X. Tsilimigkra, **S. Tsantzalis**, G. Sotiriadis, V. Kostopoulos, I. Bond, T. Coope, *Damage development under fatigue loading in open hole composites with vascules serving as self healing reservoirs*, 17th European Conference for Composite Materials (ECCM17) Munich 26-30th June 2016 (accepted for oral presentation)
 32. A. Kotrotsos, **S. Tsantzalis**, A. C. Christopoulos, T. Loutas, V. Kostopoulos, *Impact and CAI tests on doped Carbon Fiber Reinforced Plastics with Bis-Maleimide based polymers. Thermal characterization and Healing Efficiency value*, 17th European Conference for Composite Materials (ECCM17) Munich 26-30th June 2016 (accepted for oral presentation)
 33. C. Kostagiannakopoulou, G. Sotiriadis, **S. Tsantzalis**, V. Kostopoulos, *Impact and compression after impact (CAI) properties of graphene modified polymers*, 17th International Conference on Experimental Mechanics Rhodes, Greece, July 3-7, 2016 (υποβληθείσα)
 34. **S. Tsantzalis**, G. Sotiriadis, C. Kostagiannakopoulou, V. Kostopoulos, *Study on the multifunctionality of Graphene based Nano-reinforced Polymers*, ICEM17 17th International Conference on Experimental Mechanics Rhodes, Greece, July 3-7, 2016 (υποβληθείσα)

PATENTS

- A non-invasive System for human head immobilization in the case of LINAC treatment planning made of Composite materials (OBI 20000100315).
- A truss type bridge structure made of pultruded composite elements (OBI 20010100233).
- A intramedullary leg lengthening device motorised by shape memory alloys (06386035.7)