ΒΙΟΓΡΑΦΙΚΟ ΣΗΜΕΙΩΜΑ

Οκτώβριος 2019

ΝΙΚΟΛΑΟΣ ΑΡΑΒΑΣ

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ΕΚΠΑΙΔΕΥΣΗ

1980−1984 University of Illinois at Urbana-Champaign
Πτυχία: Masters of Science in Theoretical and Applied Mechanics — 1982
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Διδακτορικό in Theoretical and Applied Mechanics — 1984
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1975−1980 Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης
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8/2014−8/2015 Visiting Professor
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Department of Mechanical Engineering and Applied Mechanics

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World Premier International (WPI) Research Center Initiative
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12/2000−12/2001	Πρόεδρος της Προσωρινής Γενικής Συνέλευσης του Τμήματος Πολιτικών Μηχανικών Πανεπιστήμιο Θεσσαλίας
1996−1998	Αντιπρόεδρος της Επιτροπής Ερευνών Πανεπιστήμιο Θεσσαλίας
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1986−1992	Assistant Professor University of Pennsylvania Department of Mechanical Engineering and Applied Mechanics (secondary appointment in the Department of Materials Science and Engineering)
1985	Senior Engineer Hibbitt, Karlsson and Sorensen, Inc. Providence, RI U.S.A.
1982−1984	Research Assistant University of Illinois at Urbana-Champaign Department of Theoretical and Applied Mechanics
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1975−1980	Υποτροφία ΙΚΥ
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ΣΥΓΓΡΑΜΜΑΤΑ

[1] Ν. Αράβας, «Καρτεσιανοί Τανυστές», Πανεπιστημιακές Εκδόσεις Θεσσαλίας, 2005.

[2] Ν. Αράβας, «Μηχανική των Υλικών, Τόμος Πρώτος: Εισαγωγή στη Μηχανική των Υλικών και τη Γραμμική Ελαστικότητα», Εκδόσεις Τζιόλας, Θεσσαλονίκη, 2005.

[3] Ν. Αράβας, «Μηχανική των Υλικών, Τόμος Δεύτερος: Ανάλυση Ελαστικών Δοκών», Πανεπιστημιακές Εκδόσεις Θεσσαλίας, 2008.

ΣΥΜΜΕΤΟΧΗ ΣΕ ΕΠΙΤΡΟΠΕΣ ΕΙΣΤΗΜΟΝΙΚΩΝ ΠΕΡΙΟΔΙΚΩΝ

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ΑΝΑΦΟΡΕΣ ΣΤΟ ΕΠΙΣΤΗΜΟΝΙΚΟ ΕΡΓΟ (CITATIONS)

Περισσότερες από 2200 ετεροαναφορές, *h-index* 25, 30.9 *average citations per article* (όλα στο Science Citation Index (ISI)).

ΔΗΜΟΣΙΕΥΣΕΙΣ ΣΕ ΕΠΙΣΤΗΜΟΝΙΚΑ ΠΕΡΙΟΔΙΚΑ ΜΕ ΚΡΙΤΗ

[1] N. Aravas and R.M. McMeeking, "Finite element analysis of void growth near a blunting crack," *Journal of the Mechanics and Physics of Solids*, Vol. **33**, pp. 25−49, 1985.

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[4] N. Aravas, "The analysis of void growth that leads to central bursts during extrusion," *Journal of the Mechanics and Physics of Solids*, Vol. **34**, pp. 55−79, 1986.

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tional Journal for Numerical Methods in Engineering, Vol. **24**, pp. 1395−1416, 1987.

[6] K-S. Kim and N. Aravas, "Elasto-plastic analysis of the peel test," *International Journal of Solids and Structures*, Vol. **24**, pp. 417−435, 1988.

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tion of isotropic composites", *International Journal of Solids and Structures*, Vol. **87**, pp. 120−138, 2016. [DOI: 10.1016/j.ijsolstr.2016.02.022]

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ΔΗΜΟΣΙΕΥΣΕΙΣ ΣΕ ΠΡΑΚΤΙΚΑ ΕΠΙΣΤΗΜΟΝΙΚΩΝ ΣΥΝΕΔΡΙΩΝ

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Proceedings of the XXIII Congress of the International Society of Biomechanics, Brussels, Belgium, 2011.

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[C44] I. Papadioti, K. Danas, and N. Aravas, "Estimation of the effective yield function of isotropic composites", *EMI International Conference*, Metz, France, 2016.

[C45] N. Aravas, M. Seng, and P. Purohit, "Finite element methods for piezoelectricity and flexoelectricity with fracture mechanics", *14th International Conference on Fracture*, Rhodes, Greece, June 18−23, 2017.

[C46] J. Lian, W. Liu. I. Papadioti, S. Chandran, P. Verleysen, G. Paul, H. Richter, and S. Münstermann, "Integrated material modelling on the crashworthiness for automotive high-strength steel sheets", *14th International Conference on Fracture*, Rhodes, Greece, June 18−23, 2017.

[C47] I. Papadioti, I. Bellas, M-I.T. Tzini, P.I. Christodoulou and N. Aravas, "Non-linear homogenization theories with applications to TRIP steels", *9th GRACM International Congress on Computational Mechanics*, Chania, Greece, June 4 - June 6, 2018.

ΤΕΧΝΙΚΟΣ ΣΥΜΒΟΥΛΟΣ

IBM	Θραύση κεραμικών και μεταλλικών υλικών
BDM (a FORD Aerospace Company)	Κονιομεταλλουργία
Aluminum Company of America (ALCOA)	Μηχανικές κατεργασίες μετάλλων
Χημικές Βιομηχανίες Βορείου Ελλάδος	Μεταλλικές κατασκευές
ΝΙΚ. ΚΙΟΛΕΪΔΗΣ	Μεταλλικές κατασκευές
Αττικό Μετρό ΑΕ	Ανάλυση αστοχιών ηλεκτροφόρου ράγας
PRIME LASER TECHNOLOGY ABEE	Μελέτη σημειακών συγκολλήσεων laser θερμικών απορροφητών
Höganäs AB (Sweeden)	Μοντελοποίησης πυροσυσσωμάτωσης

ΚΡΙΤΗΣ ΣΕ ΕΠΙΣΤΗΜΟΝΙΚΑ ΠΕΡΙΟΔΙΚΑ ΚΑΙ ΕΠΙΣΤΗΜΟΝΙΚΟΥΣ ΟΡΓΑΝΙΣΜΟΥΣ

Acta Mechanica
Acta Metallurgica et Materialia
Composite Structures
Computational Materials Science
Computational Mechanics

Computer Methods and Programs in Biomedicine
Computer Methods in Applied Mechanics and Engineering
Computer Methods in Biomechanics and Biomedical Engineering
Continuum Mechanics and Thermodynamics
European Journal of Mechanics. A/Solids
International Journal of Damage Mechanics
Fatigue and Fracture of Engineering Materials and Structures
International Journal for Numerical Methods in Engineering
International Journal of Computational Engineering Science
International Journal of Engineering Science
International Journal of Fracture
International Journal of Non-Linear Mechanics
International Journal of Solids and Structures
Journal of Adhesion Science and Technology
Journal of Applied Mechanics (ASME)
Journal of Biomedical Materials Research: Part A
Journal of Computing and Information Science in Engineering (ASME)
Journal of Engineering Mechanics (ASCE)
Journal of Manufacturing Science and Engineering (ASME)
Journal of Pressure Vessel Technology (ASME)
Journal of the Mechanics and Physics of Solids
Journal of the Royal Society -- Interface
Materials and Design
Mathematical Problems in Engineering
Meccanica
Mechanics of Materials
Mechanics Research Communications
Metallurgical Transactions
Modelling and Simulation in Materials Science and Engineering
Proceedings of the Royal Society, London
Structural Engineering and Mechanics
The Journal of Adhesion

American Society of Testing and Materials (ASTM)
National Science Foundation (NSF)
U.S. Army Research Office (ARO)
Γενική Γραμματεία Έρευνας και Τεχνολογίας (ΓΓΕΤ)
Υπουργείο Παιδείας

ΕΠΙΣΤΗΜΟΝΙΚΕΣ ΑΝΑΚΟΙΝΩΣΕΙΣ ΣΕ ΣΥΝΕΔΡΙΑ

"Models of ductile rupture," *Tenth U.S. National Conference on Applied Mechanics*, June 1986, University of Texas at Austin, Austin, Texas, USA.

"On the mechanics of adhesion testing of flexible films," *Symposium on interfacial phenomena in composites: processing, characterization and mechanical properties*, June 1988, Newport, Rhode Island, USA.

"On the calculation of the stored energy of cold work," *Applied Mechanics and Engineering Sciences Conference*, Society of Engineering Science and the Applied Mechanics Division of ASME, June 1988, University of California at Berkeley, Berkeley, California, USA.

"Aspects of the interface crack problem with or without contact zones," *Third ASME/ASCE Mechanics Conference*, July 1989, La Jolla, California, USA.

"An asymptotic analysis of three dimensional extrusion," *ASME Winter Annual Meeting*, December 1989, San Francisco, California, USA.

"Elastoplastic analysis of the interface crack problem," *International Conference on Mechanics, Physics and Structure of Materials, A Celebration of Aristotle's 23 Century*, August 1990, Thessaloniki, GREECE.

"Predictions of shape change in hot isostatic pressing of metallic and intermetallic powders," *TMS Fall Meeting*, October 1990, Detroit, Michigan, USA.

"Determination of higher order terms in asymptotic elastoplastic crack tip solutions," *Society for Experimental Mechanics, 1991 Spring Conference*, June 1991, Milwaukee, WI.

"Finite elastoplastic transformations of anisotropic metals," *Plasticity '91, The Third International Symposium on Plasticity and its Applications*, August 1991, Grenoble, FRANCE.

"Asymptotic analysis and numerical simulation of extrusion of porous metals," *IUTAM Symposium, Finite Inelastic Deformations — Theory and Applications*, August 1991, Hannover, GERMANY.

"Finite strain anisotropic plasticity: Constitutive equations and computational issues," *ASME Winter Annual Meeting*, December 1991, Atlanta, Georgia, USA.

"On the near-tip mode-mix of interfacial cracks in non-linear materials," *Society of Engineering Science Meeting*, September 1992, La Jolla, California, USA.

"Finite continuum mechanics of evolving microstructures," *Society of Engineering Science Meeting*, September 1992, La Jolla, California, USA.

"Finite element analysis of cold- and hot-isostatic pressing," *International Conference on Hot Isostatic Pressing '93*, April 1993, Antwerp, Belgium.

"Nonlinear fracture mechanics of interfaces," *ASME/ASCE/SES Annual Meeting*, June 1993, Charlottesville, Virginia, USA.

"Anisotropic plasticity at finite strains: Constitutive equations and computational issues," *IUTAM Symposium on Computational Mechanics of Materials*, June 1993, Brown University, Providence, Rhode Island, USA.

"Two-parameter characterization of crack tip fields in nonlinear materials: Cracks in monolithic structures and along bimaterial interfaces," *25th National Symposium on Fracture Mechanics: New Trends in Fracture Mechanics*, June 1993, Lehigh University, Bethlehem, PA.

"Use of pressure-dependent plasticity models in ABAQUS," *ABAQUS User's Conference 1996*, Newport, Rhode Island, USA.

"Constitutive models for porous media with microstructure evolution: Computational issues," *3rd National Congress on Computational Mechanics*, 1999, Volos, Greece.

"Hydrogen enhanced localized plasticity," *3rd National Congress on Computational Mechanics*, 1999.

"A symbolic-numeric approach to the problem of localization of plastic flow," 3rd National Congress on Computational Mechanics, 1999, Volos, Greece.

"Crack tip constraint in edge-cracked geometries," *26th National Symposium on Fracture Mechanics*, June 1996, Idaho National Engineering Laboratory (INEL), Idaho Falls, ID.

"Numerical modeling of hydrogen induced shear localization," *Chemistry and Electrochemistry of Stress Corrosion Cracking: A Symposium Honoring the Contributions of R.W. Staehle*, TMS (The Minerals, Metals and Materials Society), 2001, USA.

"Some recent Advances at Illinois on hydrogen induced shear localization and decohesion," *Joackson Hole International Conference on Hydrogen*, 2001, USA.

"Finite element techniques for gradient elasticity problems," *6th Greek Congress of Mechanics*, 2001.

"3-D catalytic regeneration and stress modeling of diesel particulate filters by ABAQUS FEM software", *Society of Automotive Engineers (SAE) 2002 World Congress*, Detroit, MI, March 4–7, 2002.

"Finite element models of strain-gradient elasticity: Accuracy and error estimates", *5th National Congress on Computational Mechanics*, 2005.

"Constitutive response and damage in solid propellants", *41st AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, 10–13 July 2005, Tucson, Arizona, USA.

"Three-dimensional finite element model of human foot during gait" (in Greek), *2nd Congress of the Greek (Hellenic) Society of Biomechanics*, May 4-6, 2007, Ancient Olympia, Greece.

"Constitutive modeling and computational analysis of muscle tissue", *15th Workshop Finite Element Method in Biomedical Engineering, Biomechanics and Related Fields*, July 16–17, 2008, Ulm, Germany.

"Constitutive modeling of muscle tissue and finite element analysis of foot during gait", *1st Local ABAQUS Users Conference*, September 25, 2008, Athens, Greece.

"Constitutive modeling and computational analysis of muscle tissue", *3rd Congress of the Greek (Hellenic) Society of Biomechanics*, September 26–28, 2008, Athens, Greece.

"Constitutive modeling and computational analysis of muscle tissue", *3rd Congress of the Greek (Hellenic) Society of Biomaterials*, November 2008, Athens, Greece.

"Fracture mechanics and gradient elasticity: Asymptotic solutions and numerical techniques", *2nd South-East European Conference on Computational Mechanics*, an IACM-ECCOMAS Special Interest Conference, 22–24 June 2009, Rhodes, Greece (KEYNOTE Lecture).

"On the dynamic modeling of skeletal muscle", *4th Congress of the Greek (Hellenic) Society of Biomaterials*, November 27–29, 2009, Athens, Greece.

"Muscle and tendon tissues: Constitutive modeling and computational issues", *4th Congress of the Greek (Hellenic) Society of Biomechanics*, June 4–6, 2010, Ioannina, Greece.

"On the constitutive modeling of skeletal muscle and tendon tissues", *16th U.S. National Congress of Theoretical and Applied Mechanics*, 27 June–2 July 2010, State College, Pennsylvania, USA.

"Muscle and tendon tissues: Constitutive modeling and computational issues", *9th Hellenic Society for Theoretical and Applied Mechanics*, International Congress on Mechanics, 12–14 July 2010, Limassol, Cyprus.

"Prediction of collapse of the osteonecrosis of the hip by determining location and size of the lesion. A 2 to 17 years study", *10th IEEE International Conference on Information Technology and Applications in Biomedicine* (ITAB 2010), 3−5 November 2010, Corfu, Greece.

"Gradient elasticity: plane problems, fracture mechanics, and numerical techniques", *Continuum and Kinetic Methods in the theory of shocks, fronts and interfaces*, 20−24 June 2011, Heraklion, Crete, Greece.

"A methodology for the estimation of the effective yield function of isotropic composites with applications to TRIP Steels", 10th European Solid Mechanics Conference, 2 – 6 July 2018, Bologna, Italy.

"Anisotropic strain-gradient plasticity of porous metals", 15th International Conference on Computational Plasticity, 2 – 5 September 2019, Barcelona, Spain.

"A strain-gradient isotropic elastoplastic damage model with J_3 dependence", 12th International Conference on Mechanics, 22 – 25 September 2019, Thessaloniki, Greece.

ΔΙΑΛΕΞΕΙΣ

"Finite element analysis of void growth near a blunting crack tip," Department of Mechanical Engineering, The City College of the City University of New York (CCNY), New York, NY, April 1984.

"On the influence of microvoid growth on ductile fracture and metal extrusion," Department of Aerospace Engineering and Engineering Mechanics, The University of Texas at Austin, Austin, TX, December 1984.

"Use of pressure dependent plasticity laws in metal forming and ductile fracture," Department of Mechanical Engineering, Carnegie-Mellon University, Pittsburgh, PA, March 1985.

"Use of pressure dependent plasticity laws in ductile fracture and metal extrusion," Department of Mechanical Engineering and Applied Mechanics, University of Pennsylvania, Philadelphia, PA, March 1985.

"On the influence of microvoid growth on ductile fracture and metal extrusion," Department of Mechanical Engineering, State University of New York at Stony Brook, Stony Brook, NY, March 1985.

"Aspects of pressure dependent plasticity models and ductile fracture," Department of Mechanical Engineering, Program in Materials Science, University of California, Santa Barbara, CA, January 1986.

"Models of ductile rupture," Department of Materials Science and Mineral Engineering, University of California, Berkeley, CA, November 1986.

"On crack tip blunting and ductile void growth," Department of Civil Engineering, Polytechnic of Milan, Milan, ITALY, January 1987.

"The analysis of void growth that leads to central bursts during extrusion," Division of Engineering, Brown University, Providence, RI, March 1987.

"On the use and numerical implementation of pressure dependent plasticity models in metal forming," ALCOA, Fabricating Technology Division, Alcoa Center, PA, April 1987.

"Elastic plastic finite element analysis of the peel test," IBM T. J. Watson Research Center, Yorktown Heights, NY, June 1987.

"A new method of analysis of three-dimensional extrusion," Applied Mechanics Division, Aristoteleion University of Thessaloniki, Thessaloniki, GREECE, December 1987.

"The analysis of void growth that leads to central bursts during extrusion," Laboratoire de Mechanique et Technologie, E. N. S. de Cachan, Paris, FRANCE, January 1988.

"On the mechanics of adhesion testing of thin films," IBM T. J. Watson Research Center, Yorktown Heights, NY, June 1988.

"An asymptotic method of analysis of three-dimensional extrusion," ALCOA, Fabricating Technology Division, Alcoa Center, PA, July 1988.

"On the analysis of three-dimensional metal forming operations," Department of Mechanical Engineering and Engineering Mechanics, Michigan Technological University, Houghton, MI, September 1988.

"On the analysis of three-dimensional metal forming operations," Department of Civil Engineering and Operations Research, Princeton University, Princeton, NJ, December 1988.

"On the analysis of three-dimensional metal forming operations," Department of Mechanical Engineering, Johns Hopkins University, Baltimore, MD, April 1989.

"On the analysis of three-dimensional metal forming operations," Department of Civil Engineering, Rensselaer Polytechnic Institute, Troy, NY, November 1989.

"On the use of pressure dependent plasticity models in hot isostatic pressing," National Institute of Standards and Technology, Washington, D.C., November 1989.

"Elastoplastic analysis of the interface crack," Department of Polymer Science and Engineering, University of Massachusetts, Amherst, MA, October 1990.

"Determination of higher order terms in asymptotic elastoplastic crack tip solutions," Department of Mechanical Engineering and Engineering Mechanics, Michigan Technological University, Houghton, MI, October 1991.

"Determination of higher order terms in asymptotic elastoplastic crack tip solutions," Department of Me-

chanical Engineering, Georgia Tech, Atlanta, GA, December 1991.

"Nonlinear fracture mechanics of interfaces," Department of Theoretical and Applied Mechanics, Cornell University, Ithaca, NY, March 1993.

"Higher order asymptotics of crack tip fields," Division of Engineering, Brown University, Providence, RI, December 1993.

"Higher order asymptotics of crack tip fields," Department of Mechanical Engineering and Mechanics, Lehigh University, Bethlehem, PA, October 1994.

"Μη-τοπικές θεωρίες πλαστικότητας: Καταστατικές εξισώσεις και υπολογιστικές τεχνικές," Τομέας Μηχανικής, Γενικό Τμήμα, ΕΜΠ, Νοέμβριος 1997.

"Μη-τοπικές θεωρίες πλαστικότητας: Καταστατικές εξισώσεις και υπολογιστικές τεχνικές," Τομέας Κατασκευών, Τμήμα Πολιτικών Μηχανικών, Πανεπιστήμιο Πατρών, Ιούνιος 1998.

"Deformation-induced anisotropy in porous metals: Constitutive modeling and computational issues," Department of Aerospace Engineering and Engineering Mechanics, University of Texas at Austin, Austin, TX, November 2007.

"Constitutive modeling and finite element methods for TRIP steels," Department of Mechanical Engineering and Applied Mechanics, University of Pennsylvania, Philadelphia, PA, November 2007.

"Fracture mechanics and gradient elasticity: Asymptotic solutions and numerical techniques", Τμήμα Μηχανικών Επιστήμης Υλικών, Πανεπιστήμιο Ιωαννίνων, Μάιος 2010.

"On the constitutive modeling of skeletal muscle and tendon tissues," Department of Mechanical Science and Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, April 2011.

"Non-linear homogenization methods for the constitutive modeling of multiphase materials with applications to TRIP steels," Department of Aerospace Engineering, Texas A&M University, College Station, TX, January 2015.

"Strain-gradient elasticity: Constitutive modeling and numerical techniques," Department of Mechanical Engineering and Applied Mechanics, University of Pennsylvania, Philadelphia, PA, February 2015.

"Strain-gradient elasticity: Constitutive modeling and numerical techniques," Department of Mechanical Engineering and Applied Mechanics, University of Pennsylvania, Philadelphia, PA, February 2015.

"Non-linear homogenization methods for the constitutive modeling of multiphase materials with applications to TRIP steels," Department of Mechanical Engineering, The Petroleum Institute, Abu Dhabi, United Arab Emirates, April 2016.

"Non-linear homogenization methods for the constitutive modeling of multiphase materials with applications to TRIP steels," Department of Civil and Environmental Engineering, Louisiana State University, Baton Rouge, LA, April 2016.

"Non-linear homogenization methods for the constitutive modeling of multiphase materials with applications to TRIP steels," Department of Mechanical Engineering, University of Connecticut, Storrs, CT, September 2016

ΧΡΗΜΑΤΟΔΟΤΗΣΗ ΕΡΕΥΝΗΤΙΚΩΝ ΠΡΟΓΡΑΜΜΑΤΩΝ

- "Χάλυβες TRIP: Προσομοίωση και πειραματική μελέτη θερμικής κατεργασίας και μηχανικής συμπεριφοράς", Γενική Γραμματεία Έρευνας και Τεχνολογίας (ΓΓΕΤ), 72.100 €, 2017–2019.
- "Development of affordable integrated lightweight components from flexible 3G medium-Mn steels", RFCS-2016 749918 European Commission, (Partners: RWTH-Aachen, Salzgitter Mannesmann Forschung GmbH, Centro Ricerche FIAT SCPA, Instituto de Soldadura e Qualidade (ISQ), Auto Tech (former GESTAMP)), 214.500 €, 2017–2020.
- "Toolkit for the design of damage tolerant microstructures", RFCS-2015 709711 European Commis-

sion, (Συνεργάτες: R-WTH Aachen, Univ. Gent, ThyssenKrupp Steel AG, Ocas N.v., Σωληνουργεία Κορίνθου), 295.000 €, 2016–2019.

- "Ευφυής Πόλος Εξειδίκευσης και Ανάπτυξης Θεσσαλίας: Έρευνα, Καινοτομία, Στρατηγικές", Ενότητα: Χάλυβες TRIP, 40.000 €, 1/9/2012–31/10/2015.
- «Πρότυπο Σχέδιο Διαχείρισης Αλλαγών σε ΜΜΕ στον ευρύτερο τομέα του Βιομηχανικού Εξοπλισμού», Αναθετούσα Αρχή: Ανώνυμη Εταιρεία Αναπτυξιακών Δράσεων Στέγη της Ελληνικής Βιομηχανίας, 160.000 €, 3/2/2012−3/9/2012.
- «SunLaser: On line βελτιστοποίηση παραγωγικής διαδικασίας θερμικών ηλιακών συστημάτων», ΓΓΕΤ, 102.000 €, 2010–2013.
- "Modelling of SFIT (Smart Fibers and Intelligent Textiles) textiles", Regional Innovation Pole of Thessaly, 33.100 €, 2007−2008.
- «INVENT: Καινοτόμα εγχειρήματα στη Θεσσαλία «Mechatronics Prototyping Center (MPC)», Περιφέρεια Θεσσαλίας, 97.000 €, 01/02/2003 – 31/07/2003.
- "Control and Exploitation of the Bake – Hardening Effect in Multiphase High Strength Steels", European Union / ECSC, 90.000 €, 2002−2005.
- "Thermomechanical processing of hard aluminum alloys", GSRT/ Program PENED, 40.000 €, 2002−2005.
- «Εξοπλισμός Τμημάτων Πανεπιστημίου Θεσσαλίας: Αναβάθμιση Εργαστηριακού Επιστημονικού Εξοπλισμού 2000-2001», ΥΠΕΠΘ, 551.067,26 €, 25/10/2000 έως 30/6/2002
- «Διεύρυνση Τριτοβάθμιας Εκπαίδευσης – Τμήμα Μηχανικών Η/Υ, Τηλεπικοινωνιών και Δικτύων, Πανεπιστήμιο Θεσσαλίας», ΥΠΕΠΘ, 94.549.000 δρχ.
- «Οργάνωση και Λειτουργία Τμήματος Μηχανικών Η/Υ, Τηλεπικοινωνιών και Δικτύων, Πανεπιστήμιο Θεσσαλίας», ΥΠΕΠΘ, 50.00.000 δρχ.
- «Δίκτυο Ενοποιημένων Υπηρεσιών στο Πανεπιστήμιο Θεσσαλίας», ΥΠΕΘΟ, 263.190.817 δρχ., 1/8/2000 έως 31/1/2002.
- «Δίκτυο Υποστήριξης Ενοποιημένων Υπηρεσιών Πανεπιστημίου Θεσσαλίας», ΥΠΕΠΘ, 33.556.139 δρχ.
- «Υλικά με Μικροδομή: Καταστατική Προσομοίωση και Υπολογιστικές Τεχνικές», ΓΓΕΤ / ΠΕΝΕΔ 1999, 54.330.000 (Π.Θ. 17.730.000 δρχ.), 01/01/2000 έως 31/07/2001.
- «Δίκτυο Διάδοσης Μεθόδων Καταστροφικών & Μη Καταστροφικών Ελέγχων και Πεπερασμένων Στοιχείων στον Ποιοτικό Έλεγχο των Υλικών και Υλών στη Βιομηχανία Διέλασης Αλουμινίου», ΓΓΕΤ/ΠΕΝΕΔ 1999, 17.000.000 (Π.Θ. 1.248.650 δρχ.), 01/12/1999 έως 30/06/2001.
- «Αναβάθμιση του Προπτυχιακού Προγράμματος του Τμήματος Μηχανολόγων Μηχανικών του Πανεπιστημίου Θεσσαλίας», ΕΠΕΑΕΚ Ι, 85.000.000 δρχ., 1998-2000.
- «Ανάλυση Αντοχής Υπέργειων Αγωγών Αμμωνίας», Χημικές Βιομηχανίες Βορείου Ελλάδος ΑΒΕΕ, 400.000 δρχ, 01/09/1999 έως 30/03/2000.
- «Σύγχρονες Θεωρίες Πλαστικότητας: Καταστατικές Εξισώσεις και Υπολογιστικές Τεχνικές», Πανεπιστήμιο Θεσσαλίας / Επιτροπή Ερευνών, 800.000 δρχ., 1998-99.
- "Constitutive modeling of fiber reinforced materials", ONR through subagreement from the University of California Santa Barbara, $ 300.000, 1/7/1991 to 30/6/1996.
- "The mechanics of bimaterial interfaces", National Science Foundation through the Laboratory for Research on the Structure of Matter (LRSM), University of Pennsylvania, $ 161.345, 1/7/1989 to 29/2/1992.
- "The mechanics of hot isostatic pressing (HIP) of intermetallic alloys", BDM (A Ford Aerospace Company), $ 122.290, 1/3/1991 to 29/2/1992.
- "Mechanics of Interfaces", National Science Foundation, Presidential Young Investigator Award, $ 250.000, 1/6/1987 to 31/5/1992

- The ALCOA Foundation, Science Support Grant, $ 10.000, awarded June 1990.
- "The mechanics of adhesion testing of thin flexible films", IBM, $ 86.371, 1/1/1989 to 31/12/1989.
- The ALCOA Foundation, Science Support Grant, $ 10.000, awarded June 1989.
- "Finite strain crack tip cavitation due to creep and diffusion" and "Elastoplastic analysis of the peel test" National Science Foundation through the Laboratory for Research on the Structure of Matter (LRSM), University of Pennsylvania (DMR-8519059), $ 165.789, 1/5/1986 to 30/6/1989.
- "The analysis of peeling of viscoelastic materials", IBM, $ 50.000, 1/1/1988 to 31/12/1988 (with K-S. Kim, Univ. of Illinois).
- The ALCOA Foundation, Science Support Grant, $ 7.000, awarded June 1986.

ΣΥΜΜΕΤΟΧΗ ΣΕ ΕΠΙΤΡΟΠΕΣ ΕΠΙΣΤΗΜΟΝΙΚΩΝ ΣΥΛΛΟΓΩΝ

Member of the ASME Technical Committee on Mechanics of Materials Processing and Manufacturing
Member of the ASME Fracture Mechanics Committee

ΟΡΓΑΝΩΣΗ ΚΑΙ ΠΡΟΕΔΡΕΙΑ ΕΠΙΣΤΗΜΟΝΙΚΩΝ ΣΥΝΕΔΡΙΩΝ

- Co-Chairman of the 3rd National Congress on Computational Mechanics, June 1999, Volos, Greece.
- Co-Chairman of Symposium on Interdisciplinary Issues in Materials Processing and Manufacturing, ASME Winter Annual Meeting, December 1987, Boston, MA.
- Co-Chairman of session on the Mechanics of Cracks on Bimaterial Interfaces, 7th International Conference on Fracture (ICF), March 1989, Houston, TX.
- Co-organizer of 4 sessions on Interfacial Fracture Mechanics, Third ASME/ASCE Mechanics Conference, July 1989, La Jolla, CA.
- Co-organizer of 2 sessions on the Mechanics of Interfaces, SES Annual Meeting, October 1994, Texas A. M. University, College Station, TX.

ΔΙΔΑΚΤΙΚΗ ΕΜΠΕΙΡΙΑ

Προπτυχιακά μαθήματα

University of Illinois at Urbana-Champaign

Engineering Mechanics I - Statics (TAM 152)

University of Pennsylvania

Introduction to Scientific Computation (ENGR 105)
Engineering Mechanics I - Statics (MEAM 200)
Mechanics of Solids (MEAM 354)
Introduction to Finite Elements (MEAM 427)

Πανεπιστήμιο Θεσσαλίας

Μηχανική Υλικών I
Μηχανική των Υλικών II
Πεπερασμένα Στοιχεία
Μηχανική/Στατική
Μηχανική/Δυναμική
Πλαστικότητα και Μηχανική των Θραύσεων

Μεταπτυχιακά μαθήματα

University of Pennsylvania

Engineering Mathematics I (MEAM 500)
Numerical Methods (ENM 502)
Elasticity I (MEAM 519)
Finite Element Analysis (MEAM 527)
Topics in Computational Science and Engineering (ENM 540)
Continuum Mechanics (MEAM 630)
Elasticity II (MEAM 631)
Plasticity and Creep (MEAM 632)
Fracture Mechanics (MEAM 633)

Πανεπιστήμιο Θεσσαλίας

Μηχανική των Συνεχών Μέσων
Μηχανική των Θραύσεων
Πλαστικότητα

University of Illinois at Urbana-Champaign

Plasticity (TAM 554)

ΕΠΙΒΛΕΠΩΝ ΚΑΘΗΓΗΤΗΣ ΔΙΔΑΚΤΟΡΙΚΩΝ ΔΙΑΤΡΙΒΩΝ

1) Sharma Srivatsa M., "On the mechanics of bimaterial interfaces," (July 1991)
2) Govindarajan Sekar, "Deformation processing of porous metals," (August 1992)
3) Cheng Cao, "Creep of fiber reinforced metal-matrix composites," (June 1996)
4) Ramaswamy Sreeganesh, "Length scale effects in plasticity – Constitutive models and computational issues," (December 1996)
5) Αμανατίδου Ελένη, "Μη-τοπικές θεωρίες συνεχών μέσων: Καταστατικές εξισώσεις και υπολογιστικές τεχνικές", (Σεπτέμβριος 2001)
6) Bassi Andrea, "Problems of bifurcations in elastoplastic solids under finite deformations" (συνεπίβλεψη με τον Καθ. F. Genna), University of Milano, Ιταλία (2003)
7) Παπατριανταφύλλου Γιάννης, "TRIP steels: Constitutive modeling and computational issues", (Ιούλιος 2005)
8) Σπύρου Λεωνίδας, "Muscle and tendon tissues: constitutive modeling, numerical implementation and applications", (Σεπτέμβριος 2009)
9) Παπαδιώτη Ιωάννα, "Non-linear homogenization theories with applications to TRIP steels", (Οκτώβριος 2016)
10) Τσαντίδης Γεώργιος, "Numerical methods for strain gradient elasticity", (σε εξέλιξη, αναμενόμενη ολοκλήρωση τον Ιούνιο του 2020)

ΕΠΙΒΛΕΠΩΝ ΚΑΘΗΓΗΤΗΣ ΔΙΑΤΡΙΒΩΝ MASTER'S

1) Deborah A. Blazo, "Higher order terms in asymptotic elastoplastic mode-III crack tip solutions," (September 1990)
2) Juan Pereda, "Finite thermomechanical deformations of anisotropic polymers," (January 1992)
3) Amit Srivastava, "Higher order asymptotics of crack tip fields," (December 1993)
4) Λεωνίδας Σπύρου, "Ανάλυση τάσεων στο ανθρώπινο πόδι" (Ιούνιος 2006)
5) Ντορίνα-Μαρία Τσάρκα, "Asymptotic analysis of interfacial cracks" (Ιούνιος 2007)

6) Ευαγγελία Φραγκιαδάκη, "Συγκόλληση κράματος αλουμινίου 2024 με τη μέθοδο laser CO_2. Μελέτη θερμοκρασιακών κατανομών και παραμενουσών τάσεων" (Φεβρουάριος 2010)
7) Γιώργος Τσαντίδης, "Cracked panel solutions in gradient elasticity" (Ιούνιος 2010)
8) Θέμις Τουμανίδου, "Taylor Spatial Frame and Ilizarov apparatus: A biomechanical analysis using the finite element method" (Μάρτιος 2011)
9) Ιωάννα Παπαδιώτη, "Nonlinear homogenization: elastoplastic materials" (Οκτώβριος 2013)
10) Αναστάσιος Γιομπλιάκης, "Three dimensional unit cell modeling of multiphase steels" (Φεβρουάριος 2014)

ΕΠΙΒΛΕΠΩΝ ΜΕΤΑΔΙΔΑΚΤΟΡΙΚΩΝ ΕΡΕΥΝΗΤΩΝ

- Srivatsa M. Sharma, "Mechanics of interfacial cracks," (Σεπτέμβριος 1991 – Ιούνιος 1993)
- Rajasekeran Govindarajan, "Finite plastic deformation of metal single crystals," (Ιανουάριος 1993 – Αύγουστος 1993, συνεπίβλεψη με τον Καθ. J.L. Bassani)
- Djaffar Boussaa, "Localization of plastic flow in porous media: A linear stability approach," (Ιούνιος 1994 – Δεκέμβριος 1994)
- Ελένη Αμανατίδου, "Non-local theories of elasticity: Constitutive equations and computational techniques", (Οκτώβριος 2001 – Δεκέμβριος 2003)
- Λεωνίδας Σπύρου, "Constitutive modeling of human muscle", (Σεπτέμβριος 2009 – Σεπτέμβριος 2010).
- Ιωάννα Παπαδιώτη, "Computational gradient plasticity", (Νοέμβριος 2016 – παρόν)

ΑΠΑΣΧΟΛΗΣΗ ΠΡΩΗΝ ΔΙΔΑΚΤΟΡΙΚΩΝ ΦΟΙΤΗΤΩΝ

Sharma Srivatsa, Principal Software Developer at ANSYS, Inc., Pittsburgh, PA, USA

Govindarajan Sekar, Senior Engineer, MSC Software, Newport Beach, CA, USA

Cheng Cao, General Manager, Radius Product Design, Beijing R&D, China

Ramaswamy Ganesh, Senior Vice President – Global R&D and QA/RA PENTAX Medical, HOYA Corporation, Tokyo, Japan

Bassi Andrea, Senior Engineer, Ingenieurteam Bergmeister GmbH, Vahrn, Italy

Παπατριανταφύλλου Γιάννης, Μηχανικός Προσομοίωσης Τροχίσματος, Bic-Violex, Αθήνα

Σπύρου Λεωνίδας, Ερευνητής Δ, Ινστιτούτο Έρευνας και Τεχνολογίας Θεσσαλίας (ΙΕΤΕΘ)

ΔΙΠΛΩΜΑΤΑ ΕΥΡΕΣΙΤΕΧΝΙΑΣ

Material Consolidation modeling and control system, United States Patent Number 5,136,497, August 4, 1992.