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▪ **Personal Data**

Date of Birth: 28/12/1971 Place of Birth: Thessaloniki, Greece

▪ **Education**

2000 Ph.D. Diploma, Aristotle University of Thessaloniki
Title: *Application of Wavelet Theory and Neural Networks on the mechanical response of materials*

1996 Diploma in Electrical Engineering, Aristotle University of Thessaloniki

▪ **Work Experience**

12/2017 Associate Professor, Division of Science and Technology of Structures, *Aristotle University of Thessaloniki*

9/2013–12/2017 Assistant Professor, Division of Science and Technology of Structures, *Aristotle University of Thessaloniki*

11/2010–9/2013 Assistant Professor, Division of Mechanics, *Aristotle University of Thessaloniki*

5/2003–11/2010 Lecturer, Division of Mechanics, *Aristotle University of Thessaloniki*

7/2002–5/2003 Post-doctoral Researcher, *Laboratory of Mechanics and Materials, Aristotle University of Thessaloniki*

4–8/1999 Visiting Researcher, *Dipartimento di Ingegneria Strutturale e Geotecnica, Politecnico di Torino*

11–12/1997 Visiting Researcher, *Inst. für Material Forschung, Forschungszentrum Karlsruhe*

▪ **Additional Experience**

- Young Researcher in EU Program *TMR Network on Material Instabilities in Deformation and Fracture: Mechanics, Materials Science and Nonlinear Physics Aspects*, Contract No: ERB FMRX-CT96-0062
- Young Researcher in EU Program *Reactor Vessel Integrity in Severe Accidents*, Contract No: FI4S-CT96-0024
- Young Researcher in National Program *PENED '96 Degradation of Underground Double Porosity Aquifers*
- Young Researcher in National Program *PENED '99 Gradient Theory, Stochasticity and Self-Organization: Applications in Nanomaterials, Industrial Materials and Biocompatible Epilayers*
- Industrial Attachment, EKO S.A., Thessaloniki (7-8/1993)
- Industrial Attachment, DEI S.A., Thessaloniki (7-10/1992)

▪ **Teaching (Depts. of Chemical, Civil, Electrical and Rural Engineering)**

• **Undergraduate Courses**

Strength of Materials

Introduction to Continuum Mechanics

Mechanical Response of Materials

• **Graduate Courses (Interdepartmental Program Nanosciences & Nanotechnologies/N&N)**

Mechanics of Materials and Micro- Nano- Structures (Grad. Program N&N)

Nanomechanics (Grad. Program N&N)

• **PhDs Supervision**

Responsible for 5 PhDs and 3-member committee member for a number of other PhDs

- **Laboratory Experience**

- Detailed demonstration for the operation/capabilities of the Nanoindenter and Atomic Force Microscope of the Laboratory of Mechanics and Materials, by the technicians of CSM and VEECO, respectively.
- Presentation of the operation of the Nanoindenter and Atomic Force Microscope to the graduate students of the DPMS Nanosciences and Nanotechnologies, as well as to the graduate/PhD students of the Laboratory of Mechanics and Materials.

- **PhD & MSc Theses Supervision (AUT)**

- Advisor in 4 (ongoing) PhD Theses. Member of the 3-member Admission Committee in a number of PhD Theses.
- Advisor in 4 MSc Theses in the Interdepartmental Graduate Program *Nanosciences & Nanotechnologies (NN)*

- **Participation in Organization/Committees of Scientific Conferences/Symposia**

- 5th *Euromech Solid Mechanics Conference (ESMC-5)*, Thessaloniki, 17-22 August, 2003
- 19th *Conference and Summer School on Non-Linear Science and Complexity*, Thessaloniki, 10 – 22 July, 2006
- 1st *World Symposium on Multiscale Material Mechanics & Engineering Sciences (1st MMMES)*, Thessaloniki, 29 April - 2 May, 2007
- 1st *International Conference From Nanoparticles & Nanomaterials to Nanodevices & Nanosystems (IC-4N)*, Chalkidiki, 16-18 June, 2008
- 2nd *World Symposium on Multiscale Material Mechanics and Engineering Sciences (2nd MMMES)*, Thessaloniki, 21 - 22 May, 2009

- **Participation in Journal Editorial Boards**

- *Journal of the Mechanical Behavior of Materials/JMBM*
- *Computer and Experimental Simulations in Engineering and Science/CESES - formerly*

- **Guest Reviews in Scientific Journals**

• <i>Journal of the Mechanical Behavior of Materials</i>	• <i>Tissue Engineering</i>
• <i>Journal of Biomedical Nanotechnology</i>	• <i>Journal of Materials Research</i>
• <i>Journal of Materials Science</i>	• <i>Journal of Microscopy</i>
• <i>Materials Chemistry and Physics</i>	• <i>Evolving Systems</i>
• <i>Meccanica</i>	• <i>Philosophical Magazine</i>
• <i>Philosophical Magazine Letters</i>	• <i>Applied Materials Today</i>
• <i>Biomaterials Science</i>	• <i>Frontiers</i>
• <i>Zeitschrift Angewandte Mathematik und Mechanik</i>	•

- **Guest Reviews in Funding Organizations**

• <i>Swiss National Foundation</i>	• <i>Greek General Secretariat of Research & Technology</i>
• <i>Greek Scholarships Foundation</i>	• <i>Hellenic Foundation for Research and Innovation</i>

- **Funding ID**

- *Strengthening Public Research and Innovation Infrastructures of the Region of Central Macedonia (Dec. 2017 – 365 kEuros)*
- *EDVM103 : Modifying the Conceptual Framework for Nano-Indentation: Application to Thin Films Used in Organic Electronics (Dec. 2019 - Feb. 2021 – 41 kEuros)*

- **Recognition of Scientific Work (No self-citations)**

- Citations (Scopus): 270 *h-index (Scopus):* 10
- Citations (ISI): 250 *h-index (ISI):* 10

■ *Publications in Refereed Journals*

1. Doulgeri Z., Fahantidis N. and Konstantinidis A., On the decoupling of position and force controllers in constrained robotic tasks, *J. Robotic Systems* **15**, 323-340, 1998.
2. Huber N., Konstantinidis A. and Tsakmakis Ch., Determination of Poisson's Ratio by Spherical Indentation Using Neural Networks – Part I: Theory, *J. Applied Mechanics* **68**, *Trans. ASME*, 218-222, 2001. (IF: 1.357)
3. Moutsopoulos K.N., Konstantinidis A.A., Meladiotis I.D., Tzimopoulos Ch.D. and Aifantis E.C., Hydraulic Behavior and Contaminant Transport in Multiple Porosity Media, *Transport in Porous Media* **42**, 265-292, 2001. (IF: 1.653)
4. Frantziskonis G., Konstantinidis A. and Aifantis E.C., Scale-dependent constitutive relations and the role of scale on nominal properties, *Eur. J. Mech. A/Solids* **20**, 925-936, 2001. (IF: 2.453)
5. Konstantinidis A., Frantziskonis G., Carpinteri A. and Aifantis E.C., Size Effects on Tensile Strength and Fracture Energy in Concrete: Wavelet vs. Fractal Approach, *J. Mechan. Behav. Materials* **12**, 63-75, 2001.
6. Konstantinidis A., Ioannidou T., Kehagias A. and Aifantis E.C., Gradient Constitutive Equations, Size Effects and Artificial Neural Networks, *J. Mechan. Behav. Materials* **12**, 141-157, 2001.
7. Konstantinidis A. and Aifantis E.C., Recent Developments of Gradient Theory. Part II: Plastic Heterogeneity and Wavelets, *J. Engng. Mater. Technology* **124**, 358-364, 2002. (IF: 0.908)
8. Tsagrakis I., Konstantinidis A. and Aifantis E.C., Strain gradient and wavelet interpretation of size effects in yield and strength, *Mech. Mater.* **35**, 733-745, 2003. (IF: 2.812)
9. Tsagrakis I., Konstantinidis A. and Aifantis E.C., Size Effects in Tension: Gradient Internal Variable and Wavelet Models, *J. Mechan. Behav. Materials* **14**, 41-58, 2003.
10. Tsagrakis I., Efremidis G., Konstantinidis A. and Aifantis E.C., Deformation vs. flow and wavelet-based models of gradient plasticity: Examples of axial symmetry, *Int. J. Plasticity* **22**, 1456-1485, 2005. (IF: 6.23)
11. Fyffe B., Schwerdtfeger J., Blackford J.R., Zaiser M., Konstantinidis A. and Aifantis E.C., Fracture toughness of snow: The influence of layered microstructure, *J. Mechan. Behav. Materials* **18**, 195-215, 2007.
12. Aifantis K.E. and Konstantinidis A.A., Yielding and tensile behavior of nanocrystalline copper, *Mater. Sci. Engng. A* **503**, 198-201, 2009. (IF: 2.959)
13. Aifantis K.E., Konstantinidis A.A. and Hackney S.A., On some aspects of interfaces at the nanoscale, *J. Mechanics and MEMS* **1**, 105-117, 2009.
14. Aifantis K.E. and Konstantinidis A.A., Hall-Petch revisited at the nanoscale, *Mater. Sci. Engng. B* **163**, 139-144, 2009. (IF: 2.302)
15. Zaiser M., Moretti P., Konstantinidis A. and Aifantis E.C., Nucleation of interfacial shear cracks in thin films on disordered substrates, *J. Stat. Mech.* P02047 (1-12), 2009. (IF: 2.091)
16. Konstantinidis A., Cornetti P., Pugno N. and Aifantis E.C., Application of gradient theory and quantized fracture mechanics in snow avalanches, *J. Mechan. Behav. Materials* **19**, 39-48, 2009.
17. Zaiser M., Moretti P., Konstantinidis A. and Aifantis E.C., Roughening and pinning of interface cracks in shear delamination of thin films, *J. Stat. Mech.*, P11009, 2009. (IF: 2.091)
18. Aifantis K.E., Konstantinidis A. and Forest S., Modeling strain localization bands in metal foams, *J. Comput. Theor. Nanosci.* **7**, 1-7, 2010. (IF: 1.343)
19. Konstantinidis A., Tsagrakis I. and Aifantis E.C., 1D gradient material mechanics with applications at the nanoscale, *Emerg. Mater. Res.* **1**, 39-47, 2012.
20. Manda M., Moschakis N., Konstantinidis A., Christophilos D., Papadopoulou L., Koidis P. and Aifantis E.C., Probing the mechanical properties of dental porcelain through nanoindentation, *J. Mech. Behav. Mater.* **21**, 41-46, 2012.
21. Zaiser M., Mill F., Konstantinidis A. and Aifantis K., Strain localization and strain propagation in collapsible solid foams, *Mater. Sci. Eng. A* **567**, 38-45, 2013. (IF: 2.959)
22. Konstantinidis A.A., Aifantis K.E. and De Hosson J.Th.M., Capturing the stochastic mechanical behavior of micro and nanopillars, *Mater. Sci. Eng. A* **597**, 89-94, 2014. (IF: 2.959)
23. Avlonitis M., Efremidis G. and Konstantinidis A., A statistical study of precursor activity in

- rain-induced landslides, *J. Mech. Behav. Mater.* **22**, 79-86, 2014.
24. Zhao J., Zhang X., Konstantinidis A.A. and Kang G., Correlating the internal length in strain gradient plasticity theory with the microstructure of material, *Phil. Mag. Lett.* **95**, 340-349, 2015. (IF: 0.918)
 25. Karapanagiotis I., Aifantis K.E. and Konstantinidis A., Capturing the evaporation process of water drops on sticky superhydrophobic polymer-nanoparticle surfaces, *Mater. Lett.* **164**, 117-119, 2016. (IF: 2.412)
 26. Wei X., Konstantinidis A., Qi C. and Aifantis E.C., Gradient plasticity used for modeling extrinsic and intrinsic size effects in the torsion of Au microwires, *J. Mechan. Behav. Mater.* **25**, 53-56, 2016.
 27. Konstantinidis A.A., Frantziskonis G., Askes H. and Aifantis E.C., The use of nanoindentation for determining internal lengths and the constitutive response of monument materials: Models and experiments, *J. Mechan. Behav. Mater.* **25**, 57-60, 2016.
 28. Konstantinidis A.A., Michos K. and Aifantis E.C., On the correct interpretation of compression experiments of micropillars produced by a focused ion beam, *J. Mechan. Behav. Mater.* **25**, 83-87, 2016.
 29. Kampouris A.K. and Konstantinidis A., On the interpretation of the indentation size effect (ISE) through gradient theory for Vickers and Berkovich indenters, *J. Mechan. Behav. Mater.* **25**, 161-164, 2016.
 30. Kakavas P.A., Konstantinidis A., Hatzitrifon N.K., Papadopoulos P. and Aifantis E.C., On the constitutive equations of fresh mortar, *J. Mechan. Behav. Mater.* **25**, 183-187, 2016.
 31. Efremidis G., Avlonitis M., Konstantinidis A. and Aifantis E.C., A statistical study of precursor activity in earthquake-induced landslides, *Comput. Geotechnics* **81**, 137-142, 2017. (IF: 2.179)
 32. Sidiropoulos A.D., Harea E., Konstantinidis A.A. and Aifantis, E.C., "Pop-in" and "pop-out" effect in monocrystalline silicon. A statistical investigation, *J. Mechan. Behav. Mater.* **26**, 65-71, 2017.
 33. Petsos, G., Konstantinidis A. and Aifantis, E.C., On the role of higher order deformation gradients in necking, spinodal decomposition and neuron firing, *Mater. Res. Comm.* **93**, 119-123, 2018.
 34. Chattopadhyay A.K., He X., Tsambali A.-A., Konstantinidis A.A. and Aifantis E.C., On stochastic resonance in a model of double diffusion, *Mater. Sci. Technol.* **34**, 1606-1613, 2018.
 35. Tsambali A.-A., Konstantinidis A.A. and Aifantis E.C., Modeling double diffusion in soils and materials, *J. Mechan. Behav.* **27**, DOI: 10.1515/jmbm-2018-2003, 2018.
 36. Konstantinidis A.A. and Aifantis K.E., Capturing slip band formation in Ni₃Al nanocubes during compression, *Mater. Sci. Technol.* **35**, 571-576, 2019.
 37. Kouris L.S., Bournas D.A., Akintayo O.T., Konstantinidis A.A. and Aifantis E.C., A gradient elastic homogenisation model for brick masonry, *Engng. Struct.* **208**, 110311, 2020.
 38. Parisi K., Shuang F., Hu P., Konstantinidis A., Giannakoudakis A. and Aifantis E.C., From gradient elasticity to gradient interatomic potentials: The case-study of gradient London potential, *J. Appl. Math. Phys.* **8**, 1826-1837, 2020.
 39. Tsigarida A., Tsampali E., Konstantinidis A.A. and Stefanidou M., On the use of confocal microscopy for calculating the surface microroughness and the respective hydrophobic properties of marble specimens, *J. Build. Engng.* **33**, 101876, 2021.
 40. Mourouzis P., Diamantopoulou E.-I., Tsigarida A., Dionysopoulos D., Konstantinidis A., Samanidou V. and Tolidis K., Evaluation of monomer elution and surface roughness of a polymer infiltrated ceramic network CAD/CAM material after Er,Cr:YSGG laser-assisted tooth bleaching, *Operat. Dentistry*, accepted, 2020.

▪ **Publications in Conference Proceedings**

- P1. Konstantinidis A., Frantziskonis G. and Aifantis E.C., Wavelets Approach to Adiabatic Shear Banding, in: *Proc. of the 5th National Congress on Mechanics* **2**, pp. 930-936, Ioannina, Greece, 1998.
- P2. Konstantinidis A., Pontidou Ch. and Aifantis E.C., Application of gradient theory and wavelets on instabilities of polymeric materials, in: *Proc. 2nd Panhellenic Conference of Chemical Engineering*, Thessaloniki, 1999.

- P3. Zaiser, M., Fyffe, B., Moretti, P., Konstantinidis, A. and Aifantis, E.C., Pinning and propagation of interface cracks in slope failure: 1D and 2D considerations, in: *Proc. of the 2nd International Symposium on Continuous and Discontinuous Modelling of Cohesive Frictional Materials (CDM2004)*, eds. P.A. Vermeer, W. Ehlers, H.J. Hermann and E. Ramm, A.A. Balkema Publishers, pp. 435-446, 2004.
- P4. Aifantis, K.E. and Konstantinidis A., Applications of gradient deformation theory of plasticity to nanopolycrystals, in: *Proc. of PLASTICITY '05*, eds. A.S. Khan and A.R. Khoei, Neat Press, pp.469-471, 2005.
- P5. Konstantinidis, A., Pugno, N., Cornetti, P. and Aifantis, E.C., Avalanche Mechanics: LEFM vs. Gradient Model, in: *Proc. of the 16th European Conference of Fracture (ECF16)*, CD-ROM, 2006.
- P6. Konstantinidis, A. and Aifantis, K.E., On the application of gradient plasticity and wavelet analysis to model the plastic deformation of nanocrystalline materials, in: *Proc. of 8th HSTAM Int. Congress on Mechanics*, Eds. N. Bazeos et al, pp. 637-644, 2007.
- P7. Zaiser M., Moretti P., Konstantinidis A.A. and Aifantis E.C., Shear failure on disordered substrates: Nucleation and propagation of interfacial shear cracks, in: *Proc. 4th Int. Conference on Multiscale Materials Modeling/MMM2008*, ed. A. El-Azab, Dept. of Scientific Computing, Florida State University, pp. 126-131, 2008.
- P8. Aifantis K.E., Konstantinidis A.A. and Zaiser M., Damage evolution in foams, in: *Proc. 4th Int. Conference on Multiscale Materials Modeling/MMM2008*, ed. A. El-Azab, Dept. of Scientific Computing, Florida State University, pp. 253-256, 2008.
- P9. King R.L., Abuomar O., Rhee H., Konstantinidis A., Pavlidou N. and Petrou M., On materials informatics and pattern formation in materials, in: *Proc. ENOC 2011, Rome*, CD ROM, 2011.
- P10. Konstantinidis A. and Aifantis E.C., On some aspects of gradient plasticity, in: *Proc. 13th Int. Conf. Fracture*, 16-21 June 2013, Beijing, CD ROM, 2013.
- P11. Avlonitis M., Konstantinidis A. and Efremidis G., Modeling precursor activity in rain-induced landslides by means of spring-block models, in: *Proc. World Landslide Forum 3*, 2-6 June 2014, Beijing, CD ROM, 2014.
- P12. Konstantindis A.A., Zhang X. and Aifantis E.C., On the combined gradient-stochastic plasticity model: Application to Mo-micropillar compression, *AIP Conf. Proc.* **1646**, 3-9, 2015.
- P13. Efremidis, G., Avlonitis, M., Konstantinidis, A. and Aifantis, E.C., Realistic spring block models for earthquake-induced landslides, in: *Proc. 13th International Congress on Rock Mechanics (ISRM)*, paper 481, Montreal, Canada, CD ROM, 2015.
- P14. Avlonitis M., Efremidis G., Konstantinidis A. and Aifantis, E.C., The sliding surface roughness effect on landslides: A statistical study, in: *Proc. Rock Mechanics and Rock Engineering: From the Past to the Future*, Ulusay et al. (Eds.), Taylor & Francis, London, pp. 613-616, 2016.

■ **Participation/Presentation/Posters in National/International Conferences**

- 9th Summer School/4th Panhellenic Conference on the Complexity and Chaotic Dynamics of non-Linear Systems, Patras, A. Bountis (Org.), 22 July – 2 August, 1996, Participation
- 1st Euroconference and U.S. Workshop on Material Instabilities in Deformation and Fracture, Chalkidiki, E.C. Aifantis (Org.), 4-7 September 1996, Poster
- 2nd Euroconference on Material Instabilities in Deformation and Fracture, Thessaloniki, E.C. Aifantis (Org.), 31 August - 4 September 1997, Poster
- 5th National Congress on Mechanics, Ioannina, C.V. Massalas (Org.), 27-30 August 1998, Oral Presentation
- 2nd Panhellenic Conference of Chemical Engineering, V. Papageorgiou (Org.), Thessaloniki, 27-29 May 1999, Presentation
- ALERT 2004, Aussois, France, F. Darve (Org.), 11-13 October 2004, Oral Presentation
- 2nd International Symposium on Continuous and Discontinuous Modelling of Cohesive Frictional Materials (CDM2004), Stuttgart, H. Herrmann (Org.), 24-27 September 2004, Oral Presentation
- Symposium Honoring the Contributions of Elias Aifantis, 2005 Joint ASCE/ASME/SES Conference on Mechanics and Materials, Baton Rouge, USA, D. Bammann, H. Zbib and P. Sofronis (Org.), 1-3 June 2005, Oral Presentation
- 18th Summer School on Non-Linear Science and Complexity, Volos, A. Bountis (Org.), 18-30 July

2005, *Oral Presentation*

- 16th *European Conference of Fracture (ECF16)*, Alexandroupolis, E. Gdoutos (Org.), 2-7 July 2006, *Oral Presentation*
- 8th *HSTAM Int. Congress on Mechanics*, Patras, D.E. Beskos (Org.), 12-14 July 2007, *Oral Presentation*
- 4th *International Workshop on Nanosciences and Nanotechnologies*, Thessaloniki, S. Logothetidis (Org.), 16-18 July 2007, *Poster*
- 4th *International Conference on Multiscale Materials Modeling*, Tallahassee, USA, A. El-Azab (Org.), 27-31 October 2008, *Oral Presentation*. *Επιπλέον, παρουσίαση των Keynote Lectures για E.C. Aifantis και M. Zaiser, οι οποίοι δεν παρευρέθησαν*
- *Mesomechanics 2009*, Oxford, A. Korsunsky & D. Dini (Org.), 23-26 June 2009, *Oral Presentation*
- 7th *International Conference of Numerical Analysis and Applied Mathematics (ICNAAM)*, Crete, 18-22 September 2009, *Invited Oral Presentation*
- *Summer School on MMES: Curricula Interfacing & Innovation*, August 2010, Epanomi, *Invited Oral Presentation*
- *ENOC 2011*, Rome, July 2011, *Invited Oral Presentation*
- *ICNAAM 2011*, Chalkidiki, September 2011, *Invited Oral Presentation*
- *AIFANTIS International Symposium*, Antalya/Turkey, October 2015, *Invited Oral Presentation*