CURRICULUM VITAE: DIMITRIOS KARALEKAS, PROFESSOR

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Department of Industrial Management and Technology
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AREAS OF COMPETENCE

Mechanics of Polymers and Composites; Solid Mechanics; Fracture Mechanics; Experimental Mechanics; Optical Methods in Mechanics; Failure Analysis; Additive Manufacturing Technologies and Processes, Advanced Materials Manufacturing.

EDUCATION

Ph.D., December 1990: Department of Mechanical Engineering, McCormick School of Engineering and Applied Science, Northwestern University, Evanston, Illinois, USA.

M.S., June 1987: Theoretical and Applied Mechanics, McCormick School of Engineering and Applied Science, Northwestern University, Evanston, Illinois, USA.

B.S., May 1985: Department of Mechanical, Materials and Aerospace Engineering, Armour College of Engineering and Science, Illinois Institute of Technology, Chicago, Illinois, USA.

PROFESSIONAL EXPERIENCE

Professor, 07/11–present: Department of Industrial Management and Technology, University of Piraeus, Piraeus, Greece.

Department Chairman, 10/2016–8/2019: Department of Industrial Management and Technology, University of Piraeus, Piraeus, Greece.

Visiting Professor, 04/2022-present: MSc Programme in "Applied Biomechanics and Biomaterials in Orthopedics", Athens Medical School, National and Kapodistrian University of Athens, Greece.

Visiting Professor, 09/2013-2024: MSc Programme in Strategic Product Design, School of Science and Technology, International Hellenic University, Thessaloniki, Greece.

Visiting Professor (on sabbatical leave), 09/06–01/07 & 05-06/11: Laboratory of Applied Mechanics and Reliability Analysis (LMAF), Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland.

Associate Professor, 07/05–06/11: Department of Industrial Management and Technology, University of Piraeus, Piraeus, Greece.

Assistant Professor, 07/98–06/05: Department of Industrial Management and Technology, University of Piraeus, Piraeus, Greece.

Visiting Assistant Professor, 03/96-06/98: Department of Industrial Management and Technology, University of Piraeus, Piraeus, Greece.

Visiting Assistant Professor, 09/96-02/97: Department of Mechanical and Industrial Engineering, University of Thessaly, Volos, Greece.

Scientific Associate, 05/94-03/96: Structural Programs Section, Hellenic General Secretariat for Research and Technology, Ministry of Development, Athens, Greece.

Post-doctoral Fellow, 09/92-12/93: Center for Quality Engineering and Failure Prevention, Laboratory of Experimental Mechanics and Advanced Materials, Northwestern University, Evanston, Illinois, USA.

Military Service, 03/91–08/92: Hellenic Navy.

Research Assistant, 08/86-11/90: Center for Quality Engineering and Failure Prevention, Laboratory of Experimental Mechanics and Advanced Materials, Northwestern University, Evanston, Illinois, USA.

Teaching Assistant, 06/85-05/86: Department of Mechanical, Materials and Aerospace Engineering, Illinois Institute of Technology, Chicago, Illinois, USA.

COURSES TAUGHT

Engineering Mechanics; Strength of Materials; Design of Machine Elements; Materials Selection in Mechanical Design; Product Development and Innovation; 3D Printing and Manufacturing Technologies (graduate); Product Design and Development (graduate); Product EcoDesign (graduate); Design Theory and Methodologies (graduate); Experimental Stress Analysis (graduate).

ACHIEVEMENTS & AWARDS

- Included in the *Stanford/Elsevier Top 2% Scientists List:* 2021 (single year list), 2022 & 2024 (career list).
- *Invited professor, September-October 2006 and May-June 2011,* Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland.
- *Research Fellowship, 1986-90,* Northwestern University, Evanston, IL, USA.
- *Teaching Assistantship, 1985-86,* Illinois Institute of Technology, Chicago, ILL, USA.
- *Graduation with High Honors, 1985,* Illinois Institute of Technology, Chicago, IL, USA.
- *Dean's List–Undergraduate Honor Student, 1981-1985,* Illinois Institute of Technology, IL, USA.
- *National Engineering Honor Society (Pi Tau Sigma), 1984,* USA.
- *National Honorary Mechanical Engineering Fraternity (Tau Beta Pi), 1983,* USA.

PROFESSIONAL ACTIVITIES

Member of:

- Technical Chamber of Greece (TEE)
- Greek Society of Experimental Mechanics of Materials (GSEMM)
- Hellenic Society of Non-Destructive Testing (HSNT)
- European Structural Integrity Society (ESIS)
- American Society of Mechanical Engineers (ASME)
- Society for the Advancement of Materials and Process Engineering (SAMPE)

Committees:

- Associate National Delegate of Greece to the European Scientific Committee for the Thematic Priority "Aeronautics and Space" of the 6th Framework Programme, 2002-04.
- National Delegate of Greece to the Management Committee of COST-Action 531- Lead-free Solder Materials, 2003-2006.
- Vice-President of the Greek Society of Experimental Mechanics of Materials (GSEMM), 2019-present.

Reviewer for:

- *Journals:*
  Rapid Prototyping; Journal of Materials Processing Technology; Materials & Design; Rapid Prototyping; Journal of Materials Processing Technology; Materials & Design; Experimental Techniques; Proceedings of the Institution of Mechanical Engineers-Part B: Journal of Engineering Manufacture; Composite Structures; Advanced Composites Letters; International Journal of Advanced Manufacturing Technology; Encyclopaedia of Composites; Composites Science and Technology; Sensors; Journal of Polymer Science: Part B- Polymer Physics; Meccanica; Computer-Aided Design; Iranian Polymer Journal; Machines; Materials, Journal of Vinyl and Additive Technology; Journal of Sensors; Polymers; Sensors and Actuators A: Physical; Indian Journal of Engineering & Materials Sciences; International Journal of Mechanical Sciences; Acta Biomaterialia, Bioengineering; Technologies; Polymers for Advanced Technologies; Advances in Materials Science and Engineering; Acta Mechanica Sinica; Applied Bionics and Biomechanics; Polymer-Plastics Technology and Engineering; Materials and Manufacturing Processes; Additive Manufacturing; International Journal of Fatigue; Materials Science and Technology; Design Science; Mechanical Systems and Signal Processing; Sensors and Actuators A: Physical; IEEE Access; Current Opinion in Solid State & Materials Science; Composites Part A: Applied Science and Manufacturing; Materials Letters.; Heliyon, Computational Materials Science.
- *Research proposals and programs:*
  Hellenic General Secretariat for Research and Technology, Ministry of Development.

Editorial Board:

Member of the Editorial Board of the open-access Journal «Frattura ed Integrità Strutturale (Fracture and Structural Integrity)» of the Italian Group of Fracture (ISSN 1971-8993).

UNIVERSITY SERVICES

- Academic Officer of Department's ERASMUS International Agreements, Apr. 2012-2016.

- Member of the Department's ECTS Committee May 2010-2014.
- Member of the Department's Internal Evaluation Committee, September 2008-2014.
- Member of the Department's Academic Planning Committee, 2008-2014.
- Member of the University's Research Center Council, September 2008-2010.
- Chairman of the University's Technical Council (2021-) and Member from 2006 to 2017.

PROJECTS AND RESEARCH GRANTS

University of Piraeus, 1998-present

- «*easyHPC@eco.plastics.industry: An open HPC ecosystem for the ecological transformation and the advancement of the competitiveness of the Plastic Industry in the Regions of West & Central Greece*», European Digital Innovation Hubs – EDIHS Seal of Excellence, funded by the Ministry of Development & Investments, Hellenic Republic, 2024-2027. *(Principal Investigator of participating research partner)*
- *Topology optimization of 3D printed patient-specific spinal braces (OrThOP3Dics)*, National Programme "Research-Create-Innovate B Round" funded by the Operational Programme Competitiveness, Entrepreneurship and Innovation (EPAnEK), General Secretariat of Research and Innovation, Ministry of Development & Investments, Hellenic Republic, 2022-2024. *(Principal Investigator of participating research partner)*
- *In Situ Monitoring Additive Rapid Manufacturing*, ARISTEIA II Programme, funded by the Hellenic Ministry of Education, General Secretariat for Research and Technology, 2014-2015. *(Principal Investigator)*
- *3D Structures for Tissue Engineering,* THALIS Programme, funded by the Hellenic Ministry of Education, 2012-2015. *(Principal Investigator of participating research partner)*
- *Nanostructured Geopolymers and Calcium Phosphate based biocements and Implants Design,* THALIS Programme, Hellenic Ministry of Education, 2012-2015. *(Principal Investigator of participating research partner; http://excellence.minedu.gov.gr/thales/en/thalesprojects/380278)*
- *Micro-stereolithigraphy Built Medical Models*, PENED-2003, funded by Hellenic General Secretariat for Research and Technology, Ministry of Development, 2006-9. *(Principal Investigator of participating research partner; http://excellence.minedu.gov.gr /thales/en/thalesprojects /379380)*
- *Lead-free Solder Materials*, COST Action 531, European Cooperation in the Field of Scientific and Technical Research, 2002 - 2007. *(Principal Investigator of participating research partner)*
- *Design, Analysis and Development of Mechatronics Prototypes*, funded by Mechatronics Prototyping Center, Region of Thessaly, Greece, April –July 2003. *(Principal Investigator)*
- *Composite Repair of Metallic Structure for Aging Commercial Aircraft (COMPRES)*, European Community, BRITE-EURAM III Programme, 1999 - 2002. *(as member of research team)*
- *Development of Repair Methods for Aging Aircraft Using Advanced Composite Materials*, EPET II – Transportation Programme, funded by Hellenic General Secretariat for Research and Technology, Ministry of Development, 1999 - 2001. *(as member of research team)*
- *Infusion Network of Non-Destructive/Destructive and Finite Element Methods for the Quality Control of Aluminum Extruded Materials*, EPET II – Networks Programme, funded by Hellenic General Secretariat for Research and Technology, Ministry of Development, 1999 - 2001. *(as member of research team)*

- *Design, Production and Installment of a Composite Bridge*, EPET II – Subprogramme 1, funded by Hellenic General Secretariat for Research and Technology, Ministry of Development, 1998 - 2001. *(as member of research team)*
- *Design and Production of an Improved Water Injection System for Small Dishwashers*, EPET II – PAVE97 BE350, funded by Hellenic General Secretariat for Research and Technology, Ministry of Development, 1999 - 2000. *(as member of research team)*
- *Investigation of the University-Industry Link for the Adoption and Advancement of Technological Innovation*, EPEAEK – Research Programme, funded by Hellenic Ministry of Education and Religion, 1999 – 2000. *(Principal Investigator of participating research partner)*
- *Development of a Scientific and Technological Data Base in the Area of Composite Materials*, EPET II – National Information System Programme, funded by Hellenic General Secretariat for Research and Technology, Ministry of Development, 1998 – 2000. *(Principal Investigator)*
- *Mechanical Behaviour of PET Bottles – Design and Development of Improved Conceptual Solutions*, EPET II – PAVE97 BE7, funded by Hellenic General Secretariat for Research and Technology, Ministry of Development, 1998 – 2000. *(Principal Investigator of participating research partner)*

Illinois Institute of Technology & Northwestern University, 1985-1993

- *Investigation of Thermomechanical Behavior of Metal Matrix Composites*, Northwestern University (under contract to NASA – Lewis Research Center, Cleveland, OH), 1987-1990 & 1992-1993. *(as member of research team)*
- *Evaluation of Tire Tread/Casing Adhesive Joint*, Northwestern University (under contract to Bandag Inc., Muscatine, IA), 1987 - 1988. *(as member of research team)*
- *Thermomechanical Behavior of Multidirectional Composite Laminates*, Northwestern University (under contract to IBM Corporation, Endicott, NY), 1986 - 1987. *(as member of research team)*
- *Study of Residual Stresses and Warpage in Multilayer Circuit Boards*, Northwestern University (under contract to IBM Corporation, Endicott, NY), 1985 - 1986. *(as member of research team)*

GRADUATE STUDENT ADVISING ACTIVITY (DIRECT SUPERVISION)

- PH.D. GRADUATE STUDENTS: Kousiatza Ch. (May 2014 – July 2019; awarded a ten months «research internship» at Texas A&M University, College Station, TX for the academic year 2017-2018); Bimis A. (Oct. 2012-Mar. 2017; recipient of the Swiss Government Excellence Scholarship for Foreign Students for the academic year 2015-16), Kantaros A. (Mar. 2012-Nov. 2015); Schizas C. (2006-10); Agelopoulos A. (2001-05).
- SEVERAL MS STUDENTS

PUBLICATIONS

Thesis

- **Karalekas D.**, (November 1990). Investigation of thermomechanical behavior of metal matrix composites, *Ph.D. Thesis*, Northwestern University, Evanston, Illinois, USA. (ISSN: 0419-4217)
- **Karalekas D.**, (June 1987). The influence of fabrication parameters on warpage of woven-glass/epoxy composite circuit boards, *M.Sc. Thesis*, Northwestern University, Evanston, Illinois, USA. (OCLC: 76279892)

Refereed Journals

1. Lymperopoulos P.N., Theotokoglou E.E., Dragatogiannis D., **Karalekas D.**, Matsika-Klossa C., (2024). Additive Manufacturing, Numerical and Experimental Analyses for Pentamode Metamaterials, *Infrastructures*, 9(10), 172.
2. Matsika-Klossa C., Chatzidai N. Kousiatza Ch. and **Karalekas D.**, (2024). Characterization of Thermal Expansion Coefficient of 3D Printing Polymeric Materials Using Fiber Bragg Grating Sensors, *Materials*, 17(18), 4668.
3. Karna M., Kakalis C., Chatzidai N., Kousiatza Ch., Tambouratzis T., **Karalekas D.**, (2023). A combined experimental and artificial neural networks study of distortion of 3D printed beam specimens, *Materials Today: Proceedings*, Volume 93, Part 4, pp. 589-593.
4. Matsika-Klossa C., Chatzidai N. and **Karalekas D.**, (2023). Tensile properties of 3D printed carbon fiber reinforced nylon specimens, *Materials Today: Proceedings*, Volume 93, Part 4, pp. 571-574.
5. Kladovasilakis N., Tsongas K., **Karalekas D.** and Tzetzis D. (2022). Architected Materials for 3D-printing: A Comprehensive Review, *Materials*, 15, 5919.
6. Kousiatza Ch. and **Karalekas D.**, (2021). Experimental study of fabrication induced residual strains and distortions in polymeric square plates built using Fused Deposition Modeling, *Material Design and Processing Communications*, 3(2): e149.
7. Stramarkou M., Boukouvalas C., Eleni P., **Karalekas D.** and Krokida M. (2021). Comparative life cycle assessment of polyethylene terephthalate (PET) and multilayer Tetra Pak juice packaging systems, *Chemical Engineering Transactions*, 87, pp. 103 – 108.
8. Chatzidai N. and **Karalekas D.**, (2019). Experimental and numerical study on the influence of critical 3D-printing processing parameters, *Frattura ed Integrità Strutturale (Fracture and Structural Integrity)*, 50, pp. 407-413.
9. Kousiatza Ch., Tzetzis D. and **Karalekas D.**, (2019). In-situ characterization of 3D printed continuous fiber reinforced composites: A methodological study using fiber Bragg grating sensors, *Composites Science and Technology*, Volume 174, pp. 134-141.
10. Bimis A., Canal L.P., **Karalekas D.** and Botsis J., (2017). On the mechanical characteristics of a self-setting Calcium Phosphate Cement, *Journal of the Mechanical Behavior of Biomedical Materials*, Volume 68, pp. 296-302.
11. Kousiatza Ch., Chatzidai N. and **Karalekas D.**, (2017). Temperature mapping of 3D printed polymer plates: Experimental and numerical study, *Sensors*, 17(3), 456, pp. 1-14.
12. Economidou S.N. and **Karalekas D.**, (2016). Optical sensor-based measurements of thermal expansion coefficient in additive manufacturing, *Polymer Testing*, Volume 51, May 2016, pp. 117-121.
13. Kousiatza Ch. and **Karalekas D.**, (2016). In-situ monitoring of strain and temperature distributions during fused deposition modeling process, *Materials & Design*, Volume 97, pp. 400-406.
14. Bimis A., **Karalekas D.**, Bouropoulos N., Mouzakis D. and Zaoutsos S., (2016). Monitoring of hardening and hygroscopic induced strains in a calcium phosphate bone cement using FBG sensor, *Journal of the Mechanical Behavior of Biomedical Materials*, Volume 60, pp. 195-202.

15. Kantaros A., Chatzidai N. and **Karalekas D.**, (2016). 3D-printing assisted design of scaffold structures, *International Journal of Advanced Manufacturing Technology,* Volume 82, Issue 1, pp. 559-571.
16. Bimis A. and **Karalekas D.**, (2015). Experimental evaluation of hardening strains in a bioceramic material using an embedded optical sensor, *Meccanica*, Volume 50, Issue 2, pp. 541-547.
17. Galanopoulos S., Chatzidai N., Melissinaki V., Selimis A., Schizas C., Farsari M. and **Karalekas D.**, (2014). Design, fabrication and computational characterization of a 3D micro-valve built by multi-photon polymerization, *Micromachines*, 5(3), pp. 505-514.
18. Tambouratzis T., **Karalekas D.** and Moustakas N., (2014). A methodological study for optimizing material selection in sustainable product design, *Journal of Industrial Ecology*, Volume 18, Number 4, pp. 508-516.
19. Kantaros A. and **Karalekas D.**, (2013). Fiber Bragg grating based investigation of residual strains in ABS parts fabricated by fused deposition modelling process, *Materials & Design*, Volume 50, pp. 44-50.
20. Lai M., **Karalekas D.** and Botsis J., (2013). On the effects of the lateral strains on the Fiber Bragg Grating response, *Sensors*, 13(2), pp. 2631-2644.
21. Schizas C. and **Karalekas D.**, (2011). Mechanical characteristics of an Ormocomp® biocompatible hybrid photopolymer, *Journal of the Mechanical Behavior of Biomedical Materials*, Volume 4, Issue 1, pp. 99-106.
22. Schizas C., Melissinaki V., Gaidukeviciute A., Reinhardt C., Ohrt C., Dedoussis V., Chichkov B.N., Fotakis C., Farsari M., and **Karalekas D.**, (2010). On the design and fabrication by two-photon polymerization of a readily assembled micro-valve, *International Journal of Advanced Manufacturing Technology,* Volume 48, No. 5-8, pp. 435-441.
23. Papakaliatakis G. and **Karalekas D.**, (2010). Damage growth by debonding in a single fiber metal matrix composite: elastoplasticity and strain energy density criterion, *Theoretical and Applied Fracture Mechanics,* Volume 53, Issue 2, pp. 152-157.
24. **Karalekas D.** and Schizas C., (2009). Monitoring of solidification induced strains in two resins used for photofabrication, *Materials & Design*, Volume 30, Issue 9, pp. 3705-3712.
25. Schizas C. and **Karalekas D.**, (2009). FBG-based monitoring of solidification strain development in a microstereolithography photocurable resin, *Journal of Materials Processing Technology,* Vol. 209, No. 5, pp. 2349-2355.
26. **Karalekas D.**, Cugnoni J. and Botsis J., (2009). Monitoring of hygrothermal ageing effects in an epoxy resin using FBG sensor: A methodological study, *Composites Science and Technology*, Volume 69, Issues 3-4, pp. 507-514.
27. **Karalekas D.**, Cugnoni J. and Botsis J., (2008). Monitoring of process induced strains in a single fibre composite using FBG sensor: A methodological study, *Composites Part A: Applied Science and Manufacturing*, Volume 39, Issue 7, pp. 1118-1127.
28. **Karalekas D.**, (2008). On the use of FBG sensors for measurements of curing strains in photocurable resins, *Rapid Prototyping Journal,* Vol. 14, No. 2, pp. 81-86.
29. **Karalekas D.** and Agelopoulos A., (2006). On the use of stereolithography built photoelastic models for stress analysis investigations, *Materials & Design*, Volume 27, Issue 2, pp. 100-106.

30. Kostopoulos V., Markopoulos Y.P., Vlachos D. E., Katerelos D., Galiotis C., Tsiknias T., Zacharopoulos D., **Karalekas D.**, Chronis P. and Kalomalos D., (2005). Design and construction of a vehicular bridge made of glass/polyester pultruded box beams, *Plastics Rubber & Composites*, Vol. 34, No. 4, pp. 201-207.

31. Papakaliatakis G. and **Karalekas D.**, (2005). Computational study of crack growth in SiC/Al composites, *Mathematical and Computer Modelling*, Vol. 42 (7-8), pp. 799-808.

32. **Karalekas D.** and Antoniou K., (2004). Composite rapid prototyping: overcoming the drawback of poor mechanical properties, *Journal of Materials Processing Technology,* Volumes 153-154, pp. 526-530.

33. **Karalekas D.**, (2004). Investigating critical design characteristics through experimental testing of photopolymeric models, *Rapid Prototyping Journal,* Vol. 10, No. 4, pp. 232-238.

34. **Karalekas D.**, (2003). Study of the mechanical properties of nonwoven fibre mat reinforced photopolymers used in rapid prototyping, *Materials & Design*, Vol. 24, No. 8, pp. 665-670.

35. **Karalekas D.** and Kakoudakis J., (2003). Predictive mechanical performance evaluation of consumer food cans using stereolithography models, *Packaging Technology and Science,* Vol. 16, No. 1, pp. 37-45.

36. **Karalekas D.** and Agelopoulos A., (2003). Study of shrinkage strains in a stereolithography cured acrylic photopolymer resin, *Journal of Materials Processing Technology,* Vol. 136, No. 1-3, pp. 146-150.

37. **Karalekas D.**, Rapti D., Gdoutos E.E. and Agelopoulos A., (2002). Investigation of shrinkage induced stresses in stereolithography photo-curable resins, *Experimental Mechanics,* Vol. 42, No. 4, pp. 439-444.

38. **Karalekas D.** and Rapti D., (2002). Investigation of the processing dependence of SL solidification residual stresses, *Rapid Prototyping Journal,* Vol. 8, No. 4, pp. 243-247.

39. Giannatsis J., Dedoussis V. and **Karalekas D.**, (2002). Architectural scale modelling using stereolithography, *Rapid Prototyping Journal,* Vol. 8, No. 3, pp. 200-207.

40. Tsamasphyros G.J., Kanderakis G.N., **Karalekas D.**, Rapti D., Gdoutos E.E., Zacharopoulos D. and Marioli-Riga Z.P., (2001). Study of composite patch repair by analytical and numerical methods, *Fatigue & Fracture of Engineering Materials & Structures,* Vol. 24, No. 10, pp. 631-636.

41. **Karalekas D.**, Rapti D., Papakaliatakis G. and Tsartolia E., (2001). Numerical and experimental investigation of the deformational behaviour of plastic containers, *Packaging Technology and Science,* Vol. 14, No. 5, pp. 185-191.

42. Agelopoulos A. and **Karalekas D.**, (2001). Determination of cure shrinkage in SL layer built plates using lamination theory, *Advanced Composites Letters*, Vol. 10, No. 1, pp. 7-12.

43. Gdoutos E.E., **Karalekas D.** and Daniel I.M., (1991). Micromechanical analysis of filamentary metal matrix composites under longitudinal loading, *Journal of Composites Technology & Research*, Vol. 13, No. 3, pp. 168-174.

44. **Karalekas D.**, Gdoutos E.E. and Daniel I.M., (1991). Micromechanical analysis of nonlinear thermal deformation of filamentary metal matrix composites, *Computational Mechanics*, Vol. 9, No. 1, pp. 17-26.

45. Gdoutos E.E., **Karalekas D.** and Daniel I.M., (1991). Thermal stress analysis of a Silicon Carbide/Aluminum composite, *Experimental Mechanics*, Vol. 31, No. 3, pp. 202-208.

46. Daniel I.M., Wang T.M., **Karalekas D.** and Gotro J.T., (1990). Determination of chemical cure shrinkage in composite laminates, *Journal of Composites Technology & Research*, Vol. 12, No. 3, pp. 172-176.

Book Chapters

47. Economidou S.N. and **Karalekas D.**, (2018). Characterization of fused deposition modeling polymeric structures using embedded fiber Bragg grating sensors (Chapter 5), in "*Additive Manufacturing: Materials, Processes, Quantifications and Applications*", Jing Zhang Yeon-Gil Jung (eds.), Elsevier, May 2018, pp. 163-180 (ISBN: 978-0-12-812155-9).
48. Chatzidai N. and **Karalekas D.**, (2015). A computational based design and optimization study of scaffold architectures, in "*Applications of Computational Tools in Biosciences and Medical Engineering*", Andreas Öchsner and Holm Altenbach (eds.), Springer book series on "*Advanced Structured Materials*", Volume 71, 2015, pp. 1-17 (ISBN: 978-3-319-19469-1).
49. **Karalekas D.** and Schizas C., (2010). Monitoring the degree of solidification in UV curable polymers used in lithographic processes, in "*Basics and Applications of Photopolymerization Reactions*", Jean Pierre Fouassier and Xavier Allonas (eds.), a special volume within the series "Applied Polymer Science", Vol. 1, Research Signpost Publishing, Vol. 1, 2010, pp. 217-225 (ISBN: 978-81-308-0386-9).

Refereed Proceeding Papers (Full Paper)

50. Panagiotidou A. and **Karalekas D.**, (2020). 3D printing assisted product design addressing refugees needs, *7th International Conference on Manufacturing and Materials Engineering (ICMMEN)*, Thessaloniki, Greece, 2-3 July, 2020, (6 p), MATEC Web Conf., 318 (2020) 01036.
51. Casavola C., Cazzato A., **Karalekas D.**, Moramarco V. and Pappalettera G., (2018). The effect of chamber temperature on residual stresses of FDM parts, *2018 SEM ANNUAL: Conference and Exposition on Experimental and Applied Mechanics*, June 4–7, 2018, Greenville, SC, USA. Published in "*Residual Stress, Thermodynamics & Infrared Imaging, Hybrid Techniques and Inverse Problems, Volume 7*", Baldi A., Quinn S., Balandraud X., Dulieu—Barton S., Bossuyt S. (eds.), Conference Proceedings of the Society for Experimental Mechanics Series, Springer, 2019, pp. 87-92 (doi: 10.1007/978-3-319-95074-7_16; print ISBN 978-3-319-95073-0).
52. Kousiatza Ch. and **Karalekas D.**, (2015). Real-time monitoring of 3D printed multi-layered structures using optical fiber Bragg grating sensors, *20th International Conference on Composite Materials (ICCM20)*, Copenhagen, Denmark, 19-24 July, 2015, (10 p).
53. Kousiatza Ch. and **Karalekas D.**, (2014). On the integration of fiber Bragg grating sensors as an in-process sensing system in additive manufacturing, *5th International Conference on Additive Technologies (ICAT2014)*, Vienna, Austria, 16-17 October, 2014, (6 p).
54. Kantaros A. Giannatsis J. and **Karalekas D.**, (2013). A novel strategy for the incorporation of optical sensors in FDM parts, *Proceedings of the International Conference on Advanced Manufacturing Engineering and Technologies (NewTech2013)*, A. Archenti & A. Maffei (eds.), Stockholm, Sweden, 27-30 October, 2013, pp. 163-170 (ISBN: 978-91-7501-893-5).
55. Kantaros A. and **Karalekas D.**, (2013). FBG based insitu characterization of residual strains in FDM process, *SEM Annual Conference & Exposition on Experimental & Applied Mechanics*, Lombard, IL, USA, 3-6 June, 2013. Published in "*Residual Stress, Thermodynamics & Infrared Imaging, Hybrid Techniques and Inverse Problems, Volume 8*", M. Rossi et al. (eds.), Conference

Proceedings of the Society for Experimental Mechanics Series, Springer, 2014, pp. 333-337 (doi: 10.1007/978-3-319-00876-9_41; print ISBN 978-3-319-00875-2).

56. Tambouratzis T., **Karalekas D.** and Moustakas N., (2013). Computational intelligence-based identification of maximally sustainable materials: the case of liquid containers, *IEEE Symposium Series on Computational Intelligence for Engineering Solutions (IEEE SSCI 2013)*, Singapore, 15-19 April, 2013, art. No. 6611736, pp. 102-109 (ISBN: 978-1-4673-5851-4; doi: 10.1109/CIES.2013.6611736).

57. Giannatsis J., Sofos K., Canellidis V., **Karalekas D.** and Dedoussis V., (2011). Investigating the influence of build parameters on the mechanical properties of FDM parts, presented at "*International Conference on Advanced Research in Virtual and Rapid Prototyping (VRAP5-2011)*", Leiria, Portugal, September 28 to October 1, 2011. Published in "*Innovative Developments in Virtual and Physical Prototyping*", P.J. Bártolo (ed.), CRC Press, Taylor & Francis, London, 2012, pp. 525-529 (ISBN: 978-0-415-68418-7).

58. Schizas C. and **Karalekas D.**, (2010). Material investigation of a photopolymerized biomaterial, in "*Proceedings of NANOCON2010, 2nd International Conference*", Olomouc, Czech Republic, 12-14 October, 2010, pp. 191-196.

59. Schizas C., Melissinaki V., Gaidukeviciute A., Reinhardt C., Ohrt C., Dedoussis V., Chichkov B.N., Fotakis C., **Karalekas D.** and Farsari M., (2010). 3D Biomedical implants fabricated using direct laser writing, presented at the "*SPIE Photonics West: Session of MOEMS/MEMS-Advanced Fabrication Technologies for Micro/Nano Optics and Photonics*", San Francisco, CA, USA, 23-28 January 2010. Published in *Proceedings of SPIE*, 7591, 759105 (2010); doi:10.1117/12.840695.

60. Papakaliatakis G. and **Karalekas D.**, (2008). Numerical investigation of fracture in a transversely loaded metal matrix composite, presented at the "*International Conference of Computational Methods in Science and Engineering (ICCMSE 2008)*", Crete, Greece, 25-30 September 2008. Published in *American Institute of Physics (AIP) Conference Proceedings*, Vol. 1148, pp. 169-172 (2009); doi:10.1063/1.3225263.

61. Schizas C. and **Karalekas D.**, (2007). Investigation of shrinkage strains in a photo-curable resin for 3D micro-fabrication using a FBG sensor, presented at the "*3rd International Conference on Advanced Research in Virtual and Rapid Prototyping*", Leiria, Portugal, September 24-29, 2007. Published in "*Virtual and Rapid Manufacturing*", P.J. Bártolo (ed.), Taylor & Francis, London, pp. 319-323 (ISBN: 978-0-415-41602-3).

62. Schizas C. and **Karalekas D.**, (2006). RP-based investigation of the air-flow performance of an internal combustion engine component, in "*Euro-uRapid2006*", Frankfurt, Germany, November 27-28, 2006, (5 p).

63. Agelopoulos A. and **Karalekas D.**, (2004). Predicting critical stress regions in product designs through photoelastic testing of stereolithography models, in "*Proceedings of the 12th International Conference on Experimental Mechanics*", CD-ROM, (7 pp), Bari, Italy, August 29 – September 2, 2004. Extended abstract published in "*Advances in Experimental Mechanics*", C. Pappalettere (ed.), McGraw-Hill, 2004, pp. 12-13 (ISBN: 88 386 6273-8).

64. Papakaliatakis G. and **Karalekas D.**, (2004). Study of debonding development in fibrous metal matrix composites, in Book of Abstracts (pp. 86-87) and in CD-ROM, (7 pp), Proceedings of the "*11th European Conference on Composite Materials (ECCM 11)*", Rhodes, Greece, May 31 – June 3, 2004.

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