Curriculum Vitae

Prof. John (Ioannis) D. Kechagias

PhD. Mechanical Engineering and Aeronautics

Address:	1st Merarchia 71, 40200 Elassona, Greece
Current Affiliation:	https://fwsd.uth.gr/en/teams/kechagias/
E-mail:	jkechag@uth.gr : jkechag@teilar.gr; jhnkchgs@gmail.com
ORCID ID:	https://orcid.org/0000-0002-5768-4285
Google Scholar Profile Link:	http://scholar.google.com/citations?user=euU9evwAAAAJ&hl=en
Web pages	https://www.teilar.gr/person_en.php?pid=153
	https://www.webofscience.com/wos/author/record/S-7998-2019
	https://www.scopus.com/authid/detail.uri?authorId=6506884564
Nationality	Hellenic
Date of Birth	1971
Place of Residence	Thessaly

Overview

- Ioannis (John) Kechagias graduated from the University of Patras in 1995 with a Mechanical Engineering diploma.
- He received a PhD diploma from the same University (2001) for research in laser laminated object manufacturing (LOM) process optimization and modeling (Laboratory for Manufacturing Systems and Automation & Machine and Mechanism Dynamics: Director Prof G. Chryssolouris).
- The scientific field of Dr.-Ing. Kechagias is MATERIALS AND MANUFACTURING, including STATIC AND DYNAMIC mechanical response of METALS, COMPOSITES, PLASTICS, CERAMICS, and their MECHANICAL and PHYSICAL PROPERTIES OPTIMIZATION with computing methods and stochastic methodologies.
- He was employed on several research projects funded by the European Union at the University of Patras (https://lms.mech.upatras.gr/), TEI of Thessaly (http://www.mech.teilar.gr/?q=node/77), and the University of Thessaly (Laboratory for materials: Director Assist. Prof. G. Petropoulos).
- As a Professor at the TEI of Thessaly, he was the Director of the Machine Tools Laboratory, where metallic parts were manufactured using mechanical dynamic processes (Turning, Milling, Welding, etc.).
- He was employed for three academic years as PD407 at the University of Thessaly Mechanical Engineering Department and co-operated with Prof G. Petropoulos. He taught subjects related to the technology of mechanical dynamic processes (removal, laser, etc.) on metal materials, including composites (http://www.mie.uth.gr/).
- Between 2018 and 2019, he followed the sabbatical lease as a visiting Professor at the **National Technical University of Athens** in the School of Mechanical Engineering, Laboratory of Manufacturing Technology (Director of Lab Prof. D. Manolakos).

- In October 2020, he moved to the Dept. of Forestry Wood Science and Design (FWSD) at the University of Thessaly, where he is the Design and Manufacturing Laboratory Director.
- He was employed at TEI Kozanis as a contractor Professor (CAD-CAM-CAE) between 1997 and 2004.
- He gave lectures at several Universities with Erasmus programs inside and outside Europe.

Short- Achievements in Materials and Manufacturing, including METALS

- Among the *World's Top 2% most cited Scientists in 2023* in the field of *MATERIALS and INDUSTRIAL AUTOMATIONS* (career Stanford's list)
- Among the *World's Top 2% most cited Scientists in 2021, 2022 and 2023* in the field of *MATERIALS and INDUSTRIAL AUTOMATIONS* (single-year Stanford's list)
- **SME Journal Awards**: Journal of Manufacturing Processes **Outstanding Reviewers (2022)** (https://www.sme.org/aboutsme/awards/sme-journal-awards/)
- Deputy responsible for the UTH team at *NerveRepack-HORIZON-KDT-JU-2022 (https://www.nerverepack.eu/consortium-partners)*
- He made an outstanding contribution during his PhD in the Laboratory for Manufacturing Systems, where he participated in many International projects (1993-2001).
- He participated in many research projects related to the dynamic mechanical response of metal material removal processes.
- Six published research manuscripts in High-impact Journals as a **single Author** (including **one in metals - IJAMT journal**).
- One editorial as single-author in AIMS materials science WoS Journal (**including metals manuscripts**)
- Many high-impact manuscripts as **First and Corresponding**.
- FWCI indices (Scopus) are higher than 400% of the average.
- His expertise is proven by the WoS database, where he has records of more than 700 reviews (**many about metals**) in many archival peer-reviewed Journals, i.e., Nature Communication, Additive Manufacturing, Material and Manufacturing Processes, and Scientific Reports, to name a few.

Short- Administrative work

- He was the Head of the Mechanical Engineering Department (TEI Larissa) for three years (2013-2016) and had a positive external evaluation for the department in 2016.
- 2004-2019: Director of Machine Tools laboratory – TEI Thessaly (http://www.mech.teilar.gr/?q=node/77)
- 2020-present: He has been the Director of the established Design and Manufacturing Lab of the FWSD department since 2020.
- External PhD evaluator (Cranfield University)
- One finished PhD (Chaidas D.: https://www.didaktorika.gr/eadd/handle/10442/54452)
- Supervision of three other PhD theses and many more student theses in FWSD Dept. and Mechanical Engineering Study Program (TEI).
- Teaching in postgraduate programs for more than 5 years (3D printing).
- He has authored a book about automatic CNC machine tools (metal processing) and more than 160 research papers in international journals, book chapters, and conferences, of which 107 are indexed in Scopus with H-34 or H29, excluding self-citations (Nov 2024).
- Editor in Chief: Int J of Experimental Design and Process Optimisation-IJEDPO Inderscience (May 2022-present) and Board Member since 2008.
- Editorial Board member: (i) Reports in Mechanical Engineering (Scopus), (ii) The International Journal of Mechatronics and Manufacturing Systems (Scopus), (iii) the AIMS Materials Science (Scopus, WoS), (iv) Advances of Civil Engineering Journal (Scopus, WoS), (v) International Journal of Mechanical Engineering

and Robotics Research (Scopus, WoS) (vi) Clean Technologies & Recycling (vii) Materials Science in Additive Manufacturing (Scopus)

- More than 13 editor records to WoS Journals
- More than 758 verified peer reviews in WoS
- Verified reviewer for more than 60 WoS Journals
- Best paper award 2016 (IMANEE conf)
- Best paper award FIBERS (https://www.mdpi.com/journal/fibers/awards/3028)
- One cover in JMMP (Q1) journal (https://www.mdpi.com/2504-4494/5/3)

Education

Ph.D.	**University of Patras,** Mechanical Engineering Dept. Ph.D. in Manufacturing Engineering (grade: 10). PhD title: **Parameter design and modelling of the laminated object manufacturing technique**	*Sep 1995 – Dec 2001*
Degree	**University of Patras,** Mechanical Engineering Grade: 7.49	*Sep 1990 – Jul 1995*
1st Year attendance	**University of Patras,** Mathematics 1st Year attendance,	*Sep 1989 – Sep 1990*
Degree	**School of Pedagogical & Technological Education (SELETE-ASPAITE)** Ioánnina	*Sep 1999 – Jul 2000*
Sabbatical	Visiting Professor at the **National Technical University of Athens** in the School of Mechanical Engineering, Laboratory of Manufacturing Technology (Director of Lab Prof. D. Manolakos)	*Sep 2018 – Jul 2019*

Skills

Topics — Material characterization: Static and Dynamic tests, DMA, SEM-FESEM, Profilometer tester, Hardness, HAZ, etc.

Manufacturing: Dynamic metal removal (chip characterization), Additive metal Processes, Desimilar tween WAAM steel structures (cooperation with Manu Srivastava, IIITDM Jabalpur, India), Materials, Metals, CNC Machine Tools, CAD/CAM/CAE, Automation, Control, Processing, Quality Engineering, Industrial Engineering, Systems, Machining, Advanced Manufacturing, Additive Manufacturing, Experimental design, Process optimization, Taguchi, DOE, CCD Method, RSM, Artificial Neural Networks, Genetic Algorithms, Optimization Algorithms, Assembly Accuracy, Digital Manufacturing, MFG Energy and Sustainability, Augmented Manufacturing

Languages — English, Greek

Scientific Memberships — Technical Chamber of Greece (1995)
Hellenic Association of Mechanical & Electrical Engineers since (1996)
IAENG member (2012)
Digital Idea (nonprofit scientific association)

Publications

Books

1. **Kechagias, J.D.**: *Εργαλειομηχανές Ψηφιακής Καθοδήγησης (CNC Machine Tools: Theory & Practice)*. 1 01/2009; **ION**, in Greek language., ISBN: 978-960-411-673-7, http://www.iwn.gr/product.asp?catid=12519

Editorial

2. **Kechagias, J.D.** (**2022**). Materials for Additive Manufacturing. AIMS Materials Science, 9(6), 785-790. https://doi.org/10.3934/matersci.2022048

3. IJEDPO Editor in Chief: **John Kechagias (7/2022).** An Overview in Experimental Design and Process optimization, https://www.inderscience.com/mobile/highlights/2022/summer_short.php

4. C. Chivu, R.M. Rio-Belver, Kechagias, J.D. (**2009**): Economic Engineering and Manufacturing Systems. Bulletin of the Transilvania University of Brasov-SERIES I- ENGINEERING SCIENCES, 2(51):395. https://www.proquest.com/openview/41e7d668e6f0ea42ff469c98884e4cb8/1?pq-origsite=gscholar&cbl=105974

Book Chapters (peer reviewed)

5. Fountas, N. A., Papantoniou, I., **Kechagias, J.,** Manolakos, D. E., & Vaxevanidis, N. M. (**2022**). Implementation of Modern Meta-Heuristic Algorithms for Optimizing Machinability in Dry CNC Finish-Turning of AISI H13 Die Steel Under Annealed and Hardened States. In Evolutionary Optimization of Material Removal Processes (pp. 45-59). CRC Press. https://doi.org/10.1201/9781003258421

6. N.M. Vaxevanidis, N.A. Fountas, **Kechagias, J. D.**, D.E. Manolakos (**2016**) *FEM Analysis and ANN Modeling for Optimizing Machinability Indicators during Dry Longitudinal Turning of Ti-6Al-4V ELI Alloy*. Metal Cutting Technologies: Progress and Current Trends: chapter 5: pages 95-118; De Gruyter., ISBN: 9783110451740, https://doi.org/10.1515/9783110451740-008

7. N.M. Vaxevanidis, N.A. Fountas, **Kechagias, J. D.**, D.E. Manolakos (**2013**). *Cutting forces modeling and optimization in turning AISI D6 tool steel through experimental design analysis and soft computing*. IAENG Transactions on Engineering Sciences: Special Issue of the International MultiConference of Engineers and Computer Scientists 2013 and World Congress on Engineering 2013, Edited by Sio-Iong Ao, Alan Hoi-Shou Chan, Hideki Katagiri, Li Xu, 04/2014; CRC Press., ISBN: ISBN 9781138001367. https://doi.org/10.1201/b16763

8. N.M. Vaxevanidis, N.A. Fountas, **Kechagias, J. D.**, D.E. Manolakos: *Estimation of main cutting force and mean surface roughness in turning of AISI D6 tool steel using design of experiments and artificial neural networks*. MACHINING: Operations, technology and management, 01/**2013**: chapter Chapter 9; NOVA SCIENCE PUBLISHERS., ISBN: 978-1-62618-778-8

9. **Kechagias, J. D.**, I. Ntziantzias, N.A. Fountas, N.M. Vaxevanidis: *An investigation into abrasive water jet machining of TRIP sheet steels using Taguchi technique and regression models*. Proceedings of the 37th International MATADOR Conference, 06/**2012**: chapter 5-8: pages 153-156; Springer., ISBN: 978-1-4471-4480-9

10. V. Iakovakis**, Kechagias, J. D.**, G. Petropoulos, S. Maropoulos: *Finite elements analysis of cylindrical copper shelled SLA electrodes*. Innovative Developments in Design and Manufacturing Advanced Research in Virtual and Rapid Prototyping -- Proceedings of VRP4, Oct. **2009**, Leiria, Portugal, 1st Edition 01/2010: chapter Finite elements analysis of cylindrical copper shelled SLA electrodes: pages 651-656; CRC Press., ISBN: 9780429206498, https://doi.org/10.1201/9780203859476-111

Journal (Q1)

(Review papers, Corresponding, Q1)

(FFF process includes metallic filaments)

11. **Kechagias, J.D.**, D. Chaidas, N. Vidakis, K. Salonitis & N.M. Vaxevanidis (**2022**) Key parameters controlling surface quality and dimensional accuracy: a critical review of FFF process, Materials and Manufacturing Processes, https://doi.org/10.1080/10426914.2022.2032144

12. **Kechagias, J.D.**, V. Iakovakis, M. Katsanos, S. Maropoulos (**2008**): *EDM electrode manufacture using rapid tooling: A review*. Journal of Materials Science 04/2008; 43(8):2522-2535. https://doi.org/10.1007/s10853-008-2453-0

(Single Author-FA, Q1)

13. **Kechagias, J. (2024).** Multiparameter signal-to-noise ratio optimization for end milling cutting conditions of aluminium alloy 5083. Int J Adv Manuf Technol 132, 4979–4988. https://doi.org/10.1007/s00170-024-13667-9

14. **Kechagias, J. D. (2024).** Effects of thermomechanical parameters on surface texture in filament materials extrusion: outlook and trends. *F1000Research*, *13*, 1039. https://doi.org/10.12688/f1000research.144965.1

15. **Kechagias, J.D. (2024).** Surface roughness assessment of ABS and PLA filament 3D printing parts: structural parameters experimentation and semi-empirical modelling. Int J Adv Manuf Technol 134, 1935–1946. https://doi.org/10.1007/s00170-024-14232-0

16. **Kechagias, J.D.** (**2024**) 3D printing parametric optimization using the power of Taguchi design: an expository paradigm, Materials and Manufacturing Processes, 39:6, 797-803, https://doi.org/10.1080/10426914.2023.2290258

17. **Kechagias, J.D.** (**2007**): *Investigation of LOM process quality using design of experiments approach*. Rapid Prototyping Journal 10/2007; 13(5):316-323., https://doi.org/10.1108/13552540710824823

18. **Kechagias, J.D.** (**2007**): *An Experimental Investigation of the Surface Roughness of Parts Produced by LOM Process*. Rapid Prototyping Journal 01/2007; 13(1):17-22., https://doi.org/10.1108/13552540710719172

(Two authors, Corresponding, Q1)

19. Zaoutsos, S. P. & **Kechagias, J. D.** (**2024**). Optimizing bonding conditions between multilayer FFF Material Extrusion. Materials and Manufacturing Processes. https://doi.org/10.1080/10426914.2024.2437753

20. **Kechagias, J. D.,** & Zaoutsos, S. P. (**2024**) Effects of 3D-printing processing parameters on FFF parts' porosity: outlook and trends, Materials and Manufacturing Processes, 39:6, 804-814, https://doi.org/10.1080/10426914.2024.2304843

21. **Kechagias, J. D.,** & Zaoutsos, S. P. (**2024**). An assessment of PLA/wood with PLA core sandwich multilayer component tensile strength under different 3D printing conditions. Journal of Manufacturing Processes, 131, 1240-1249. https://doi.org/10.1016/j.jmapro.2024.09.098

22. **Kechagias, J.D.,** Zaoutsos, S.P. (**2024**). An investigation of the effects of ironing parameters on the surface and compression properties of material extrusion components utilizing a hybrid-modeling experimental approach. Prog Addit Manuf 9, 1683–1695. https://doi.org/10.1007/s40964-023-00536-2

23. **Kechagias, J.D.,** Zaoutsos, S.P. (**2023**) Optimising fused filament fabrication surface roughness for a dental implant, Materials and Manufacturing Processes, 38:8, 954-959, https://doi.org/10.1080/10426914.2023.2176870

24. **Kechagias, J.D.,** & Chaidas D. (**2023**) Fused filament fabrication parameter adjustments for sustainable 3D printing, Materials and Manufacturing Processes, 38:8, 933-940, https://doi.org/10.1080/10426914.2023.2176872

25. **Kechagias, J.D.** & Vidakis, N. (**2022**). Parametric optimization of material extrusion 3D printing process: an assessment of Box-Behnken vs. full-factorial experimental approach. Int J Adv Manuf Technol 121, 3163–3172. https://doi.org/10.1007/s00170-022-09532-2

26. Chaidas D. & **Kechagias J.D.** (**2022**) An investigation of PLA/W parts quality fabricated by FFF, Materials and Manufacturing Processes, 37:5, 582-590, https://doi.org/10.1080/10426914.2021.1944193

27. **Kechagias, J.D**., & Iakovakis V. (**2009**): A neural network solution for LOM process performance. International Journal of Advanced Manufacturing Technology 08/2009; 43(11):1214-1222., https://doi.org/10.1007/s00170-008-1800-2

(Three Author, Corresponding author, Q1, Q2, Q3)

28. Aristeidis Tsiolikas, **John Kechagias,** Stefanos Zaoutsos (**2024**). Hybrid fuzzy logic approach for multi-objective optimization in laser-based processes. Int. J. of Mechatronics and Manufacturing Systems. 17(1), 1-20. https://doi.org/10.1504/IJMMS.2024.138109

29. **Kechagias, J. D.,** Chaidas, D., & Spahiu, T. **(2024)**. Decorative 3D printing on textiles using elastomer TPU filament under different printing conditions. Rapid Prototyping Journal. https://doi.org/10.1108/RPJ-03-2024-0106

30. Fountas, N. A., **Kechagias, J. D.,** & Vaxevanidis, N. M. (**2024**). Swarm intelligence algorithms for optimising sliding wear of nanocomposites. Tribology and Materials, 3(1), 44-45. https://doi.org/10.46793/tribomat.2024.004

31. **J. D. Kechagias**, N. Vidakis & M. Petousis (**2023**) Parameter effects and process modeling of FFF-TPU mechanical response, Materials and Manufacturing Processes, 38:3, 341-351, https://doi.org/10.1080/10426914.2021.2001523

32. N. Vidakis, M. Petousis & **J.D. Kechagias** (**2022**) Parameter effects and process modelling of Polyamide 12 3D-printed parts strength and toughness, Materials and Manufacturing Processes, 37:11, 1358-1369, https://doi.org/10.1080/10426914.2022.2030871

33. Vidakis, N., Petousis, M., & **John Kechagias** (**2022**). A comprehensive investigation of the 3D printing parameters' effects on the mechanical response of polycarbonate in fused filament fabrication. *Progress in Additive Manufacturing*, https://doi.org/10.1007/s40964-021-00258-3.

34. Ninikas, K., **Kechagias, J.,** & Salonitis, K. (**2021**). The impact of process parameters on surface roughness and dimensional accuracy during CO2 laser cutting of PMMA thin sheets. *Journal of Manufacturing and Materials Processing*, *5*(3), 74. https://doi.org/10.3390/jmmp5030074

35. **Kechagias, J.D**., G. Petropoulos, N.M. Vaxevanidis (**2012**): *Application of Taguchi design for quality characterization of abrasive water jet machining of TRIP sheet steels*. International Journal of Advanced Manufacturing Technology 04/2012; 62(5-8):635-643. https://doi.org/10.1007/s00170-011-3815-3

36. **Kechagias, J.D**., S. Maropoulos, S. Karagiannis (**2004**): *Process build-time estimator algorithm for laminated object manufacturing*. Rapid Prototyping Journal 12/2004; 10(5):297-304., https://doi.org/10.1108/13552540410562331

(Four Authors, Q1, Corresponding author)

37. Thirugnanasambandam, A., Dutta, H., Gnanasagaran, C.L. and **Kechagias J. (2024).** Development of 3D printed novel multi-polymer component based on blended filaments of polylactic acid and polyethylene terephthalate glycol. *Prog Addit Manuf* (2024). https://doi.org/10.1007/s40964-024-00695-w

38. **Kechagias, J.D.,** Zaoutsos, S.P., Fountas, N.A., Vaxevanidis N. **(2024)**. Experimental investigation and neural network development for modeling tensile properties of polymethyl methacrylate (PMMA) filament material. Int J Adv Manuf Technol 134, 4387–4398. https://doi.org/10.1007/s00170-024-14402-0

39. **Kechagias, J.D.;** Fountas, N.A.; Ninikas, K.; Vaxevanidis, N.M. (**2023**)**.** Kerf Geometry and Surface Roughness Optimization in CO2 Laser Processing of FFF Plates Utilizing Neural Networks and Genetic Algorithms Approaches. J. Manuf. Mater. Process., 7, 77. https://doi.org/10.3390/jmmp7020077

40. **Kechagias J. D**., Zaoutsos, S. P., Chaidas, D., & Vidakis, N. (**2022**). Multi-parameter optimization of PLA/Coconut wood compound for Fused Filament Fabrication using Robust Design. *The International Journal of Advanced Manufacturing Technology*, 119, 4317–4328 (2022). https://doi.org/10.1007/s00170-022-08679-2.

41. **Kechagias J. D.,** N. Vidakis, M. Petousis & N. Mountakis (2022) A multi-parametric process evaluation of the mechanical response of PLA in FFF 3D printing, *Materials and Manufacturing Processes*, DOI: https://doi.org/10.1080/10426914.2022.2089895

42. **Kechagias, J.D.**, Ninikas, K., Petousis, M., & Vidakis, N. (**2021**). Laser cutting of 3D printed acrylonitrile butadiene styrene plates for dimensional and surface roughness optimization. *The International Journal of Advanced Manufacturing Technology*, 119, 2301–2315 (**2022**). https://doi.org/10.1007/s00170-021-08350-2

(First Author, Q1)

43. **Kechagias, J.D.,** Fountas, N.A., Papantoniou, I. et al. Interlaminar bonding assessment in vertical-oriented filament material extrusion bending specimens. Int J Adv Manuf Technol (**2025**). https://doi.org/10.1007/s00170-025-15124-7

44. **Kechagias, J. D.**, Ninikas, K., Vakouftsi, F., Fountas, N. A., Palanisamy, S., Vaxevanidis, N. M. (**2024**). Optimization of laser beam parameters during processing of ASA 3D-printed plates. Int J Adv Manuf Technol, 130, 527–539. https://doi.org/10.1007/s00170-023-12711-4

45. **Kechagias, J.D.,** Vidakis, N., Ninikas, K. Petousis, M., Vaxevanidis, N. (**2023**) Hybrid 3D printing of multifunctional polylactic acid/carbon black nanocomposites made with material extrusion and post-processed with CO2 laser cutting. Int J Adv Manuf Technol 124, 1843–1861. https://doi.org/10.1007/s00170-022-10604-6

46. **Kechagias J. D.**, Tsiolikas, A., Petousis, M., Ninikas, K., Vidakis, N., & Tzounis, L. (**2022**). A robust methodology for optimizing the topology and the learning parameters of an ANN for accurate predictions of laser-cut edges surface roughness. *Simulation Modelling Practice and Theory*, *114*, 102414. https://doi.org/10.1016/j.simpat.2021.102414

47. **Kechagias, J.D.,** Vidakis, N., Ninikas, K. et al. (**2022**) Hybrid 3D printing of multifunctional polylactic acid/carbon black nanocomposites made with material extrusion and post-processed with CO2 laser cutting. Int J Adv Manuf Technol. https://doi.org/10.1007/s00170-022-10604-6

48. **Kechagias, J. D**., Aslani, K. E., Fountas, N. A., Vaxevanidis, N. M., & Manolakos, D. E. (**2020**). A comparative investigation of Taguchi and full factorial design for machinability prediction in turning of a titanium alloy. Measurement, 151, 107213. https://doi.org/10.1016/j.measurement.2019.107213

49. **J.D. Kechagias,** N.A. Fountas, K. Ninikas, M. Petousis, N. Vidakis & N. Vaxevanidis (**2022**) Surface characteristics investigation of 3D-printed PET-G plates during CO2 laser cutting, Materials and Manufacturing Processes, 37:11, 1347-1357, https://doi.org/10.1080/10426914.2021.1981933

50. **J.D. Kechagias,** K. Ninikas, M. Petousis, N. Vidakis & N. Vaxevanidis (**2021**) An investigation of surface quality characteristics of 3D printed PLA plates cut by CO2 laser using experimental design, Materials and Manufacturing Processes, 36:13, 1544-1553, https://doi.org/10.1080/10426914.2021.1906892

(Corresponding Author, Q1)

51. Kumar, P., Patel, R., Singh, I., Agrawal, S., & **Kechagias, J. D.** (**2025**). Optimising the fused filament fabrication process employing the experimental design approach: An expository paradigm under cold weather conditions and lightweight specimens. Next Materials, 7, 100387. https://doi.org/10.1016/j.nxmate.2024.100387

52. Petousis, M., Ninikas, K., Vidakis, N., Mountakis, N., & **Kechagias, J. D.** (**2023**). Multifunctional PLA/CNTs nanocomposites hybrid 3D printing integrating material extrusion and CO2 laser cutting. Journal of Manufacturing Processes, 86, 237-252. https://doi.org/10.1016/j.jmapro.2022.12.060

53. N. Vidakis, **J.D. Kechagias,** M. Petousis, F. Vakouftsi & N. Mountakis (**2023**) The effects of FFF 3D printing parameters on energy consumption, Materials and Manufacturing Processes, 38:8, 915-932, https://doi.org/10.1080/10426914.2022.2105882

54. K-E. Aslani, D. Chaidas, **J.D. Kechagias**, P. Kyratsis, K. Salonitis (**2020**): *Quality performance evaluation of thin walled PLA 3D printed parts using Taguchi method and Grey Relational Analysis*, J. Manuf. Mater. Process. 2020, 4(2), 47. https://doi.org/10.3390/jmmp4020047

(Other, Q1)

55. Fountas, N. A., Zaoutsos, S., Chaidas, D., **Kechagias, J. D.,** & Vaxevanidis, N. M. (2023). Statistical modelling and optimization of mechanical properties for PLA and PLA/Wood FDM materials. Materials Today: Proceedings, 93, 824-830. https://doi.org/10.1016/j.matpr.2023.08.276

56. Parvez, M., Mohammad, A.B., Ghali, V.S.R. et al. **(2023)** Deep learning-based sustainable subsurface anomaly detection in Barker-coded thermal wave imaging. Int J Adv Manuf Technol. https://doi.org/10.1007/s00170-023-11753-y

57. Vidakis, N.; Petousis, M.; Mountakis, N.; **Kechagias, J.D.** (**2022)** Optimization of Friction Stir Welding Parameters in Hybrid Additive Manufacturing: Weldability of 3D-Printed Poly(methyl methacrylate) Plates. J. Manuf. Mater. Process., 6, 77. https://doi.org/10.3390/jmmp6040077

58. Vidakis, N., Petousis, M., Mountakis, N., **Kechagias, J.** (**2022**) Material extrusion 3D printing and friction stir welding: an insight into the weldability of polylactic acid plates based on a full factorial design. *Int J Adv Manuf Technol*. https://doi.org/10.1007/s00170-022-09595-1

59. Vidakis, N.; Petousis, M.; Korlos, A.; Mountakis, N.; **Kechagias, J.D**. (**2022**) Friction Stir Welding Optimization of 3D-Printed Acrylonitrile Butadiene Styrene in Hybrid Additive Manufacturing. *Polymers*, 14, 2474. https://doi.org/10.3390/polym14122474

60. Vidakis, N., Petousis, M., Mountakis, N., Maravelakis, E., Zaoutsos, S. & **Kechagias, J. (2022)** Mechanical response assessment of antibacterial PA12/TiO2 3D printed parts: parameters optimization through artificial neural networks modeling. *Int J Adv Manuf Technol* 121, 785–803 (2022). https://doi.org/10.1007/s00170-022-09376-w

61. S. Karagiannis, P. Stavropoulos, C. Ziogas, **J. Kechagias** (**2014**): *Prediction of surface roughness magnitude in computer numerical controlled end milling processes using neural networks, by considering a set of influence parameters: An aluminium alloy 5083 case study*. *Proceedings of the Institution of Mechanical Engineers Part B Journal of Engineering Manufacture* 01/2014; 228(2):233-244. https://doi.org/10.1177/0954405413498582

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144. M. Pappas, I. Ntziantzias**, Kechagias, J. D.**, N. Vaxevanidis (**2011**): *Modeling of Abrasive Water Jet Machining using Taguchi Method and Artificial Neural Networks*. Proceedings of the International Conference on Neural Computation Theory and Applications - NCTA 2011, Paris, Fr; 10/2011

145. **Kechagias, J. D.**, C.K. Ziogas, M.K. Pappas, I. Ntziantzias (**2011**): *Parameter Optimization During Finish End Milling of Al Alloy 5083 Using Robust Design*. Proceedings of the World Congress on Engineering - WCE 2011, London, UK; 07/2011

146. M. Pappas, **Kechagias, J. D.,** V. Iakovakis, S. Maropoulos (**2011**): *Surface Roughness Modelling and Optimization in CNC End Milling using Taguchi Design and Neural Networks*. Proceedings of the 3rd International Conference on Agents and Artificial Intelligence - ICAART 2011, Rome, Italy; 01/2011

147. P. Alabey, M. Pappas**, Kechagias, J. D.,** S. Maropoulos (**2010**): *Medical Rapid Prototyping and Manufacturing: Status and Outlook*. Proceedings of the ASME 2010 10th Biennial Conference on Engineering Systems Design and Analysis, Istanbul, Tr; 07/2010, https://doi.org/10.1115/ESDA2010-24361

148. **Kechagias, J. D.,** M. Pappas, S. Karagiannis, G. Petropoulos, V. Iakovakis, S. Maropoulos (**2010**): *An ANN Approach on the Optimization of the Cutting Parameters During CNC Plasma-Arc Cutting*. Proceedings of the ASME 2010 10th Biennial Conference on Engineering Systems Design and Analysis, Istanbul; 07/2010. https://doi.org/10.1115/ESDA2010-24225

149. **Kechagias, J. D.,** V. Iakovakis, G. Petropoulos, S. Maropoulos, S. Karagiannis (**2010**): *Prediction of Surface Roughness in Turning using Orthogonal Matrix Experiment and Neural Networks*. Proceedings of the International Conference on Agents and Artificial Intelligence-ICAART 2010, Valencia, Spain; 01/2010

150. **Kechagias, J. D.,** V. Iakovakis, G. Petropoulos, S. Maropoulos (**2009**): *A parameter design in turning of copper alloy*. Proceedings of the International Conference on Economic Engineering and Manufacturing Systems- ICEEMS2009, Braşov, Rom; 11/2009

151. G. Petropoulos, **Kechagias, J. D.,** V. Iakovakis, S. Maropoulos (**2009**): *Surface roughness investrigation of a reinforced polymer cpmposite*. Proceedings of the International Conference on Economic Engineering and Manufacturing Systems-ICEEMS2009, Brasov, Ro; 11/2009

152. G. Petropoulos, **Kechagias, J. D.,** P. Dasic, V. Iakovakis (**2009**). *Experimental analysis and a neural network solution for surface finish in turning of Ertalon 66 GF-30 composite*. Proceedings of the 9th International Conference "Research and Development in Mechanical Industry" (RaDMI-2009), Vrnjačka Banja, Serbia; 09/2009

153. **Kechagias, J. D.,** V. Iakovakis, K. Katsanos, S. Maropoulos (**2008**): *Rapid electrode manufacture using Stereolithography models - A state of the art*. Proceedings of the International Conference on Economic Engineering and Manufacturing Systems, Brasov, Ro; 03/2008

154. **Kechagias, J. D.,** V. Iakovakis, S. Maropoulos (**2007**). *Using Generalized Regression Neural Network to optimize sloped surface roughness of LOM process*. Proceedings of the International Conference on Economic Engineering and Manufacturing Systems-ICEEMS2007, Braşov, Rom; 10/2007

155. G. Chryssolouris, **Kechagias, J. D.,** J. Kotselis, D. Mourtzis, S. Zannis (**1999**): *Surface Roughness Modeling of the Helisys Laminated Object Manufacturing Process*. Proceedings of the 8th European Conference on Rapid Prototyping and Manufacturing, Nottingham, UK; 01/1999

156. **Kechagias, J. D.,** V. Anagnostopoulos, S. Zervos, G. Chryssolouris (**1997**): *Estimation of build times in Rapid Prototyping processes*. Proceedings of the 6th European Conference on Rapid Prototyping and Manufacturing -EuRP&M1997, University of Nottingham, UK; 01/1997

Book of Abstracts

157. M. Mamouri, **Kechagias, J. D.,** N.M. Vaxevanidis: *Low cost 3D printing of bones and tissues: A review*, International Conference on Chemistry & Materials Science, Athens, Greece; 12/2017

158. K. Kitsakis, N.Petrou, I.Tanos, **Kechagias, J. D.**: *Design and 3d Printing of a Robotic Arm*. Book of Abstracts/3rd International Conference on Cryptography, Cyber Security and Information Warfare, Athens; 05/2016

159. D. Coman, A. Ionescu, **Kechagias, J. D.**: *Numerical Simulations based on Kinematic Model of a Mobile Robot*. 3rd International Conference Advances in Engineering & management (ADEM 2014), Severin, Romania; 9/2014

160. **Kechagias, J. D.,** V. Iakovakis, A. Ionescou, S. Karagiannis, S. Maropoulos: *Predicting layer thickness deformation of the laminated object manufacturing process using the Taguchi design*. The 18th Conference on Applied and Industrial Mathematics, Iasi, Romania; 10/2010

161. P. Moustakas P, **Kechagias, J. D.,** Maropoulos S: *Rapid Tooling applications*. Advances in Engineering & Management - ADEM2010, Severin, Romania; 05/2010

Lecture notes

162. **Kechagias, J. D.:** *Practical Guide entrepreneurship-founded company providing specialized services in the wider manufacturing engineering (Πρακτικός οδηγός επιχειρηματικότητας-Ίδρυση επιχείρησης παροχής εξειδικευμένων υπηρεσιών στον ευρύτερο χώρο της κατασκευαστικής μηχανολογίας).* Edited by P. Fitsilis, 01/2007; **Kleidarithmos** (in Greek language)., ISBN: 978-960-461-301-4

163. V. Iakovakis, **Kechagias, J. D.**: *Αριθμητική Ανάλυση με Πεπερασμένα Στοιχεία - Θεωρία και Πράξη*. 01/2007; Εκδ. ΤΕΙ Thessalias.

164. **Ι. Κεχαγιάς**: CAD IV. 2002, Εκδ. ΤΕΙ Δ.Μ.

Academics

PhD Finished

Apr 2020 – June 2023 **Supervisor: Dr. Dimitrios Haidas**

University of Thessaly, Department of F.W. Science and Design

PhD Title: (3D printing optimization for thin walled PLA/Wood prototypes)

Ποιοτική διερεύνηση (βελτιστοποίηση – μοντελοποίηση) παραμέτρων της τρισδιάστατης εκτύπωσης πολυμερών υλικών για την παραγωγή λεπτότοιχων φυσικών πρωτοτύπων με εφαρμογή στο σχεδιασμό και την κατασκευή διακοσμητικών αντικειμένων εσωτερικού χώρου.

PhD committee

Dec 2021 – present	**Supervisor** of the candidate PhD student **F. Vakouftsi**
	University of Thessaly, Department of F.W. Science and Design
	PhD Title: Optimizing wooden products manufacturing utilizing digital twins
Dec 2021 – present	**Supervisor** of the candidate PhD student **A. Tsiolikas**
	University of Thessaly, Department of F.W. Science and Design
	PhD Title: Hybrid manufacturing optimization using NN modeling and GA for wooden products
Dec 2022 – present	**Supervisor** of the candidate PhD student **K. Kitsakis**
	University of Thessaly, Department of F.W. Science and Design
	PhD Title: 3D printing of large-scale wooden products: assemblies' optimization
Feb 2022 – present	K. Efthimiou, **Board member**
	University of Thessaly, Department of Energy
	PhD Title: Βελτίωση θερμομηχανικών ιδιοτήτων υλικών φιλικών προς το περιβάλλον (green composites) για χρήση σε ενεργειακές υποδομές

PhD Examinator (Cranfield)

Dec 2024	**External Examinator**
	Student no: 279499/1

Courses

Postgraduate

M.Sc. 'Advanced Design, Technology & Management of Wooden Products', FWSD, University of Thessaly (since 2019-current)
- Advanced CAD systems
- Reverse engineering and 3d printing
- 3D Printing

M.Sc. 'CAD/CAM systems and product design' University of West Macedonia
- CAD design

Pre graduate

FWSD, University of Thessaly (since 2020)
- CAD/CAM/CAE
- Design
- Digital Manufacturing

Mechanical Engineering, TEI of Thessaly (2004-2022)
- CNC Machine Tools
- Manufacturing Technology
- Mechanical Drawing
- Mechanical design
- CAD/CAM/CAE
- Finite element method in constructions
- Quality Control and Quality Engineering

Industrial Design, TEI of West Macedonia (1997-2004)

Tenure Professor

- TEI of Western Makedonia, Industrial Design, Kozani (1997-2004)
- TEI of Thessaly, Mechanical Engineering, Larissa (2002-2004)
- University of Thessaly, Mechanical Engineering, Volos (2009-2012)

Erasmus Mobility for Teaching

- Tor Vergata University, Rome, Italy
- Instituto Politécnico de Setúbal, Portugal
- PDPM Indian Institute of Information Technology
- Polytechnic University of Tirana
- University of Bucharest, Ro
- University of Craiova, Ro
- University of Bacau, Ro
- University of Cibiu, LBU, Ro
- TU of Beograd

Student thesis supervisor

- Supervisor of more than 50 student theses in Higher Education

Student thesis evaluator

- Evaluator of student thesis since 2004

Honors

Editorial

Editor in Chief

April 2022	Int. J. of Experimental Design and Process Optimisation (IJEDPO)
Aug 2016	Int. J. of Instrumentation and Measurement (IARAS bub)

Editorial Board member

July 2024-present	Reports in Mechanical Engineering (Scopus; Q1)
2020-present	Advances in Civil Engineering (Scopus, Q2)
2025-present	Materials Science in Additive Manufacturing (Scopus, Q2)
2020-present	AIMS Materials Science (Scopus, Q3)
2024-present	Int. J. of Mechatronics and Manufacturing Systems (Scopus, Q3)
2024-present	Int. J. of Mechanical Engineering and Robotics Research (Scopus, Q3)
2022-present	Clean Technologies & Recycling
2009-2022	Int. J. of Experimental Design and Process Optimisation (Inderscience)
Editor	*Special Issues*
2022	S.I. Ed. Sustainability: Sustainable 3D Printing for Smart Manufacturing and Production
2021	S.I. Ed. AIMS Materials Science: Materials for Additive Manufacturing
2020	S.I. Ed. Sustainability: Sustainable Manufacturing Processes and Machine Tool Technology (MDPI, Scopus)

| 2020 | S.I. Ed. Micromachines: Advanced Manufacturing Technology (MDPI, Scopus) |

Plenary-Invited speaker

| *Dec. 2019* | Plenary Lecture-15th International Conference on HEAT and MASS TRANSFER (HMT '19, 8-10 Dec, Athens) |
| *Sep 2014* | Invited Plenary Lecture: ADEM 2014, Craiova, Ro |

Session Chair

Oct 2013	Session Chair:• WCE 2013-ICMEEM VIII, London, GB
Jan 2010	Session Chair: ICAART 2010, Valencia, Spain
Nov 2009	Session Chair: International Conference on Economic Engineering and Manufacturing
Nov 2007	Systems-University of Braşov, Rom

Conferences Board Member

1. International Scientific Committee (http://www.imane.ro/committees/)
2. International Scientific Committee (https://web.ihu.edu.gr/icmmen20/#committee)
3. International Scientific Committees: CMSAM Reviewer (www.4th-cmsam.org/)
4. Scientific Committee: ICATA 2019 Cibiu Ro
5. Scientific Advisory Committee ADEM 2010, 12, 14 (3rdInternational ConferenceADVANCESIN ENGINEERING&MANAGEMENT, Craiova, Ro)
6. Scientific Committee: International Conference on Economic Engineering and Manufacturing Systems (since 2007)
7. Scientific Advisory Committee: WSEAS

Scholarships

| *Sep 2013* | Scholarship: IKY - SCIENTIFIC VISIT at Brno UT |

Grants

June 2023	*NerveRepack-HORIZON-KDT-JU-2022: Member of UTH team*
Jan 2023	*Erasmus KA 171 (2022-2024) EU Member states and third countries (UTH-Tirana)*
Jan 2024	*Erasmus KA 171 (2022-2024) EU Member states and third countries (IIITDM Jabalpur-India)*
Jan 2014	Archimedes III-The effect of tolerances in machining and in assembly process-GSRT-TEI of WM
Mar 2007	Please Enter - Encouraging innovative applications and courses for students of TEI of Larissa and Lamia-GSRT-TEI LARISSAS
Apr 2006	Advanced e-learning services at TEI of Larissa-GSRT-TEI LARISSAS
Dec 1999	BRPR-CT98-0741-VIRTUE-Virtual reality environment for the simulation of critical industrial processes involving human intervention-Un Patras/EE
Jun 1998	ESPRIT PROJECT No 26498 Integration of Business Function in Manufacturing – A best practice approach-Un Patras/EE

May 1998	BRST-CT97-5145 Development of a high power laser based machine for the production of moulds form laminations-Un Patras/EE
Nov 1997	ΑΡΤΕΜΙΣ Ολοκληρωμένα συστήματα παρακολούθησης παραγωγικής διαδικασίας στην χαρτοβιομηχανία (ΓΓΕΤ-ΕΠΕΤ ΙΙ)-Un Patras/EE
Jun 1997	BRPR CT96-0283-INTEGRITY Integration of heat treatment into machine-tools by using advanced grinding technology-Un Patras/EE
Mar 1997	ESPRIT PROJECT N.22367-QUETA Quality engineering tools for assemply and small bactches manufacturing-
Jun 1996	BRPR-CT95-0066 Digital Mock-Up process for product conception and downstream processes-DMU-Un Patras/EE
May 1996	FLAME Μηχανολογία ευέλικτης συναρμολόγησης και κατασκευής (ΓΓΕΤ-ΕΠΕΤ ΙΙ)-Un Patras
Feb 1996	ESPRIT PROJECT N. 20903 (RIDER) Real time decision making in manufacturing - Un Patras/EE
Dec 1995	RETEX Μελέτη σχεδιασμού και εγκατάστασης της μεθόδου ταχείας πρωτοτυποποίησης για την κατασκευή μοντέλων καθισμάτων- GSRT-Un Patras

Awards

June 2023	SME-JMP Journals outstanding Reviewers (Journal of Manufacturing Processes-Q1)
Nov 2009	Certificate of Appreciation (in recognition of high scientific contribution and loyalty to Int Conf on Economic Engineering and Manufacturing Systems, Brasov, Rom)
Sep 2016	Best Paper Award: (Paper title: Tolerance Analysis of 3D MJM parts according to IT grade. Authors: Kostas Kitsakis John Kechagias, Nikolaos M. Vaxevanidis and Dimitrios Giagopoulos)

Evaluator

May 2019	Evaluator (RIS)
Jan 2018	Evaluator ESPA 2014-20 (EDBM)
Jan 2011	Evaluator (EYDE-ETAK) synergasia

Coordinator

2014-2018	Erasmus Department Coordinator

Administrative

Nov. 2013 – Aug. 2016 & *Mar. 2018 – Aug. 2018*	**Department Head** Technological Educational Institute of Thessaly, Department of Mechanical Engineering, Larissa, Greece
Sep. 2008 – Aug. 2011	**Construction Sector Head** Technological Educational Institute of Thessaly, Department of Mechanical Engineering, Larissa, Greece
Sep 2004 – present	**Head of the Laboratory for Manufacturing Processes and Machine Tools - LMP&MT** Technological Educational Institute of Thessaly, Department of Mechanical Engineering, Larissa, Greece
2009-2012	**OMEA Member**

2024-present	Research Ethics and Ethics Committee
	University of Western Macedonia
Sep. 2014 – Aug. 2016	**TEI assembly member**
Mar. 2018 – Aug. 2018	Technological Educational Institute of Thessaly, Larissa, Greece
Acad. Year 2007-2008	**TEI research committee (member)**
Jun. 2012 – Sep. 2018	Member of the Assembly of Special Composition
	Member of the Board of the Institute of Lifelong Learning (IDVE)
	Education and Research Committee Member of the Special Account for Research Grants