Curriculum Vitae

John D. Kechagias

PhD. Mechanical Engineering and Aeronautics
Current Position: Professor (Full), FWSD, UTH
Speciality Area: Automatic Machine Tools (CNC)

Personal information

Address	Department of Forestry, Wood Science and Design, University of Thessaly, 43100 Karditsa, Greece
E-mail	jkechag@uth.gr : jkechag@teilar.gr; jhnkchgs@gmail.com
Web pages	https://fwsd.uth.gr/en/teams/kechagias/ https://www.teilar.gr/person_en.php?pid=153 http://scholar.google.com/citations?user=euU9evwAAAAJ&hl=en https://www.scopus.com/authid/detail.uri?authorId=6506884564 https://www.webofscience.com/wos/author/record/S-7998-2019
Nationality	Hellenic
Date of Birth	1971
Place of Residence	Thessaly

Outline

- The broader scientific field of Dr. Kechagias is AUTOMATIONS-MACHINE TOOLS-CNC-MATERIALS-MANUFACTURING-SYSTEMS. It includes CNC MACHINES, AUTOMATIONS, CONTROL, TRANSFER FUNCIONS, VIBRATIONS, ADVANCED MATERIALS, PROCESSING, OPTIMISATION, METALS, COMPOSITES, PLASTICS, CERAMICS, STRUCTURE AND MECHANICAL PROPERTIES, EXPERIMENTAL DESIGN, ARTIFICIAL NEURAL NETWORKS and MACHINE LEARNING.

- 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 modelling, Laboratory for Manufacturing Systems and Automation (Director: Prof. G. Chryssolouris). Then, he was employed on several research projects funded by the European Union at the University of Patras, and he joined TEI Thessaly in October 2004 in the Mechanical Engineering Department. In October 2020, he moved to the Dept. of FWSD at the University of Thessaly, where he is the Design and Manufacturing Laboratory Director.

- He made an outstanding contribution during his PhD in the Laboratory for Manufacturing Systems, where he participated in many International projects (1993-2001). Unique advanced modelling methodologies have been developed in this scope by Dr Kechagias in Rapid Manufacturing that inspired many international researchers during the early decade of the 00's. See: (i) Giannatsis et al. (2001). A study of the build-time estimation problem for Stereolithography systems. Robotics and Computer-Integrated Manufacturing, 17(4), 295-304, and (ii) Campbell et al. (2002). Surface roughness visualisation for rapid prototyping models. Computer-Aided Design, 34(10), 717-725.

- As a Professor at the TEI of Thessaly, he continues to contribute to the science of Materials and Manufacturing with quality manuscripts. He has prepared more than ten high-quality proposals, of which only a few won funding.
- Among the *World's Top 2% most cited Scientists in 2021 and 2022* in the field of ***MATERIALS and INDUSTRIAL AUTOMATIONS*** (Scopus, Stanford's list)
- **SME Journal Awards**: Journal of Manufacturing Processes **Outstanding Reviewers (2022)** (https://www.sme.org/aboutsme/awards/sme-journal-awards/)
- Four published manuscripts in High-impact Journals as a single Author.
- FWCI indices (Scopus) are about 3.5 times higher than the average.
- His expertise is proven by the WoS database, where he has records of more than 500 reviews in many archival peer-reviewed Journals, i.e., Nature Communication, Additive Manufacturing, Material and Manufacturing Processes, and Scientific Reports, to name a few.
- 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.
- He has been the Head of the established Design and Manufacturing Lab of the FWSD department since 2000.
- One PhD finished (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).
- He has authored a book about automatic CNC machine tools and more than 140 research papers in international journals, book chapters, and conferences, of which 96 are indexed in Scopus with H-29 or H25, excluding self-citations (Jan 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 of the AIMS Materials Science (AIMS press, IF:1.2)
- Editorial Board member of the Clean Technologies & Recycling (AIMS press)
- Academic Editor of the Advances of Civil Engineering Journal (Hindawi, Q2).
- Editor records to the following peer-reviewed Journals:
  (i) Advances of Civil Engineering Journal (Hindawi, Scopus, Q2),
  (ii) Sustainability (MDPI, Q1),
  (iii) Micromachines (MDPI, Q2), and
  (iv) AIMS Materials Science (AIMS Press, Q2).
- Deputy responsible for the UTH team at *NerveRepack-HORIZON-KDT-JU-2022*
- He gave lectures at several Universities with Erasmus programmes inside and outside Europe.
- Best paper award 2016 (IMANEE conf)
- One cover in JMMP (Q1) journal

Cover Story (view full-size image): This study investigated the impact of the laser speed, power, and the position and orientation of the samples, on surface roughness (Ra) and dimensional accuracy (DA) during CO_2 laser cutting of PMMA sheets. A mixed five-parameter fractional factorial design was applied, and thirty-six measurements for the Ra and DA were obtained. The results were analyzed using ANOM, ANOVA, and interaction plots. It was concluded that laser speed is the critical parameter for Ra and DA, resulting in strong interactions with laser power and positioning parameters. It was also shown that Ra values are affected by the orientation of the specimen and can be minimized when samples are aligned in the laser travel direction. Finally, it was proved that lower laser speed improves Ra but reduces DA. **View this paper**

- He has been cited more than 1631 times in WOS

Education

Ph.D.	**University of Patras,** Mechanical Engineering Dept.	*Sep 1995 – Dec 2001*
	Ph.D. in Manufacturing Engineering (grade: 10).	
	PhD title: **Parameter design and modelling of the laminated object manufacturing technique**	
Degree	**University of Patras,** Mechanical Engineering	*Sep 1990 – Jul 1995*
	Grade: 7,49	
1st Year attendance	**University of Patras,** Mathematics	*Sep 1989 – Sep 1990*
	1st Year attendance,	

Degree	**School of Pedagogical & Technological Education (SELETE-ASPAITE)** Ioánnina	*Sep 1999 – Jul 2000*

Skills

Topics	CNC Machine Tools, Automations, Control, Manufacturing, Processes, Materials 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 Camber of Greece (1995) Hellenic Association of Mechanical & Electrical Engineers since (1996) IAENG member (2012) Digital Idea (nonprofit scientific association)

Publications

Journal (Q1)

(Single Author-FA, Q1)

1. **Kechagias, J.D.** (**2024**) Multi−parameter signal−to−noise ratio optimization for end−milling cutting conditions of aluminium alloy 5083, International Journal of Advanced Manufacturing Technology, In production.
2. **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
3. **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
4. **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

Books (peer reviewing)

5. **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

6. **Kechagias, J.D.** (**2022**). Materials for Additive Manufacturing. AIMS Materials Science, 9(6), 785-790. https://doi.org/10.3934/matersci.2022048
7. 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
8. 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

(Review papers, Q1)

9. **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

10. **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

(Two authors, Q1)

11. **John Kechagias** & Stephanos Zaoutsos (**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

12. **Kechagias, J.D.** & Zaoutsos S. (**2023**) An investigation of the effects of ironing parameters on the surface and compression properties of Material Extrusion components utilizing a hybrid-modeling experimental approach. Progress in Additive Manufacturing. https://doi.org/10.1007/s40964-023-00536-2

13. **John D. Kechagias** & Stephanos P. Zaoutsos (**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

14. **John Kechagias** & Dimitrios Chaidas (**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

15. **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

16. Dimitrios Chaidas & **John D. Kechagias** (**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

17. **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

(First Author, Q1)

18. **Kechagias, J. D.**, Ninikas, K., Vakouftsi, F., Fountas, N. A., Palanisamy, S., & Vaxevanidis, N. M. (**2023**). Optimization of laser beam parameters during processing of ASA 3D-printed plates. The International Journal of Advanced Manufacturing Technology, 1-13. https://doi.org/10.1007/s00170-023-12711-4

19. **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

20. **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 (**2023**). https://doi.org/10.1007/s00170-022-10604-6

21. **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

22. **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.

23. **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

24. **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

25. **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

26. **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

27. **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

28. **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

29. **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

30. **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

31. **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

(Corresponding Author, Q1)

32. 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

33. 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

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. 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

36. 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.

37. 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)

38. 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

39. 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

40. 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

41. 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

42. 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

43. 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

44. 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

45. Fountas, N. A., Papantoniou, I., **Kechagias, J. D.,** Manolakos, D. E., & Vaxevanidis, N. M. (**2022**). Modeling and optimization of flexural properties of FDM-processed PET-G specimens using RSM and GWO algorithm. Engineering Failure Analysis, 138, 106340. https://doi.org/10.1016/j.engfailanal.2022.106340

46. Vidakis, N., Petousis, M., Velidakis, E., Korlos, A., **Kechagias, J. D.,** Tsikritzis, D., & Mountakis, N. (**2022**). Medical-Grade Polyamide 12 Nanocomposite Materials for Enhanced Mechanical and Antibacterial Performance in 3D Printing Applications. *Polymers*, *14*(3), 440. https://doi.org/10.3390/polym14030440

47. S. Maropoulos, N. Ridley, **J. Kechagias,** S. Karagiannis (**2004**): *Fracture toughness evaluation of a H.S.L.A. steel*. *Engineering Fracture Mechanics* 08/2004; 71(12):1695-1704., https://doi.org/10.1016/j.engfracmech.2003.08.006

48. P. Saxena, P. Stavropoulos, **J.D. Kechagias**, K. Salonitis (**2020**), *Sustainability assessment for manufacturing operations*, Energies, 13(11), 2730; https://doi.org/10.3390/en13112730

49. N. Vidakis, M. Petousis, A. Maniadi, E. Koudoumas, A. Vairis, **J.D. Kechagias** (**2020**): Sustainable Additive Manufacturing: Mechanical Response of Acrylonitrile-Butadiene-Styrene over Multiple Recycling Processes, Sustainability **2020**, 12(9), 3568. https://doi.org/10.3390/su12093568

Journal Publications (peer reviewed-IF>1)

50. 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 (Accepted)

51. Fountas, N. A., **Kechagias, J. D.,** & Vaxevanidis, N. M. (2023). Optimization of Selective Laser Sintering/Melting Operations by Using a Virus-Evolutionary Genetic Algorithm. Machines, 11(1), 95. https://doi.org/10.3390/machines11010095

52. Vidakis, N., Petousis, M., Mountakis, N., Grammatikos, S., Papadakis, V., **Kechagias, J. D.,** & Das, S. C. (**2022**). On the thermal and mechanical performance of Polycarbonate/Titanium Nitride nanocomposites in Material Extrusion Additive Manufacturing. *Composites Part C: Open Access*, *8*, 100291. https://doi.org/10.1016/j.jcomc.2022.100291

53. Vidakis, N., Petousis, M., Michailidis, N., **Kechagias, J. D.,** Mountakis, N., Argyros, A., ... & Grammatikos, S. (**2022**). High-performance medical-grade resin radically reinforced with cellulose nanofibers for 3D printing. Journal of the Mechanical Behavior of Biomedical Materials, 134, 105408. https://doi.org/10.1016/j.jmbbm.2022.105408

54. Petousis, M.; Vidakis, N.; Mountakis, **Kechagias, J.,** et al (**2022**) On the thermal and mechanical performance of Polycarbonate / Titanium Nitride nanocomposites in Material Extrusion Additive Manufacturing. *Composite C.* https://doi.org/10.1016/j.jcomc.2022.100291

55. Petousis, M.; Vidakis, N.; Mountakis, N.; Papadakis, V.; Kanellopoulou, S.; Gaganatsiou, A.; Stefanoudakis, N.; **Kechagias, J. (2022)** Multifunctional Material Extrusion 3D-Printed Antibacterial Polylactic Acid (PLA) with Binary Inclusions: The Effect of Cuprous Oxide and Cellulose Nanofibers. *Fibers* 2022, 10, 52. https://doi.org/10.3390/fib10060052

56. **Kechagias, J. D.**, Ninikas, K., Stavropoulos, P. et al. A Generalised Approach on Kerf Geometry Prediction during CO2 Laser cut of PMMA Thin Plates using Neural Networks. *Lasers Manuf. Mater. Process*. 8, 372–393 (**2021**). https://doi.org/10.1007/s40516-021-00152-4

57. Fountas, N. A., Kitsakis, K., Aslani, K. E., **Kechagias, J. D.,** & Vaxevanidis, N. M. (**2021**). An experimental investigation of surface roughness in 3D-printed PLA items using design of experiments. *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, 13506501211059306.

58. N. Vidalis, M. Petousis, N. Vaxevanidis, **Kechagias, J. D.,** (**2020**), Surface Roughness Investigation of Poly-Jet 3D Printing, *Mathematics* 2020, 8(10), 1758; https://doi.org/10.3390/math8101758

59. Petousis, M., Vidakis, N., Velidakis, E., **Kechagias, J. D.,** David, C. N., Papadakis, S., & Mountakis, N. (**2022**). Affordable Biocidal Ultraviolet Cured Cuprous Oxide Filled Vat Photopolymerization Resin Nanocomposites with Enhanced Mechanical Properties. *Biomimetics*, 7(1), 12.

60. Vidakis, N., Petousis, M., Velidakis, E., Spiridaki, M., & **Kechagias, J. D.** (**2021**). Mechanical Performance of Fused Filament Fabricated and 3D-Printed Polycarbonate Polymer and Polycarbonate/Cellulose Nanofiber Nanocomposites. *Fibers*, *9*(11), 74.

61. Vidakis, N., Petousis, M., Velidakis, E., Tzounis, L., Mountakis, N., **Kechagias, J**., & Grammatikos, S. (**2021**). Optimization of the Filler Concentration on Fused Filament Fabrication 3D Printed Polypropylene with Titanium Dioxide Nanocomposites. *Materials*, *14*(11), 3076.

62. Vidakis, N., Petousis, M., Tzounis, L., Maniadi, A., Velidakis, E., Mountakis, N., & **Kechagias, J. D.** (**2021**). Sustainable additive manufacturing: Mechanical response of polyamide 12 over multiple recycling processes. *Materials*, *14*(2), 466.

63. N. Vidakis, M. Petousis, A. Maniadi, E. Koudoumas, G. Kenanakis, C. Romanitan, O. Tutunaru, M. Suchea, **Kechagias, J. D.** (**2020**), The Mechanical and Physical Properties of 3D-Printed Materials Composed of ABS-ZnO Nanocomposites and ABS-ZnO Microcomposites, Micromachines 2020, 11, 615; doi:10.3390/mi11060615.

64. K-E. Aslani, K. Kitsakis, **Kechagias, J. D.**, N.M. Vaxevanidis, D.E. Manolakos (**2020**): *On the application of grey Taguchi method for benchmarking the dimensional accuracy of the PLA fused filament fabrication process*, SN Appl. Sci. 2, 1016 (2020). https://doi.org/10.1007/s42452-020-2823-z

65. K. Kitsakis, **Kechagias, J. D.**, N.M. Vaxevanidis, D. Giagkopoulos (**2016**): *Tolerance assesment of polyjet direct 3D printing process employing the IT grade approach*. Academic Journal of Manufacturing Engineering 12/2016; 14(4):62-69.

66. N. Vidakis, A. Vairis, M. Petousis, K. Savvakis, **Kechagias, J. D.** (**2016**): *Fused Deposition Modelling Parts Tensile Strength Characterisation*. Academic Journal of Manufacturing Engineering 09/2016; 14(2):87-94.

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

Lecture notes

154. **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

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

156. **Ι. Κεχαγιάς**: CAD IV. 2002, Εκδ. TEI Δ.Μ.

Submitted Papers in Journals with IF>1

More than ten papers are in the review process.

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

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
- University of Bucharest, Ro
- University of Craiova, Ro
- University of Bacau, Ro
- University of Cibiu, LBU, Ro

Student thesis supervisor

- Supervisor of more than 50 student thesis in Higher Education

Student thesis evaluator

- Evaluator of student thesis since 2004

Honors

Editorial

April 2022	Editor in Chief: Int. J. of Experimental Design and Process Optimisasion (IJEDPO)
July 2022	Editorial Board member of the AIMS Materials Science (scopus)
2020	Academic Editor, Advances in Civil Engineering (Hindawi, scopus)
2020	Associate Editors: WSEAS Transactions on Environment and Development (scopus)
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)
Aug 2016	Editor-in-Chief, International Journal of Instrumentation and Measurement
2009-2022	Editorial Board member, International Journal of Experimental Design and Process Optimisation (Inderscience)

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 *Nov 2007*	Session Chair: International Conference on Economic Engineering and Manufacturing 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 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

Head

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**

Assembly member

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