

# Curriculum Vitae

John D. Kechagias  
PhD. Mechanical Engineering and Aeronautics  
Current Position: Professor (Full), UTH

## Personal information

Address Department of Forestry, Wood Science and Design, University of Thessaly,  
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## Web pages

<https://fwsd.uth.gr/en/teams/kechagias/>  
[https://www.teilar.gr/person\\_en.php?pid=153](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>

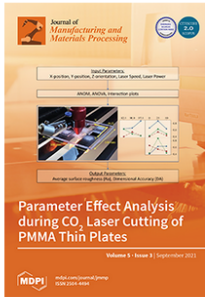
Nationality	Hellenic
Date of Birth	1971
Place of Residence	Thessaly

## Outline

- The broader scientific field of Dr Kechagias is **MATERIALS and MANUFACTURING**. It includes ADVANCED MATERIALS, PROCESSING, OPTIMISATION, METALS, COMPOSITES, PLASTICS, CERAMICS, AUTOMATIONS, 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 diploma in Mechanical and Aeronautical Engineering. He received a PhD diploma from the same University (2001) for research in laser laminated object manufacturing (LOM) process optimization and modelling. 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 modeling methodologies have been developed in this scope by Dr. Kechagias in Rapid Manufacturing that inspired many international researchers during the early decade of the 00s'. 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.

- Unique advanced modeling methodologies have been developed in this scope by Prof. John Kechagias and his students. He has influenced many researchers in the materials-based scientific field, which has been approved by many citations since 1995.
- Among *World's Top 2% most cited Scientists 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 single Author.
- FWCI indices (Scopus) about 4 times higher than the average (First Author: 3.734; Last Author: 3.759; Single Author: 7.409).
- His expertise is proven by the WoS database, where he has records of more than 500 reviews in many archival peer review Journals, i.e., Additive Manufacturing, Material and Manufacturing Processes, and Scientific Reports, to name a few.
- He was the Head of the Mechanical Engineering Department (TEI Larissas) 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 other three PhD theses and many more student thesis in FWSD Dept. and Mechanical Engineering Study Program (TEI).
- He has authored a book and more than 140 research papers in international journals, book chapters, and conferences, of which 90 are indexed in Scopus with H-26 or H20 excludes all self-citations (Oct 2023).
- 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-review 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).
- 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

## **J. Manuf. Mater. Process., Volume 5, Issue 3 (September 2021) – 37 articles**



**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<sub>2</sub> 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 1437 times in WOS



### Education

Ph.D.	<b>University of Patras</b> , Mechanical and Aeronautical Dept. Ph.D. in Manufacturing Engineering (grade: 10). PhD title: <b>Parameter design and modelling of the laminated object manufacturing technique</b>	<i>Sep 1995 – Dec 2001</i>
Degree	<b>University of Patras</b> , Mechanical Engineering Grade: 7,49	<i>Sep 1990 – Jul 1995</i>
1st Year attendance	<b>University of Patras</b> , Mathematics 1st Year attendance,	<i>Sep 1989 – Sep 1990</i>
Degree	<b>School of Pedagogical &amp; Technological Education (SELETE-ASPAITE)</b> Ioánnina	<i>Sep 1999 – Jul 2000</i>

## Skills

*Topics* Materials, Manufacturing Processes, Materials Processing, Quality Engineering, Industrial Engineering, Manufacturing 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 (peer reviewing)

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

### Editorial

2. **Kechagias, J.D. (2022)**. Materials for Additive Manufacturing. AIMS Materials Science, 9(6), 785-790. DOI: 10.3934/matserci.2022048.
3. IJEDPO Editor in Chief: **John Kechagias (7 / 2022)**. An Overview in Experimental Design and Process Optimization.
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.

### Journal (Q1)

#### (Review papers, Q1)

5. **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, DOI: 10.1080/10426914.2022.2032144 (Q1)
6. **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. DOI:10.1007/s10853-008-2453-0 (Q1)

#### (Single Author-FA, Q1)

7. **Kechagias, J.D.** (accepted Oct 2023) 3D printing parametric optimization using the power of Taguchi design: An expository paradigm. Materials and Manufacturing Processes. In Press.
8. **Kechagias, J.D. (2007)**: *Investigation of LOM process quality using design of experiments approach*. Rapid Prototyping Journal 10/2007; 13(5):316-323., DOI:10.1108/13552540710824823
9. **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., DOI:10.1108/13552540710719172

#### (Two authors, Q1)

10. **Kechagias, J.D.** & Zaoutsos S. (accepted oct. 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. (In press).

11. **Kechagias, J.D.** & Chaidas (2023). Fused filament fabrication parameter adjustments for sustainable 3D printing. *MMP. Materials and Manufacturing Processes* (10.1080/10426914.2023.2176870)
12. **Kechagias, J.D.** & Zaoutsos S. (2023). Optimising Fused Filament Fabrication surface roughness for a dental implant. *MMP. Materials and Manufacturing Processes* (10.1080/10426914.2023.2176872)
13. **Kechagias, J.D.** & Vidakis, N. Parametric optimization of material extrusion 3D printing process: an assessment of Box-Behnken vs. full-factorial experimental approach. *Int J Adv Manuf Technol* (2022). <https://doi.org/10.1007/s00170-022-09532-2>
14. Chaidas D. & **Kechagias, J.D.** (2021). An investigation of PLA/W parts quality fabricated by FFF. *Materials and Manufacturing Processes*, 1-9.
15. **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., DOI:10.1007/s00170-008-1800-2

**(First Author, Q1)**

16. **Kechagias, J.D.**; Fountas, N.A.; Ninikas, K.; Vaxevanidis, N.M. Kerf Geometry and Surface Roughness Optimization in CO2 Laser Processing of FFF Plates Utilizing Neural Networks and Genetic Algorithms Approaches. *J. Manuf. Mater. Process.* **2023**, 7, 77. <https://doi.org/10.3390/jmmp7020077>
17. **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>
18. **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. (CA)
19. **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>.
20. **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>
21. **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: [10.1080/10426914.2022.2089895](https://doi.org/10.1080/10426914.2022.2089895)
22. **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., DOI:10.1108/13552540410562331
23. **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>
24. **Kechagias, J.D.**, Vidakis, N., & Petousis, M. (2021). Parameter effects and process modeling of FFF-TPU mechanical response. *Materials and Manufacturing Processes*, DOI: 10.1080/10426914.2021.2001523
25. **Kechagias, J.D.**, K-E. Aslani, N.A. Fountas, N.M. Vaxevanidis, D.E. Manolakos (2020): *A comparative investigation of Taguchi and full factorial design for machinability prediction in turning of a titanium alloy*. *Measurement* 151/2020. DOI:10.1016/j.measurement.2019.107213
26. **Kechagias, J.D.**, Fountas, N. A., Ninikas, K., Petousis, M., Vidakis, N., & Vaxevanidis, N. (2021). Surface characteristics investigation of 3D-printed PET-G plates during CO2 laser cutting. *Materials and Manufacturing Processes*, 1-11.

27. **Kechagias, J.D.**, Ninikas, K., Petousis, M., Vidakis, N., & Vaxevanidis, N. (2021). An investigation of surface quality characteristics of 3D printed PLA plates cut by CO2 laser using experimental design. *Materials and Manufacturing Processes*, 1-10.
28. **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. DOI:10.1007/s00170-011-3815-3

**(Corresponding Author, Q1)**

29. 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.
30. Vidakis, N., **Kechagias J. D.**, Petousis, M., Vakouftsi, F., Mountakis, N. (2022) The effects of FFF 3D printing parameters on energy consumption, *Materials and Manufacturing Processes. In Press*.
31. 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.
32. Vidakis, N., Petousis, M., & **John Kechagias** (2022). Parameter effects and process modelling of Polyamide 12 3D-printed parts strength and toughness. *Materials and Manufacturing Processes*, 1-12.
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. 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)**

35. 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*.
36. 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>
37. 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>
38. 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>
39. 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>
40. Vidakis, N., Petousis, M., Mountakis, N., Marvelakis, 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>
41. 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. DOI:10.1177/0954405413498582

42. 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*, 106340.
43. 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.
44. 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., DOI:10.1016/j.engfracmech.2003.08.006
45. 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>
46. 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>2, Q2 or Q3)

47. 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.
48. 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>
49. 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>
50. 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>
51. 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>
52. **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>
53. 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.
54. 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>.
55. 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.

56. 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.
57. 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.
58. 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.
59. N. Vidakis, M. Petousis, A. Maniadi, E. Koudoumas, G. Kenanakis, C. Romanitan, O. Tutunaru, M. Suche, **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.
60. 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>
61. 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.
62. 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.
63. N.M. Vaxevanidis, N.A. Fountas, A. Koutsomichalis, **Kechagias, J. D.** (2018): *Experimental investigation of machinability parameters in turning of CuZn39Pb3 brass alloy*, *Procedia Structural Integrity*. DOI:10.1016/j.prostr.2018.09.046
64. N.A. Fountas, **Kechagias, J. D.**, D.E. Manolakos, N.M. Vaxevanidis (2020), Single and multi-objective optimization of FDM-based additive manufacturing using intelligent evolutionary algorithms, *Procedia Manufacturing*. <https://doi.org/10.1016/j.promfg.2020.10.104>
65. N. Fountas, A. Koutsomichalis, **Kechagias, J. D.**, N.M. Vaxevanidis (2019): *Multi-response optimization of CuZn39Pb3 brass alloy turning by implementing Grey Wolf algorithm*. *Frattura ed Integrità Strutturale* 09/2019; 50(1):584-594. DOI:10.3221/IGF-ESIS.50.49
66. N.M. Vaxevanidis, **Kechagias, J. D.**, N.A. Fountas, D.E. Manolakos (2015): *Evaluation of Machinability in Turning of Engineering Alloys by Applying Artificial Neural Networks*. *The Open Construction and Building Technology Journal* 01/2015; 8(1):389-399. DOI:10.2174/1874836801408010389
67. N.A. Fountas, I. Ntziantzias, **Kechagias, J. D.**, A. Koutsomichalis, J.P. Davim, N.M. Vaxevanidis (2013): *Prediction of Cutting Forces during Turning PA66 GF-30 Glass Fiber Reinforced Polyamide by Soft Computing Techniques*. *Materials Science Forum* 07/2013; 766:37-58. DOI:10.4028/www.scientific.net/MSF.766.37
68. V. Iakovakis, **Kechagias, J. D.**, G. Petropoulos, S. Maropoulos (2011): *The Impact of FEM Modeling Parameters on the Computed Thermo-Mechanical Behavior of SLA Copper Shelled Electrodes*. *International Journal of Manufacturing, Materials, and Mechanical Engineering* 07/2011; 1(3):21-30. DOI:10.4018/ijmmme.2011070103

**Peer-reviewed with DOI:**

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#### Academics

##### PhD Finished

Apr 2020 – June 2023 **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

Mechanical Engineering, TEI of Thessaly (2004-2022)

- Programming 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 Sibiu, 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 Optimisation (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* 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/](http://www.4th-cmsam.org/))
4. Scientific Committee: ICATA 2019 Sibiu Ro
5. Scientific Advisory Committee ADEM 2010, 12, 14 (3rd International Conference ADVANCES IN 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 (ΓΤΕΤ-ΕΠΙΕΤ II)-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 assembly and small batches 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 (ΓΤΕΤ-ΕΠΙΕΤ II)-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