

# Curriculum Vitae

Prof. John (Ioannis) D. Kechagias  
PhD. Mechanical Engineering and Aeronautics  
Current Position: University of Thessaly, FWSD Department

## Personal information

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<http://scholar.google.com/citations?user=euU9evwAAAAJ&hl=en>  
<https://publons.com/researcher/3004245/john-kechagias/>  
<https://www.scopus.com/authid/detail.uri?authorId=6506884564>

Nationality Hellenic

Date of Birth 1971

Place of Residence Thessaly

## Outline

- John D. Kechagias graduated from the University of Patras in 1995 with the diploma of Mechanical and Aeronautical Engineer. He received a Ph.D. diploma from the same University (2001) for research in 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 Department of Forestry Wood Sciences & Design at the University of Thessaly where he is the Director of the Design and Manufacturing Laboratory. He has published numerous articles in the fields of systems, experimental design, quality engineering, and optimization, with a particular focus on robust design applied in materials and manufacturing processes, including conventional and non-conventional machining and rapid prototyping. He is currently appointed Editor-in-Chief of the International Journal of Experimental Design and Process Optimization (IJEDPO).
- He has authored a book and more than 100 research papers in international journals, book chapters, and conferences.
- 'First' and the 'Corresponding' author of more than seventeen 'Q1' Journal papers (2 'alone' Author).
- Editor in Chief: Int J of Experimental Design and Process Optimisation-IJDPO Inderscience (May 2022-present).
- Editorial Board Member: Int J of Experimental Design and Process Optimisation-IJDPO Inderscience, since (2008-2022).
- Academic Editor of the Advances of Civil Engineering Journal (Hindawi, Q2).
- Associate Editor: WSEAS Transactions on Environment and Development (Q3)
- 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 has acted as a reviewer in more than 300 manuscripts in more than 54 high-impact journals recorded in Publons.
- He gave lectures at several Universities.
- His studies (scientific manuscripts in Journals and Conferences) have more than 1450 citations originating from Google scholar (H-22).
- Scopus: Records:67; Citations: 808; H-18; without all co-authors self cit. H-12; First Author: 22; Aver C/R=12

## 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>
<i>Degree</i>	<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>
<i>Degree</i>	<b>School of Pedagogical &amp; Technological Education (SELETE-ASPAITE)</b> Ioánnina	<i>Sep 1999 – Jul 2000</i>

## Skills

*Topics* Quality Engineering, Industrial Engineering, Manufacturing Systems, Manufacturing Processes, Materials Processing, Machining, Advanced Manufacturing, Additive Manufacturing, Taguchi, DOE, CCD Method, Regression, Experiments, Data analysis, 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 (non profit scientific association)

## Publications

### Books (peer reviewing)

1. Kechagias John: *Εργαλειομηχανές Ψηφιακής Καθοδήγησης (CNC Machine Tools: Theory & Practice)*. 1 01/2009; **ION**, in Greek language., ISBN: 978-960-411-673-7

### Editorial

2. IJEDPO Editor in Chief: **John Kechagias (7 / 2022)**. An Overview in Experimental Design and Process Optimization (It will published in next IJEDPO issue).

3. C. Chivu, R.M. Rio-Belver, **J.D. Kechagias (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)

4. **John Kechagias**, 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)
5. **John Kechagias**, 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)

##### (First & Alone Author-FA, Q1)

6. **John Kechagias (2007)**: *Investigation of LOM process quality using design of experiments approach*. *Rapid Prototyping Journal* 10/2007; 13(5):316-323., DOI:10.1108/13552540710824823
7. **John Kechagias (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

##### (FA & Corresponding Author-CA, Q1)

8. **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)
9. **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>
10. **John Kechagias**, 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
11. **John Kechagias**, 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>
12. **John Kechagias**, 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
13. **John Kechagias**, K-E. Aslani, N.A. Fountas, N.M. Vaxevanidis, D.E. Manolagos (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
14. **John Kechagias**, 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.
15. **John Kechagias**, 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.
16. **John Kechagias**, 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
17. **John Kechagias**, V. Iakovakis (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

##### (FA or Ph.D. Supervisor or CA, Q1)

18. 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.
19. **John Kechagias**, 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)
20. Dimitrios Chaidas & **John Kechagias** (2021). An investigation of PLA/W parts quality fabricated by FFF. *Materials and Manufacturing Processes*, 1-9.
21. **John Kechagias**, 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>.
22. K-E. Aslani, D. Haidas, **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>
23. 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. (CA)
24. 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.
25. 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>.

**(Author in Team working, Q1)**

26. Vidakis, N., Petousis, M., Mountakis, N., **Kechagias, J.** 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* (2022). <https://doi.org/10.1007/s00170-022-09595-1>
27. Vidakis, N.; Petousis, M.; Korlos, A.; Mountakis, N.; **Kechagias, J.D.** Friction Stir Welding Optimization of 3D-Printed Acrylonitrile Butadiene Styrene in Hybrid Additive Manufacturing. *Polymers* **2022**, 14, 2474. <https://doi.org/10.3390/polym14122474>
28. 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>
29. Fountas, N. A., Papantoniou, I., **Kechagias, J. D.**, Manolacos, 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.
30. 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.
31. 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
32. 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

33. 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>
34. 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 reviewing-IF>2, Q2 or Q3)

35. 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>
36. 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>
37. **John Kechagias**, 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>
38. 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.
39. N. Vidalis, M. Petousis, N. Vaxevanidis, **J. Kechagias** (2020), Surface Roughness Investigation of Poly-Jet 3D Printing, *Mathematics* 2020, 8(10), 1758; <https://doi.org/10.3390/math8101758>.
40. 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.
41. 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.
42. 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.
43. 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.
44. N. Vidakis, M. Petousis, A. Maniadi, E. Koudoumas, G. Kenanakis, C. Romanitan, O. Tutunaru, M. Sucheas, **J.D. Kechagias** (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](https://doi.org/10.3390/mi11060615).
45. K-E. Aslani, K. Kitsakis, **J.D. Kechagias**, N.M. Vaxevanidis, D.E. Manolacos (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>
46. K. Kitsakis, **J.D. Kechagias**, 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.
47. N. Vidakis, A. Vairis, M. Petousis, K. Savvakis, **J. Kechagias** (2016): *Fused Deposition Modelling Parts Tensile Strength Characterisation*. *Academic Journal of Manufacturing Engineering* 09/2016; 14(2):87-94.
48. N.M. Vaxevanidis, N.A. Fountas, A. Koutsomichalis, J.D. Kechagias (2018): *Experimental investigation of machinability parameters in turning of CuZn39Pb3 brass alloy*, *Procedia Structural Integrity*. DOI:10.1016/j.prostr.2018.09.046

49. N.A. Fountas, **J.D. Kechagias**, 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>
50. N. Fountas, A. Koutsomichalis, **J.D. Kechagias**, 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
51. N.M. Vaxevanidis, **J.D. Kechagias**, 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
52. N.A. Fountas, I. Ntziantzias, **J.D. Kechagias**, 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
53. V. Iakovakis, **J.D. Kechagias**, 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-reviewing with DOI or not:

54. Fountas, N. A., **Kechagias, J. D.**, Tsiolikas, A. C., Vaxevanidis, N. M., & Education, T. (2020). Multi-objective optimization of printing time and shape accuracy for FDM-fabricated ABS parts. *Metaheuristic. Comput. Appl*, 1(2), 115-129.
55. **J.D. Kechagias**, K. Kitsakis, N.M. Vaxevanidis (2017): *Comparison of Full Versus Fractional Factorial Experimental Design for the Prediction of Cutting Forces in Turning of a Titanium Alloy: A Case Study*. **International Journal of Materials**, Volume 4, ISSN: 2313-0555.
56. A. Tsiolikas, J.D. Kechagias, K. Salonitis, N. Mastorakis (2016): *Optimization of cut surface quality during CNC Plasma Arc Cutting process*. **International Journal of Systems Applications, Engineering & development**, Vol 10, pp.305-308
57. D. Chaidas, N. Mastorakis, **J. Kechagias** (2016): *The Impact of Temperature Changing on Dimensional Accuracy of FFF process*. **International Journal of Applied Physics**, Vol 1, 1-5
58. **J.D. Kechagias**, M. Billis, S. Maropoulos (2010): *A parameter design of CNC plasma-arc cutting of carbon steel plates using robust design*. *International Journal of Experimental Design and Process Optimisation*, 01/2010; 1(4):315-326. DOI:10.1504/IJEDPO.2010.034988
59. **J.D. Kechagias**, G. Petropoulos, V. Iakovakis, S. Maropoulos (2009): *An investigation of surface texture parameters during turning of a reinforced polymer composite using design of experiments and analysis*. *International Journal of Experimental Design and Process Optimisation*, 01/2009; 1(2/3):164-177. DOI:10.1504/IJEDPO.2009.030317
60. **J.D. Kechagias**, V. Iakovakis, V. Tsouras (2006): *Manufacturing of EDM electrodes using RP techniques- a review (Παραγωγή ηλεκτροδίων EDM χρησιμοποιώντας Τεχνικές Ταχείας Πρωτοτυποποίησης)*.
61. G. Chryssolouris, **J.D. Kechagias**, P. Moustakas, E. Koutras (2003): *An experimental investigation of the tensile strength of parts produced by laminated object manufacturing (LOM) process*. *CIRP Journal of Manufacturing Systems* (In Proceedings of the 34th CIRP International Seminar on Manufacturing Systems, 2001, Athens), Athens, GR; 11/2003

#### Book Chapters (peer reviewing)

62. N.M. Vaxevanidis, N.A. Fountas, **J.D. Kechagias**, D.E. Manolakos: *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*, 01/2016: chapter 5: pages 95-118; De Gruyter., ISBN: 9783110451740, DOI:10.1515/9783110451740-008

63. N.M. Vaxevanidis, N.A. Fountas, **J.D. Kechagias**, D.E. Manolakos: *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, DOI:10.1201/b16763-17
64. N.M. Vaxevanidis, N.A. Fountas, **J.D. Kechagias**, 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
65. **J.D. Kechagias**, 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
66. V. Iakovakis, **J.D. Kechagias**, 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, DOI:10.1201/9780203859476-111

Conference Proceedings (peer reviewing or scopus)

67. Fountas, N. A., Papantoniou, I., **Kechagias, J. D.**, Manolakos, D. E., & Vaxevanidis, N. M. (2021). Experimental investigation on flexural properties of FDM-processed PET-G specimen using response surface methodology. In MATEC Web of Conferences (Vol. 349, p. 01008). EDP Sciences.
68. **Kechagias, J.**, Kitsakis, K., Zacharias, A., Theocharis, K., Aslani, K. E., Petousis, M., ... & Vaxevanidis, N. M. (2021, February). Direct 3D Printing of a hand splint using Reverse Engineering. In IOP Conference Series: Materials Science and Engineering (Vol. 1037, No. 1, p. 012019). IOP Publishing.
69. **J.D. Kechagias**, K. Kitsakis, A Zacharias, K Theocharis, K-E Aslani, M Petousis, N Fountas and N.M. Vaxevanidis (2020): Direct 3D Printing of a hand splint using Reverse Engineering, IMANEE2020 conf (accepted).
70. K-E. Aslani, A. Korlos, **J.D. Kechagias**, K. Salonitis (2020): Impact of process parameters on dimensional accuracy of PolyJet 3D printed parts using grey Taguchi method, MATEC Web of Conferences 318, 01015 (ICMMEN2020). <https://doi.org/10.1051/matecconf/202031801015>
71. K-E. Aslani, **J.D. Kechagias**, N.A. Fountas, N. Vidakis, A. Koutsomichalis, D.E. Manolakos, N.M. Vaxevanidis (2020), Prediction of the main cutting force in turning of AISI D6 tool steel bars by applying full and Taguchi fractional experimental design, MATEC Web of Conferences 318, 01051 (ICMMEN2020). <https://doi.org/10.1051/matecconf/202031801051>
72. K-E. Aslani, F. Vakouftsi, **J.D. Kechagias**, N.E. Mastorakis (2019): Surface Roughness Optimization of Poly-Jet 3D Printing Using Grey Taguchi Method, International Conference on Control, Artificial Intelligence, Robotics & Optimization (ICCAIRO), IEEE, DOI:10.1109/ICCAIRO47923.2019.00041
73. A. Tsiolikas, T. Mikrou, F. Vakouftsi, K-E. Aslani, **J.D. Kechagias** (2019): Robust design application for optimizing ABS fused filament fabrication process: A case study, IOP Conf. Ser.: Mater. Sci. Eng. 564 012021
74. K. Kitsakis, K-E. Aslani, N.M. Vaxevanidis, **J.D. Kechagias** (2019): An internal combustion engine visualization physical prototype applying digital manufacturing, IOP Conf. Ser.: Materials Science and Engineering 564 (1), 1-6

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79. **J.D. Kechagias**, M. Petousis, N. Vidakis, N. Mastorakis (2017): *Plasma Arc Cutting Dimensional Accuracy Optimization employing the Parameter Design approach*. ITM Web of Conferences; 9(1):1., DOI:10.1051/itmconf/20170903004
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86. **J.D. Kechagias**, S. Maropoulos (2015): *An Investigation of Sloped Surface Roughness of Direct Poly-Jet 3D Printing*. Proceedings of the International Conference on Industrial Engineering - INDE 2015 (Recent Advances in Mechanics, Mechatronics and Civil, Chemical and Industrial Engineering), Zakynthos, Greece; 07/2015
87. Z. Moza, K. Kitsakis, **J.D. Kechagias**, N. Mastorakis (2015): *Optimizing Dimensional Accuracy of Fused Filament Fabrication using Taguchi Design*. Proceedings of the 14th International Conference on Instrumentation, Measurement, Circuits and Systems (IMAS-14), Salerno, Italy; 06/2015
88. Z. Moza, K. Kitsakis, **J.D. Kechagias**, N.M. Vaxevanidis (2015): *Medical applications of 3D printing-A dimensional accuracy investigation of low cost 3D printing*. International Conference on Food and Biosystems Engineering (FaBE2015), Mykonos island, GR; 05/2015
89. **J.D. Kechagias**, P. Kyratsis, N. Mastorakis (2015): *On Prediction of Surface Roughness of Al 7075 alloy during Slot Milling using NN modelling*. Proceedings of the International Conference on Mechanics,



- Materials, Mechanical Engineering and Chemical Engineering - MMMCE 2015, Barcelona, Spain, pp.98-107; 04/2015
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  91. S. Karagiannis, T. Ispoglou, P. Stavropoulos, **J.D. Kechagias** (2014): *Multi parameter optimization using Taguchi L8 (27) Array - A case study on additive paper lamination process*. Proceedings of the 1st International Conference on Mathematical Methods & Computational Techniques in Science & Engineering - MMCTSE 2014, Athens, Greece, pp.110-113.; 11/2014
  92. D. Kountouras, S. Papanikolaou, P. Intzevidou, **J.D. Kechagias**, S. Maropoulos (2014): *The influence of micro structural aspects on a parameter design of carbon steel plate CNC plasma arc-cutting*. Scientific works of University of food technologies, Volume LXI 2014, Food science, Engineering and technologies 2014'Plovdiv, BG; 10/2014
  93. **J.D. Kechagias**, P. Stavropoulos, A. Koutsomichalis, I. Ntintakis, N. Vaxevanidis (2014): *Dimensional Accuracy Optimization of Prototypes produced by PolyJet Direct 3D Printing Technology*. Proceedings of the International Conference on Industrial Engineering - INDE '14, Santorini Island, Greece, pp. 61-65; 07/2014
  94. N.A. Fountas, **J.D. Kechagias**, Redha Benhadj-Djilali, C.I. Stergiou, N.M. Vaxevanidis (2014): *Optimizing 5-axis sculptured surface finish machining through design of experiments and neural networks*. Proceedings of the ASME 2014 12th Biennial Conference on Engineering Systems Design and Analysis ESDA2014 June 25-27, 2014, Copenhagen, Denmark, 06/2014. DOI:10.13140/2.1.2400.1929
  95. **J.D. Kechagias**, V. Iakovakis, E. Giorgio, P. Stavropoulos, A. Koutsomichalis, N.M. Vaxevanidis (2014): *Surface roughness optimization of prototypes produced by polyjet direct 3D printing technology*. OPTI 2014 An International Conference on Engineering and Applied Sciences Optimization, Kos Island, Greece; 06/2014
  96. N.M. Vaxevanidis, N.A. Fountas, **J.D. Kechagias**, D.E. Manolakos (2014): *Optimization of main cutting force and surface roughness in turning of TI-6AL-4V titanium alloy using design of experiments and artificial neural networks*. OPTI 2014 An International Conference on Engineering and Applied Sciences Optimization, Kos Island, Greece; 06/2014
  97. S. Karagiannis, P. Stavropoulos, **J.D. Kechagias** (2014): *An application of Neural Networks for Prediction of Surface Texture Parameters in Turning*. Proceedings of the 2014 International Conference on Neural Networks - Fuzzy Systems -NEUFUZ14, Venice, Italy, pp. 80-84; 03/2014
  98. I. Ntintakis, V. Iakovakis, G. Ntalos, **J. Kechagias** (2013): *Furniture design optimization with FEA analysis*. e-Conference on current issues in global furniture (Proceedings of the 8th Biennial Furniture Research Group Conference), Buckinghamshire new university, UK, pp. 14-21.; 11/2013
  99. S. Karagiannis, V. Iakovakis, **J.D. Kechagias**, N. Fountas, N. Vaxevanidis (2013): *Prediction of Surface Texture Characteristics in Turning of FRPs Using ANN*. Proceedings of the 14th International Conference on Engineering Applications of Neural Networks - EANN 2013, Chalkidiki, Greece, pp. 144-153; 09/2013. DOI:10.1007/978-3-642-41013-0\_15
  100. N.M. Vaxevanidis, **J.D. Kechagias**, N.A. Fountas, D.E. Manolakos (2013): *Three component cutting force system modeling and optimization in Turning of AISI D6 tool steel using design of experiments and Neural Networks*. Proceedings of the World Congress on Engineering - WCE 2013, London, UK; 07/2013
  101. I. Ntziantzias, **J.D. Kechagias**, N. Fountas, S. Maropoulos, N.M. Vaxevanidis (2011): *A cutting force model in turning of glass fiber reinforced polymer composite*. Proceedings of the International Conference on Economic Engineering & Manufacturing Systems; 11/2011

- 102.I. Ntziantzias, **J.D. Kechagias**, M. Pappas, N. Vaxevanidis (2011): *An experimental study of cutting force system during turning of a reinforced polymer composite*. Proceedings of the 4th International Conference on Manufacturing Engineering (ICMEN), Thessaloniki, Greece; 10/2011
- 103.M. Pappas, I. Ntziantzias, **J. Kechagias**, 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
- 104.**J.D. Kechagias**, 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
- 105.M. Pappas, **J. Kechagias**, 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
- 106.P. Alabey, M. Pappas, **J.D. Kechagias**, 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, DOI:10.1115/ESDA2010-24361
- 107.**J.D. Kechagias**, 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. DOI:10.1115/ESDA2010-24225
- 108.**J.D. Kechagias**, 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
- 109.**J.D. Kechagias**, 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
- 110.G. Petropoulos, **J.D. Kechagias**, V. Iakovakis, S. Maropoulos (2009): *Surface roughness investigation of a reinforced polymer composite*. Proceedings of the International Conference on Economic Engineering and Manufacturing Systems-ICEEMS2009, Brasov, Ro; 11/2009
- 111.G. Petropoulos, **J.D. Kechagias**, 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
- 112.**J. Kechagias**, 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
- 113.**J. Kechagias**, 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
- 114.G. Chryssolouris, **J.D. Kechagias**, J. Kotselis, D. Mourtzis, S. Zannis (1999): *Surface Roughness Modeling of the Helixys Laminated Object Manufacturing Process*. Proceedings of the 8th European Conference on Rapid Prototyping and Manufacturing, Nottingham, UK; 01/1999
- 115.**J.D. Kechagias**, 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

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

- 117.K. Kitsakis, N.Petrou, I.Tanos, **J. Kechagias**: *Design and 3d Printing of a Robotic Arm*. Book of Abstracts/3rd International Conference on Cryptography, Cyber Security and Information Warfare, Athens; 05/2016
- 118.D. Coman, A. Ionescu, **J. Kechagias**: *Numerical Simulations based on Kinematic Model of a Mobile Robot*. 3rd International Conference Advances in Engineering & management (ADEM 2014), Severin, Romania; 9/2014
- 119.**J. Kechagias**, V. Iakovakis, A. Ionescu, 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
- 120.P. Moustakas P, **Kechagias J**, Maropoulos S: *Rapid Tooling applications*. Advances in Engineering & Management - ADEM2010, Severin, Romania; 05/2010

#### Lecture notes

- 121.**John Kechagias**: *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
- 122.V. Iakovakis, **J. Kechagias**: *Αριθμητική Ανάλυση με Πεπερασμένα Στοιχεία - Θεωρία και Πράξη*. 01/2007; Εκδ. TEI Thessalias.
- 123.**I. Κεχαγιός**: CAD IV. 2002, Εκδ. TEI Δ.Μ.

#### Academics

##### PhD committee

- Apr 2020 - present* **Supervisor** of the candidate PhD student **D. Haidas**  
University of Thessaly, Department of F.W. Science and Design  
PhD Title: 3D printing optimization for thin wall prototypes
- 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* N. Mountakis, **Board member**  
Hellenic Mediterranean University, Mechanical Engineering Dept.  
PhD Title: Friction Stir Welding of FFF 3D printing parts

#### 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 Cibiù, 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)
- 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)
- Jan 2011* Editorial Board member, American Journal of Intelligent Systems

#### 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 Systems-University of Braşov, Rom
- Nov 2007* Systems-University of Braşov, Rom

#### Reviewer in high impact Journals (Pablons Dec 2021, more than 50 high impact Journals)



[\(82\) Materials and Manufacturing Processes WOS](#)



[\(27\) Rapid Prototyping Journal WOS](#)



[\(19\) The International Journal of Advanced Manufacturing Technology WOS](#)



[\(15\) Additive Manufacturing WOS](#)



[\(7\) Journal of Manufacturing Processes WOS](#)



[\(7\) Journal of Manufacturing Systems WOS](#)

#### 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 Cibiú 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

- 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-ΕΠΕΤ 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-ΕΠΕΤ 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

- 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