

Ioannis (John) Giannatsis

CONTACT INFORMATION

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EDUCATION

22/02/05 Ph.D. Diploma, Advanced Manufacturing / Additive Manufacturing Technologies, Department of Industrial Management and Technology, University of Piraeus
15/12/95 Ptychion (undergraduate/bachelor degree) in Industrial Management and Technology, Department of Industrial Management and Technology, University of Piraeus

ACADEMIC POSITIONS

07/13-08-21 Associate Professor, Department of Industrial Management, University of Piraeus.

Undergraduate Courses

- Computer-Aided Product Design
- Ergonomics
- Research Methodology
- Special Topics of Advanced Manufacturing Technologies

Postgraduate Courses

- Computational Tools for Problem Solving and Analysis
- CAD/CAM/CAE

07/13-08-21 Assistant Professor, Department of Industrial Management, University of Piraeus.

04/08-07/13 Lecturer, Department of Industrial Management, University of Piraeus.

10/05-03/08 Teaching Assistant, Department of Industrial Management, University of Piraeus, Courses: Industrial Management I, II & III.

10/97-03/08 Teaching Assistant, Department of Industrial Management, University of Piraeus, Course: CAD/CAM/CAE systems I.

RESEARCH PROJECTS

- *Energy Footprint management for SMEs*, Erasmus+, 2022-24.
- *"Kallipos" Repository - Development of e-books*, Hellenic Academic Electronic (Text)books Programme, Hellenic Ministry of Education, 2015.
- *Redesign and Recycling of Photovoltaic Panels*, SYNERGASIA Programme, funded by General Secretariat for Research and Technology, Hellenic Ministry of Education, 2013-2015.

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- *3D Structures for Tissue Engineering*, THALIS Programme, funded by the Hellenic Ministry of Education, 2012-2015.
- *Nanostructured Geopolymers and Calcium Phosphate based biocements and Implants Design*, THALIS Programme, funded by the Hellenic Ministry of Education, 2012-2015.
- *National Greek Anthropometric Survey*, funded by ELKEDE Design and Technology Centre, University of Piraeus, 2008.
- *Ergonomic evaluation and redesign of children bicycles for the Greek population*, funded by Field S.A., University of Piraeus, 2006.
- *Introduction of Rapid Prototyping Technologies in Greek companies: Investigation of the organizational and technical aspects*, funded by the General Secretariat for Research and Technology, Hellenic Ministry of Development, 1998-2001.
- *Design and Production of an Improved Water Injection System for Small Dishwashers*, EPET II – PAVE97 BE350, funded by the General Secretariat for Research and Technology, Hellenic Ministry of Development, 1999-2000.
- *Mechanical Behaviour of PET Bottles – Design and Development of Improved Conceptual Solutions*, EPET II – PAVE97, funded by the General Secretariat for Research and Technology, Hellenic Ministry of Development, 1998 – 1999.
- *Development of Rapid Prototyping Facilities and study of their applications*, EPET II – NEKTAR, funded by the General Secretariat for Research and Technology, Hellenic Ministry of Development, 1996 – 1998.

PUBLICATIONS

Articles in Scientific Journals and Book Series

1. Gennitsaris, S., M. Castro Oliveira, G. Vris, A. Bofilios, T. Ntinou, A. R. Frutuoso, C. Queiroga, J. Giannatsis, S. Sofianopoulou and V. Dedoussis (2023) "Energy Efficiency Management in Small and Medium-Sized Enterprises: Current Situation, Case Studies and Best Practices", *Sustainability*, Vol. 15, No. 4, 3727.
2. Bilalis, L., V. Canellidis, T. Papatheodorou, and J. Giannatsis (2022) "Direct Digital Manufacturing of a Customized Face Mask", *Journal of Manufacturing and Materials Processing*, Vol. 6, No. 5, 126.
3. Vassilakos, A., J. Giannatsis and V. Dedoussis (2021) "Fabrication of parts with heterogeneous structure using Material Extrusion Additive Manufacturing", *Virtual and Physical Prototyping*, Vol. 16, No.3, pp. 267-290.
4. Papatheodorou, T., J. Giannatsis and V. Dedoussis (2021) "Evaluating 3D Printers Using Data Envelopment Analysis", *Applied Sciences*, Vol. 11, No. 9, 4209.
5. Giannatsis, J., A. Vassilakos and V. Dedoussis (2020) "A Heterogeneous Infill Technique for Fused Deposition Modeling", *Procedia Manufacturing*, Vol. 51, pp. 642-648.
6. Tambouratzis, T., J. Giannatsis, A. Kyriazis and P. Siotropos, (2020) "Applying the computational intelligence paradigm to nuclear power plant operation: A review (1990-2015)", *International Journal of Energy Optimization and Engineering*, Vol. 9, No. 1, pp. 27-109.
7. Vassilakos A., J. Giannatsis and V. Dedoussis (2019) "3D Printing of Parts with Intra-Layer Variable Density", *Key Engineering Materials*, Vol. 799, pp. 288-293.
8. Canellidis, V., J. Giannatsis and V. Dedoussis (2016) "Evolutionary Computing and Genetic Algorithms: Paradigm Applications in 3D Printing Process Optimization", in: *Intelligent*

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- Computing Systems, Studies Comp. Intelligence*, Vol. 627 (ed. G.A. Tsihrintzis et al.), Springer, pp. 271-298.
9. Canellidis, V., J. Giannatsis and V. Dedoussis (2014) "Heuristic schemes for the efficient utilization of 3D printing stereolithography apparatus", *Lecture Notes in Management Science*, Vol. 6, pp. 159–166.
 10. Canellidis, V., J. Giannatsis and V. Dedoussis (2013) "Efficient parts nesting schemes for improving Stereolithography utilization", *Computer-Aided Design*, Vol. 45, Iss. 5, pp. 875–886.
 11. Giannatsis, J., K. Sofos, V. Canellidis, D. Karalekas and V. Dedoussis (2011) "Investigating the influence of build parameters on the mechanical properties of FDM parts", in: *Innovative Developments in Virtual and Physical Prototyping* (ed. P. Bartolo), CRC Press, pp. 525-529.
 12. Laios, L. and J. Giannatsis (2010) "Ergonomic evaluation and redesign of children bicycles based on anthropometric data", *Applied Ergonomics*, Vol. 41, No. 3, pp. 428-435.
 13. Canellidis, V., J. Giannatsis and V. Dedoussis (2009) "Genetic Algorithm Based Multi-Objective Optimization of the Build Orientation in Stereolithography", *International Journal of Advanced Manufacturing Technology*, Vol. 45, No. 7, pp. 714-730.
 14. Giannatsis, J. and V. Dedoussis (2009) "Additive fabrication technologies applied to medicine and health care: a review", *International Journal of Advanced Manufacturing Technology*, Vol. 40, pp. 116-127.
 15. Giannatsis, J. and V. Dedoussis (2007) "Decision support tool for selecting fabrication parameters in stereolithography", *International Journal of Advanced Manufacturing Technology*, Vol. 33, pp. 706–718.
 16. Dedoussis, V. and J. Giannatsis (2004) "Stereolithography assisted Redesign and Optimisation of a Dishwasher Spraying Arm", *Rapid Prototyping Journal*, Vol. 10, No.4, pp. 255-260.
 17. Giannatsis, J., V. Dedoussis and D. Karalekas (2002) "Architectural Scale modeling using Stereolithography", *Rapid Prototyping Journal*, Vol. 8, No. 3, pp. 200-207.
 18. Giannatsis, J., V. Dedoussis and L. Laios (2001) "A Study of The Build-Time Estimation Problem for Stereolithography Systems", *Robotics and Computer-Integrated Manufacturing*, Vol. 17, No. 4, pp.295-304.
 19. Giannatsis, J., V. Dedoussis and L. Laios (1999) "Build-Time Estimation Tools for Rapid Prototyping Stereolithography Systems", in: *Advances in Manufacturing*, (ed. S.G. Tzafestas), Springer, pp. 373-384.

Books

20. Giannatsis, J., V. Canellidis and V. Dedoussis (2015), *Computer-Aided Manufacturing Technologies*, avail. at <http://hdl.handle.net/11419/4521>. (in Greek)
21. Dedoussis V., Giannatsis, J. and V. Canellidis (2015), *Computer-Aided Design Systems*, avail. at: <http://hdl.handle.net/11419/4500>. (in Greek)

Articles in Scientific Conferences

22. Giannatsis, J., A. Vassilakos, V. Canellidis and V. Dedoussis (2015) "Fabrication of Graded Structures by Extrusion 3D Printing", *Proc. of the IEEM 2015 - IEEE International Conference on Industrial Engineering and Engineering Management*, 6-9 December, Singapore.
23. Kantaros, A., Giannatsis, J. and D. Karalekas (2013) "A novel strategy for the incorporation of optical sensors in Fused Deposition Modeling parts", *Proc. of the Inter. Conf. on Advanced Manufacturing Engineering and Technologies - Newtech 2013*, 27-30 October, Stockholm.

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24. Canellidis V., J. Giannatsis and V. Dedoussis (2011), "Simulated Annealing Algorithm Applied to the Nesting of Parts Fabricated by Layer Manufacturing", *Proc. 3rd Inter. Conf. on Applied Operational Research (ICAOR 2011)*, Istanbul, pp. 323-334.
25. Giannatsis, J., V. Canellidis and V. Dedoussis (2010), "Determination of the Pareto-optimal build orientations in Stereolithography", *Proc. of the IEEM 2010 - IEEE International Conference on Industrial Engineering and Engineering Management*, 7-10 December, Macau.
26. Canellidis, V., J. Giannatsis and V. Dedoussis (2010), "Effective Nesting of Layer Manufacturing Fabricated Parts Using a Genetic Algorithm and a Bottom-Left Ray Casting Procedure", *Proc. of the IEEM 2010 - IEEE International Conference on Industrial Engineering and Engineering Management*, 7-10 December, Macau.
27. V. Dedoussis, J. Giannatsis (2009), "Developing Competitive Products Using Stereolithography Rapid Prototyping Tools", *Proc. of the IEEM 2009 - IEEE International Conference on Industrial Engineering and Engineering Management*, 8-11 December, Hong Kong.
28. Dedoussis, V., V. Canellidis and J. Giannatsis (2009) "Optimizing additive fabrication processes using evolutionary multiobjective optimization techniques", *23rd European Conference on Operational Research*, July 5 – 8, Bonn.
29. Canellidis V., J. Giannatsis and V. Dedoussis (2008), "Optimization of build orientation in Layer Manufacturing using an efficient heuristic approach", *Proc. of Euro-uRapid 2008 - International Users' Conference on Rapid Prototyping & Rapid Tooling & Rapid Manufacturing*, R. Meyer ed., Berlin, pp. 335-342.
30. Giannatsis J. and V. Dedoussis (2007), "Environment Conscious Manufacturing: The Case of Additive-Rapid Fabrication Technologies", *Proc. of the 10th International Conference on Environmental Science and Technology – CEST 2007*, Kos, Greece, pp.418-425.
31. Canellidis V., J. Giannatsis and V. Dedoussis (2006), "Integrated Decision Support System for Setting-up Stereolithography Machine", *Proc. of Euro-uRapid 2006 - International Users' Conference on Rapid Prototyping & Rapid Tooling & Rapid Manufacturing*, Meyer R. (ed.), Frankfurt, paper B1-3.
32. Giannatsis J., Dedoussis V. (2006), "Rapid Medical Prototyping: A review of applications of advanced manufacturing techniques to health care", *Proc. of ROBTEP 2006 - Acta Mechanica Slovaca*, Slovakia, paper 2-A/2006.
33. Giannatsis J., Dedoussis V. (2005), "A software tool for surface roughness estimation of 'green' Stereolithography models", *Proc. of Euro-uRapid 2005 - International Users' Conference on Rapid Prototyping & Rapid Tooling & Rapid Manufacturing*, Meyer R. (ed.), Leipzig-Germany, paper A1-1.
34. Dedoussis V. and J. Giannatsis (2004), "Stereolithography assisted 'Rapid' Product Development", *Proc. of ROBTEP 2004 - 7th Int. Conference in Automatization & Robotics in Theory and Practice*, Slovakia, pp. 604-611.
35. V. Dedoussis, N. Mantzouratos and J. Giannatsis (2002), 'Redesigning the Base of a Small Dishwasher Using Stereolithography Prototypes', *Proceedings of Euro-uRapid 2002 - International User's Conference on Rapid Prototyping & Rapid Tooling & Rapid Manufacturing*, R. Meyer (ed.), Frankfurt, paper B2-4.
36. Polydoros S., M. Sfantsikopoulos, J. Giannatsis and V. Dedoussis (2002), "Rapid Prototyping: Industrial case studies in Greece", *Proc. of the 1st ICMEN - International Conference on Manufacturing Engineering*, K.D. Bouzakis (ed.), Cassandra, Greece, pp.405-414.
37. Dedoussis V., Karalekas D., Giannatsis J. and C. Valsamidis (2001), "Redesign and Optimization of Product Variants with Stereolithography – The Case of a Small Dishwasher Water Injection System", *Proc. of Euro-uRapid 2001 - International Users' Conference on*

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Rapid Prototyping & Rapid Tooling & Rapid Manufacturing, R. Meyer & H. Kuhnle (eds.), Amsterdam, pp. 469-479.

38. Dedoussis V., D. Karalekas, J. Giannatsis, N. Mantzouratos and K. Sinogiannis (2000), "Investigation of the Mechanical Behaviour of Cylindrical 'Bottle-like' Shapes under Crushing Loading using Stereolithography Models", J. Campbell (ed.), *Proc of the 9th European Rapid Prototyping Conference*, Athens, July 2000, pp. 79-88.
39. Giannatsis J., D. Karalekas, V. Dedoussis and L. Laios (2000), "Rapid Prototyping Implementation in the Architectural Design of Large Civil Structures - the Case Study of an Athletics Stadium", J. Campbell (ed.), *Proc. of the 9th European Rapid Prototyping Conference*, Athens, July 2000, pp. 123-132.
40. Giannatsis I., V. Dedoussis and L. Laios (1998), "Build-Time Estimation Tools for Rapid Prototyping Stereolithography Systems", *3rd European Robotics, Intelligent Systems & Control Conference*, Athens, June 1998.

AUTHOR METRICS

- Google Scholar / h-index: 12, i-12 index: 13, citations: 1012
- Scopus / h-index: 9, citations: 631

OTHER SCIENTIFIC ACTIVITIES

- Guest Editor, Special issue: "Direct Digital Manufacturing with Additive Manufacturing/3D Printing", *Journal of Manufacturing and Materials Processing*.
- Reviewer at the following scientific journals
 - 3D Printing and Additive Manufacturing
 - Additive Manufacturing
 - Applied Ergonomics
 - Computer-Aided Design
 - Computers in Biology and Medicine
 - International Journal of Advanced Manufacturing Technology
 - International Journal of Computer Aided Engineering and Technology
 - MDPI: Applied Sciences, Designs, Inventions, Materials, Micromachines, Pharmaceutics, Technologies
 - Proc. of the Inst. of Mechanical Engineers, Part B: Journal of Engineering Manufacture
 - Proc. of the Inst. of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science
 - Robotics & Computer Integrated Manufacturing
 - Virtual and Physical Prototyping

AREAS OF SCIENTIFIC INTEREST

- Additive Manufacturing / 3D Printing technologies
- Direct Digital Manufacturing / Rapid manufacturing
- Computer Integrated Manufacturing
- Smart Production Systems
- Meta-heuristic Optimization Techniques
- CAD/CAM/CAE Systems
- Virtual Modeling/Prototyping