

Curriculum Vitae

Dr. Ioannis K. Nikolos

Professor

Address:

School of Production Engineering and Management,
Technical University of Crete, University Campus, GR-73100, Chania, Greece.

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EDUCATION

July 1991 – Sep. 1996

Ph.D. Degree, Department of Mechanical Engineering, National Technical University of Athens (NTUA), Greece, Fluids Section, Lab. of Thermal Turbomachines.

Thesis: “*Contribution to the calculation of secondary flows inside compressors and modeling of the tip clearance effects*” (in Greek).

Sep. 1985 – Oct. 1990

Mechanical Engineering Diploma, NTUA.

RESEARCH INTERESTS

Computational Fluid Dynamics (CFD); Unmanned Aerial Vehicles (aerodynamic design, path planning); Scientific Computing; Finite Volume Methods; Macroscopic modeling of traffic flow; Engineering design optimization using Computational Intelligence.

PROFESSIONAL EXPERIENCE (Selected)

Jan. 2003 – today

Technical Univ. of Crete
School of Production Engineering & Management

Oct. 98 – Jan. 2003

Technical Univ. of Crete,
- Dept. of Production Engineering & Management,
- Dept. of Sciences.
Adjunct Lecturer

1999 – Jan. 2003

Technical Univ. of Crete,
Dept. of Production Eng. & Management, Intelligent Systems and Robotics Laboratory.
Research Associate

Mar. 2000 – Feb. 2001

National Technical University of Athens (NTUA), Dept. of Mechanical Engineering, Lab. of Thermal Turbomachines.
Research Associate

ADMINISTRATIVE POSITIONS (Selected)

Oct. 2013 – Oct. 2016

Member of the Research Committee (Technical University of Crete).

Sep. 2009 – Aug. 2011

Associate member of the University Senate (Technical University of Crete).

Aug. 2005 – Aug. 2006

Member of the University Senate (Technical University of Crete).

Sep. 2008 – Nov. 2013

Coordinator of the student's internships project, School of Production Engineering and Management, TUC.

Sep. 2005 – Nov. 2013

Member of the University Library Committee (Technical University of Crete).

Okt. 2004 – Sep. 2007

Member of the Department's Undergraduate Studies Committee (Department of Production Engineering and Management - Technical University of Crete).

MEMBER OF PROFESSIONAL SOCIETIES

Senior Member of A.I.A.A. (American Institute of Aeronautics and Astronautics) (Since 1/1/2004)

Member of A.S.M.E. (American Society of Mechanical Engineers) (Since 2/7/2005)

Member of I.E.E.E. (Institute of Electrical and Electronics Engineers) (Since 1/1/2005)

Member of the Technical Chamber of Greece (Since 1991)

Member of the Greek Professional Mechanical and Electrical Engineers Society (Since 1991)

ASSOCIATE/GUEST EDITOR IN SCIENTIFIC JOURNALS

1. *International Journal of Advanced Intelligence Paradigms (IJAIP)*, Special Issue on: "Artificial Intelligence Driven Engineering Design Optimisation", Vol. 2, No. 4, 2010.
 2. J.M. Adam, D., Camotim, L. Dunai, K. Marti, I.K. Nikolos, F.J. Palares, M.P. Papadopoulou, M.P. Saka, G.I. Schueller, T. Viotor, Y. Tsompanakis, B.H.V. Topping, Editorial, *Advances in Engineering Software (ADES)*, Special Issue, 44 (1), Editorial, pp. 1-2, 2012.
 3. *ASME Journal of Fluids Engineering*. Guest Editor (Since March 2017). Associate Editor (since 24/10/2017).
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PATENTS

1. Emmanuel Raptakis, Dimitris Papanastasiou, Diamantis Kounadis, Alexander Lekkas, Ioannis Orfanopoulos, Ioannis Nikolos, “Improvements in and relating to the Control of Ions”, UK Patent, GB 2508574, 17/12/2014. Intellectual Property Office U.K.
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BOOKS

1. L. Klianis, I.K. Nikolos, I. Sideris, “Internal Combustion Engines, Volume I”, Eugenides Foundation, Publ., 2002 (in Greek), ISBN 960-337-046-0.
 2. L. Klianis, I.K. Nikolos, I. Sideris, “Internal Combustion Engines, Volume II”, Eugenides Foundation, Publ., 2003 (in Greek), ISBN 960-337-047-9.
 3. N. Tsourveloudis, I. K. Nikolos, “Production Technologies”, Technical University of Crete, 2014 (in Greek), ISBN 978-618-81537-0-7.
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JOURNAL PUBLICATIONS (Selected)

1. E. Kaselouris, V. Dimitriou, I. Ftilis, A. Skoulakis, G. Koundourakis, E.L. Clark, J. Chatzakis, M. Bakarezos, I.K. Nikolos, N.A. Papadogiannis and M. Tatarakis, "Preliminary investigation on the use of low current pulsed power Z-pinch plasma devices for the study of early stage plasma instabilities", *Plasma Physics and Controlled Fusion*, 60, 014031, 2018.
2. E. Kaselouris, V. Dimitriou, I. Ftilis, A. Skoulakis, G. Koundourakis, E.L. Clark, M. Bakarezos, I.K. Nikolos, N.A. Papadogiannis and M. Tatarakis, "Plasma Instabilities: The influence of the solid to plasma phase transition on the generation and the dynamics of plasma instabilities", *NATURE Communications*, 8: 1713, 2017. DOI: 10.1038/s41467-017-02000-6.
3. S.N. Leloudas, G.A. Strofylas and I.K. Nikolos, "Constrained Airfoil Optimization Using the Area-Preserving Free-Form Deformation", *Aircraft Engineering and Aerospace Technology*. (Accepted)
4. S.S. Sarakinos, G.N. Lygidakis, I.K. Nikolos, "Flow Analysis of the DLR-F11 High Lift Model Using the Galatea-I Code", *AIAA Journal of Aircraft*, 2017. (Online)
5. G.A. Strofylas, G.N. Lygidakis, I.K. Nikolos, "An Agglomeration Strategy for Accelerating RBF-Based Mesh Deformation", *Advances in Engineering Software*, 107, pp. 13-37, 2017.
6. G.N. Lygidakis, S.S. Sarakinos, I.K. Nikolos, "Comparison of different agglomeration multigrid schemes for compressible and incompressible flow simulations", *Advances in Engineering Software*, 101, pp. 77-97, 2016.
7. G.N. Lygidakis, I.K. Nikolos, "Assessment of different spatial/angular agglomeration multigrid schemes for the acceleration of FVM radiative heat transfer computations", *Numerical Heat Transfer, Part B Fundamentals*, 69 (5), pp. 389-412, 2016.
8. A. Delis, I.K. Nikolos, M. Papageorgiou, "Macroscopic traffic flow modelling with adaptive cruise control: Development and numerical solution", *Computers and Mathematics with Applications*, 70, pp. 1921-1947, 2015.
9. G.N. Lygidakis, I.K. Nikolos, "Numerical Analysis of Flow over the NASA Common Research Model (CRM) Using the Academic CFD Code Galatea", *ASME Journal of Fluids Engineering*, Vol. 137, pp. 071103 - 1 - 18, 2015.
10. G.N. Lygidakis, I.K. Nikolos, "Using a parallel spatial/angular agglomeration multigrid scheme to accelerate the FVM radiative heat transfer computation - Part I: Methodology", *Numerical Heat Transfer, Part B Fundamentals*, 66, pp. 471-497, 2014.
11. G.N. Lygidakis, I.K. Nikolos, "Using a parallel spatial/angular agglomeration multigrid scheme to accelerate the FVM radiative heat transfer computation - Part II: Numerical results", *Numerical Heat Transfer, Part B Fundamentals*, 66, pp. 498-525, 2014.
12. A. Delis, I.K. Nikolos, M. Papageorgiou, "High-resolution numerical relaxation approximations to second-order macroscopic traffic flow models", *Transportation Research Part C*, 44, pp. 318-349, 2014.
13. I.K. Nikolos, "On the use of multiple surrogates within a differential evolution procedure for high-lift airfoil design", *International Journal of Advanced Intelligence Paradigms*, 5 (3), pp. 319-341, 2013.
14. G.N. Lygidakis, I.K. Nikolos, "Using a high order spatial/temporal scheme and grid adaptation with a finite volume method for radiative heat transfer", *Numerical Heat Transfer, Part B Fundamentals*, 64, pp. 89-117, 2013.
15. A. Delis, I.K. Nikolos, "A novel multidimensional solution reconstruction and edge-based limiting procedure for unstructured cell-centered finite volumes with application to shallow water dynamics", *International Journal for Numerical Methods in Fluids*, 71 (5), pp. 584-633, 2013.
16. L.D. Adamoudis, G. Koini, I.K. Nikolos, "Heuristic repairing operators for 3D tetrahedral mesh generation using advancing-front technique", *Advances in Engineering Software*, 54, pp. 49-62, 2012.
17. F. Papadopoulos, I. Valakos, I.K. Nikolos, "Design of an S-duct intake for UAV applications", *Aircraft Engineering and Aerospace Technology*, 84 (6), pp. 439-456, 2012.
18. G.N. Lygidakis, I.K. Nikolos, "Using finite volume method and hybrid unstructured meshes to compute radiative heat transfer in 3D geometries", *Numerical Heat Transfer, Part B Fundamentals*, 62, pp. 289-314, 2012.
19. M. Kazolea, A. I. Delis, I.K. Nikolos, C.E. Synolakis, "An unstructured finite volume numerical scheme for extended 2D Boussinesq-type models", *Coastal Engineering*, 69, pp. 42-66, 2012.
20. A.I. Delis, I.K. Nikolos, M. Kazolea, "Performance and comparison of cell-centered and node-centered unstructured finite volume discretizations for shallow water free surface flows", *Archives of Computational Methods in Engineering*, 18 (1), pp. 57-118, 2011.
21. I.K. Nikolos, A. I. Delis, "An unstructured node-centered finite volume scheme for shallow water flows with wet/dry fronts over complex topography", *Computer Methods in Applied Mechanics and Engineering*, 198, pp. 3723-3750, 2009.
22. G. Koini, S. Sarakinos, I.K. Nikolos, "A Software Tool for Parametric Design of Turbomachinery Blades", *Advances in Engineering Software*, 40, pp. 41-51, 2009.
23. E.I. Amoiralis and I.K. Nikolos, «Freeform Deformation versus B-Spline Representation in Inverse Airfoil Design», *ASME Journal of Computing & Information Science in Engineering*, 8 (2), 2008.
24. I.M. Valakos, M.S. Ntipteni, I.K. Nikolos, «Structural Optimization of a Centrifugal Impeller Using Differential Evolution in CATIA™ Environment», *Operational Research: An International Journal (ORIJ)*, 7 (2), pp. 185-211, 2007.
25. S.S. Sarakinos, I.M. Valakos, I.K. Nikolos, «A Software Tool for Generic Parameterized Aircraft Design», *Advances in Engineering Software*, 38 (1), pp. 39-49, 2007.
26. A. Brintaki, I.K. Nikolos, «Coordinated UAV Path Planning Using Differential Evolution», *Operational Research: An International Journal (ORIJ)*, 5 (3), pp. 487-502, 2005. ISSN 1109-2858.
27. I.K. Nikolos, L. Doitsidis, V. N. Christopoulos, N. Tsourveloudis, «Roll Control of Unmanned Aerial Vehicles using Fuzzy Logic», *WSEAS Transactions on Systems*, 4 (2), pp. 1039-1047, 2003.
28. I.K. Nikolos, K. P. Valavanis, N. C. Tsourveloudis, A. N. Kostaras, «Evolutionary Algorithm Based Off-line / On-line Path Planner for UAV Navigation», *IEEE Transactions on Systems, Man and Cybernetics-Part B*, 33 (6), pp. 898-912, 2003.
29. I.K. Nikolos, N. Tsourveloudis, K. P. Valavanis, «Evolutionary Algorithm Based Off-Line Path Planner for UAV Navigation», *Automatika*, 42 (3-4), pp. 143-150, 2001.

At a glance:

Prof. I.K. Nikolos has coordinated **34** Research and Development Projects. He has participated in the Organizing Committees of **19** Scientific Conferences, while he has provided **4** invited lectures. He has published **3** Books, **45** Journal papers, **7** Book Chapters, **99** refereed papers in Conference Proceedings, **8** Conference presentations, **13** Posters and **4** papers presented in Workshops.

Prof. Nikolos has been the Advisor for **4** completed Ph.D Theses, **17** MSc Theses and **32** Diploma Theses.

Prof. Nikolos and his collaborators have developed **23** Scientific Computing software packages (CFD, Mesh generation, Optimization, Turbomachinery design, Path-planning, etc.). The work of Prof. Nikolos has attracted more than **1475** citations in Google Scholar.
