IOANNIS (JOHN) S. ANAGNOSTOPOULOS

Ph.D. Mechanical Engineer
Professor, School of Mechanical Engineering, NTUA, Athens, Greece
Director of the Laboratory of Hydraulic Turbomachines, NTUA
Board Member of the Greek Regulatory Authority for Energy

A. Education

o National Technical University of Athens, Greece
   Ph.D., Mechanical Engineering, March 1991
   Thesis: "Numerical Solution of Two-Phase Flow Conservation Equations in Axisymmetric Burners"

o Pedagogical Technical School of Athens, Greece
   Diploma in Pedagogical Studies, March 1994

o National Technical University of Athens
   Diploma, Mechanical Engineering, June 1985

B. Work Experience

o Greek Regulatory Authority for Energy (R.A.E.)
   Board Member, 2/2016 –

o National Technical University, Athens, Greece
   School of Mechanical Engineering, Fluids Section, Laboratory of Hydraulic Turbomachines
   − Professor, 8/2016 - today
   − Associate Professor, 7/2012 – 7/2016
   − Assistant Professor, 2/2006 – 6/2012
   − Lecturer, 3/2001-2/2006
   Interests include computational fluid dynamics, numerical optimization in turbomachinery and microfluidics, numerical analysis and modelling, diagnostics and troubleshooting in turbomachinery, hydroelectric and hybrid power plants modeling and optimum design and operation, energy storage.

   Teach undergraduate and graduate courses in numerical analysis, computational fluid mechanics, hydraulic turbomachines, hydrodynamic installations, and microfluidics.

o Lancaster University, Dept. of Engineering
   Visiting Professor, 10/2014 – 8/2015
   Collaboration in hydro turbines design and tidal energy plants sizing.

o Technological Education Institute of West Macedonia, Greece
   Department of Mechanical Engineering
   Assistant Professor, 3/1998-3/2001
   Teach undergraduate courses in Thermal Machines and Internal Combustion Engines.
   Head of Pollution Control Technologies Department, 6/2000-3/2001
   Chair of Technical Council, 10/1999-3/2001

o Center of Technological Research, Kozani, Greece
   Head of Wood Section, 9/1999-3/2001.

o Technological Education Institute of Peiraeus, Greece
   Department of Mechanical Engineering
   Part-time Professor, 9/1992-3/1998
   Teach undergraduate courses in Fluid Mechanics.

- o Technological Education Institute of Athens, Greece
  Department of Computers Science
  Part-time Professor, 1/1993-6/1997
  Teach undergraduate courses in CAD and Computer Programming

- o IAPETOS S.A., Athens, Greece, www.iapetos.gr
  R&T Consultant, 1993-1998
  Technical Reports and Feasibility Studies, for a broad band of electro-mechanical projects and applications

- o R&T Consultant, 1997-2000.
  R&T studies for public and private entities (CINAR A.E., Center for Renewable Energy Sources, Institute for Solid Fuels Technology and Applications)

- o National Technical University of Athens
  Department of Mechanical Engineering
  Postdoctoral Researcher, 1992-98.
  Graduate Research Assistant, 1985-91
  Participation as researcher or senior researcher in 16 research projects.

C. Academic Areas of Interest and Research Methods

Development and application of scientific software for basic research in fluid mechanics, simulation of fluid processing mechanisms and transport phenomena. Several integrated computer codes for modelling of various industrial fluid mechanics processes, and of energy systems:

- o CO.C.A. (Coal Combustion Algorithm). Numerical simulation of pulverized coal combustion in power production units.
- o CO.G.A. (Coal Grinding Algorithm). Numerical simulation of coal pulverization and drying in fluid enrgy mills installed in power production units.
- o M.A.P. (Modelling of Atmospheric Pollution). Numerical simulation of atmospheric dispersion and photochemical kinetics of gas and particulate emissions.
- o S.EL.F. (Simulation of Electrostatic Filters). Numerical simulation of two-phase flow and separation in industrial electrostatic filters.
- o FL.A.S. and FL.A.S.-p (Flow Automated Solver – polar). Advanced solution algorithm of internal and external flows for design optimization applications.
- o STAR. RANS solver for flow analysis in hydraulic machinery, with advanced numerical techniques (Partly Blocked Cells, Adaptive grid refinement).
- o F.L.S. (Fast Lagrangian Solver). Particle method for numerical modeling of unsteady two-phase flow in impulse hydro turbines (Pelton and Turgo).
- o M.U.L.E. (Multiphase Unsteady Lagrangian Emulator). Numerical simulation of free-surface flows based on the Smoothed Particle Hydrodynamics method.
- o HY.P.S.O.S. (HYbrid Power Systems Operation Simulator). Modeling of hydroelectric plants and hybrid energy systems with pumped storage operation in autonomous and interconnected power systems.

D. Activities and Service

Meetings Organizing and Scientific Committee

- − "Energy storage – New RES projects – Funding", Scientific and Investment Forum, July 15, 2019, Athens, Greece.
- − "Energy storage in the Greek Electricity System up to 2050 – Needs, Barriers and Actions required", Workshop, Nov. 29, 2015, NTUA, Athens, Greece.

- "International Conference and Exhibition on Mechanical & Aerospace Engineering (Mech Aero-2013)", 30/9-2/10/2013 San Antonio, USA.
- "7th International Congress on Computational Mechanics", GRACM, Athens, Greece, 30/6-2/7/2011.
- "Methodologies for the Design and Optimization of Hydraulic Turbines", Seminar, NTUA, Athens, 14/6/2011.
- "2nd WSEAS Intl. Conference on Applied and Theoretical Mechanics (Mechanics '06)", Venice, Italy, November 20-22, 2006.
- "Flow 2004 – Research Activities in Fluid Mechanics in Greece", NTUA, Athens, 26/11/2004.
- "Penetration of Natural Gas in the Greek Energy Market – Problems, Perspectives and Security", Technical Chamber of Greece, Athens, 26/9/04.
- "The studies of Mechanical Engineer within a continuously changing technological environment – Development strategy of the School of Mechanical Engineering, NTUA, Athens, 14/6/04.
- "Pollution Control and Environment" TEI of West Macedonia, Kozani, 23/9/00.
- "Research Activities in Fluid Mechanics in Greece", NTUA, Athens, 15/5/1998.

Invited Speaker

- "Challenges of the energy planning in Greece and in Europe, IENE, 24th National Conference in Energy and Development, Athens, Greece, November 21-22, 2019.
- "The storage needs of the Greek electricity system based on the RES development scenarios", Renewable and Storage Forum, Athens, Greece, October 24, 2019.
- "Identifying the future energy storage needs", Scientific and Investment Forum, Athens, Greece, July 15, 2019.
- "Large RES penetration in autonomous electric grids – The role of pumped hydro storage", 3rd Intl. Conference on Development, Energy, Environment, Economics, (DEEE '12), Paris, France, December 2-4, 2012.
- "Large Pumping Units for Energy Storage", ENERTECH'11, 6th Intl. Conference, Athens, Greece, 29 Sept. – 1 Oct. 2011.
- "Development and laboratory testing of improved Action and Matrix hydro turbines designed by advanced analysis and optimization tools", Hydroaction Seminar, European Small Hydropower Association (ESHA), Brussels, April 13, 2011.
- "Pumped-Storage Hybrid RES Systems", in ENERTECH'09, 4th Intl. Conference on Legal Framework, Investment Opportunities and Technical Innovation in the Electricity Sector, Athens, Greece, 23-24 October, 2009.
- "The Smoothed Particle Hydrodynamics Method in Computational Fluid Dynamics", Plenary Lecture in the 7th IASME/WSEAS Intl. Conference on Fluid Mechanics and Aerodynamics (FMA '09), Moscow, Russia, August 20-22, 2009.
- "Numerical Optimization in Hydrodynamic Design", Plenary Lecture in the 5th IASME/WSEAS Intl. Conference on Fluid Mechanics and Aerodynamics (FMA '07), Vouliagmeni, Athens, Greece, August 25-27, 2007.

Member of:

- Technical Chamber of Greece.
- Hellenic Association of Mechanical and Electrical Engineers.

Administrative experience

o Director of the Laboratory of Hydraulic Turbomachines, NTUA, 2018-

o Board Member of the Greek Regulatory Authority for Energy, 2016-

o Chair of Fluids Section, School of Mechanical Engineering, NTUA, 2013-2014.

o Associate Member, Council of Public Work, Ministry of Environment, Land Planning and Public Work, Greece, 2007-2009.

o Member, Project team: Reformation of the Training Programme, School of Mechanical Engineering, NTUA, 2002-2005.

E. Publications

Journal papers

1. Anagnostopoulos, J. and Bergeles, G.: *"Discrete-Phase Effects on the Flow-Field of a Droplet-Laden, Swirling Jet with Recirculation: a Numerical Study"*. International Journal of Heat and Fluid Flow, vol. 13 (2), pp. 141-150, 1992.
2. Sargianos, N., Anagnostopoulos, J. and Bergeles, G.: *"Influence of Particle Diameter Distribution on the Downstream Particle Turbulence in a Two-Phase, Turbulent, Round Jet"*. International Journal for Numerical Methods in Fluids, vol. 16, pp. 287-301, 1993.
3. Anagnostopoulos, J., Sargianos, N. and Bergeles, G.: *"The Prediction of Pulverized Greek Lignite Combustion in Axisymmetric Furnace Geometries"*. Combustion and Flame, vol. 92, pp. 209-221, 1993.
4. Kadja M., Anagnostopoulos J. and Bergeles G.: *"Study of Wind Flow and Pollutant Dispersion by Newly Developed Precision-Improving Methods"*. International Communication for Heat and Mass Transfer, vol. 23, no. 8, pp. 1065-1076, 1996.
5. Anagnostopoulos, J. and Bergeles, G.: *"Numerical Investigation of Grinding Process in a Beater Wheel Mill with Classifier"*. ASME Transactions, Journal of Engineering for Gas Turbines and Power, vol. 119, pp. 723-733, 1997.
6. Kadja M., Anagnostopoulos J. and Bergeles G.: *"Implementation of Newly Developed Algorithms in the Simulation of Atmospheric Turbulent Transports"*. Computers & Fluids, vol. 26, no. 5, pp. 489-504, 1997.
7. Anagnostopoulos, J. and Bergeles, G.: *"A Numerical Model for Wind Field and Pollutant Concentration Calculations over Complex Terrain: Application to Athens, Greece"*. Journal of Wind Engineering and Industrial Aerodynamics, vol. 73, no. 3, pp. 285-306, 1998.
8. Polydoras G., Anagnostopoulos J. and Bergeles G.: *"Air Quality Predictions: Dispersion Model vs. Box-Jenkins Stochastic Models. An Implementation and Comparison for Athens, Greece"*. Applied Thermal Engineering, vol. 18, pp. 1037-1048, 1998.
9. Giambanis A., Anagnostopoulos J. and Bergeles G.: *"Numerical Simulation of Pollutant Dispersion and Photochemical Kinetics over Complex Terrain"*. Applied Mathematical Modelling, vol. 22, pp. 313-329, 1998.
10. Kadja M., Anagnostopoulos J. and Bergeles G.: *"Development of an Implicit Air Pollution Model for Regions of Variable Topography"*. Environmental Modelling & Software, vol. 13, pp. 151-161, 1998.
11. Anagnostopoulos J. and Bergeles G.: *"Three-Dimensional Modeling of the Flow and the Interface Surface in a Continuous Casting Mold Model"*. Metallurgical and Materials Transactions B, vol. 30, no. 6, pp. 1095-1105, 1999.
12. Anagnostopoulos J., Bergeles G, Epple B., and. Stegelitz P.: *"Numerical Simulation of Grinding and Drying Performance of a Fluid-Energy Lignite Mill"*. ASME Transactions, Journal of Fluids Engineering, vol. 123, no.2, pp. 303-310, June 2001.
13. Anagnostopoulos J. and Bergeles G.: *"Corona Discharge Simulation in Wire-Duct Electrostatic Precipitator"*. Journal of Electrostatics, vol. 54, is. 2, pp. 129-147, 2002.
14. Varonos A., Anagnostopoulos J. and Bergeles G.: *"Prediction of the Cleaning Efficiency of an Electrostatic Precipitatorr"*. Journal of Electrostatics, vol. 55, is. 2, pp. 111-133, 2002.
15. Anagnostopoulos J.: *"Discretization of Transport Equations on 2D Cartesian Unstructured Grids using Higher-order Schemes for the Convection Terms"*. Int. Journal for Numerical Methods in Fluids, vol 42, is 3, pp. 297-321, 2003.
16. Anagnostopoulos J. and Mathioulakis D.S.: *"A Flow Study Around a Time-Dependent 3-D Asymmetric Constriction"*, Journal of Fluids and Structures, vol. 19, pp. 49-62, 2004.
17. Anagnostopoulos J.S. and Mathioulakis D.S.: *"Unsteady flow in a square T-junction"*, Physics of Fluids, 16(11), pp. 3900-3910, 2004.

18. Anagnostopoulos J. and Mathioulakis D., "*Numerical simulation and hydrodynamic design optimization of a Tesla-type valve for micropumps*", IASME Transactions, vol. 2(6), pp. 1846-1852, 2005.

19. Anagnostopoulos J., "*CFD analysis and design effects in a radial pump impeller*", WSEAS Transactions, vol. 1(6), pp. 763-770, 2006.

20. Anagnostopoulos J.S. and Papantonis D.E., "*Optimal sizing of a run-of-river small hydro-power plant*", Energy Conversion & Management, vol. 48, pp. 2663-2670, 2007.

21. Anagnostopoulos J.S. and Papantonis D.E., "*Flow modeling and runner design optimization in Turgo water turbines*", Intl. J. of Applied Science, Engineering & Technology, vol. 4(3), pp. 136-141, 2007.

22. Anagnostopoulos J.S. and Papantonis D.E., "*Pumping station design for a pumped-storage wind-hydro power plant*", Energy Conversion & Management, vol. 48 (11), pp. 3009-3017, 2007.

23. Stamatelos G.F. and Anagnostopoulos J.S., "*Simulation of viscous flows with a gridless particle method*", WSEAS Transactions on Fluid Mechanics, vol. 3(4), pp. 379-389, 2008.

24. Anagnostopoulos J.S. and Papantonis D.E., "*Simulation and size optimization of pumped -storage power plant for the recovery of wind-farms rejected energy*", Renewable Energy, vol. 33, pp. 1685-1694, 2008.

25. Anagnostopoulos J.S., "*A fast numerical method for flow analysis and blade design in centrifugal pump impellers*", Computers and Fluids vol. 38, pp. 284-289, 2009.

26. Grapsas V., Anagnostopoulos J. and Papantonis D., "*Flow measurements and simulation in a model centrifugal pump impeller*", International Journal of Fluid Mechanics Research, vol. 37(2), pp. 149-161, 2010.

27. Spyrou I. and Anagnostopoulos J., "*Design study of a stand-alone desalination system powered by renewable energy sources and a pumped storage unit*", Desalination Journal, vol. 257(1-3), pp. 137-149, 2010.

28. Grapsas V., Anagnostopoulos J. and Papantonis D., "*Improved design of a centrifugal pump impeller using CFD and numerical optimization tools*", International Journal of Advanced Intelligence Paradigms (IJAIP), vol. 2(4), pp. 336-353, 2010. 29. Stamatelos F.G., Anagnostopoulos J.S. and Papantonis D., *"Performance measurements on a Pelton turbine model"*, Proc. of IMechE, Journal of Power and Energy, vol. 225, pp. 351-362.

29. Koukouvinis F., Anagnostopoulos J. and Papantonis D., " SPH Method used for Flow Predictions at a Turgo Impulse Turbine: Comparison with Fluent", World Academy of Science, Engineering and Technology, vol. 79, pp. 659-666, 2011.

30. Stamatelos F.G., Anagnostopoulos J.S. and Papantonis D., *"Performance measurements on a Pelton turbine model"*, Proc. of IMechE, Journal of Power and Energy, vol. 225, pp. 351-362, 2011

31. Anagnostopoulos J. and Papantonis D., "*Study of pumped storage schemes to support high RES penetration in the electric power system of Greece*", Energy, vol. 45, pp. 416-423, 2012.

32. Kapsali M., Anagnostopoulos J. and Kaldellis J., "*Wind powered pumped-hydro storage systems for remote islands: A complete sensitivity analysis based on economic perspectives*", Applied Energy, vol. 99, pp. 430-444, 2012.

33. Koukouvinis Ph., Anagnostopoulos J. and Papantonis D., "*An improved MUSCL treatment for the SPH-ALE method: comparison with the standard SPH method for the jet impingement case*", Intl. Journal for Numerical Methods in Fluids, in press.

34. Anagnostopoulos J. and Papantonis D., "*A fast Lagrangian simulation method for flow analysis and runner design in Pelton turbines*", Journal of Hydrodynamics, vol. 24(6), pp.930-941, 2012.

35. Koukouvinis Ph., Anagnostopoulos J. and Papantonis D., "*Simulation of 2d wedge impacts on water using SPH-ALE method*", Acta Mech 224, 2559–2575, 2013.

36. Benzon D., Židonis A., Panagiotopoulos A., Aggidis G., Anagnostopoulos J., Papantonis D., "*Impulse Turbine Injector Design Improvement Using Computational Fluid Dynamics*", ASME, J. Fluids Engineering, vol. 137(4), pp. 041106-9, 2015. doi: 10.1115/1.4029310

37. Židonis A., Panagiotopoulos A., Aggidis G., Anagnostopoulos J., Papantonis D., "*Parametric optimisation of two Pelton turbine runner designs using CFD*", Journal of Hydrodynamics, vol. 27(3), pp.403-412, 2015. DOI: 10.1016/S1001-6058(15)60498-X

38. Benzon D., Židonis A., Panagiotopoulos A., Aggidis G., Anagnostopoulos J., Papantonis D., "*Numerical investigation of the spear valve configuration on the performance of Pelton and Turgo turbine injectors and runners*", ASME, J. Fluids Engineering, 2015, *in press.*

39. Panagiotopoulos A., Židonis A., Aggidis G., Anagnostopoulos J., Papantonis D., "*Flow modeling in Pelton turbines by an accurate Eulerian and a fast Lagrangian evaluation method*", Intl. J. of Rotating Machinery, vol. 2015, pp.1-13, 2015. doi: 10.1155/2015/679576.

40. Assimakis N., Tziallas G., Anagnostopoulos J., and Polyzos A, "*Tank level estimation using Kalman and Lainiotis filters*", Asian Journal of Mathematics and Computer Research, vol. 10(1), pp. 19-38, 2016.

41. Benzon D.S., Aggidis G.A., Anagnostopoulos J.S., "Development of the Turgo impulse turbine: Past and Present", Applied Energy, vol. 166, pp. 1-18, 2016.

42. Soulis K.X., Manolakos D., Anagnostopoulos J.S. and Papantonis D., "*Development of a geo-information system embedding a spatially distributed hydrological model for the preliminary assessment of the*

hydropower potential of historical hydro sites in poorly gauged areas", Renewable Energy, vol. 92, pp. 222-232, 2016.

43. Vakis A. and Anagnostopoulos J., "Mechanical design and modeling of a single-piston pump for a novel wave energy converter", Renewable Energy, to be published.

45. Kapsali M., Kaldellis J.K. and Anagnostopoulos J.S., "*Investigating the techno-economic perspectives of high wind energy production in remote vs interconnected island networks*", Applied Energy, vol. 173, pp. 238-254, 2016.

46. Kassanos I., Chrysovergis M., Anagnostopoulos J., Charalampopoulos G., Rokas S., Lekanidis S., Kontominas I. and Papantonis D., "*Numerical optimization of a centrifugal pump impeller with splitter blades running in reverse mode*", Intl. Review of Mechanical Engineering, vol. 10(4), pp. 215-224, 2016.

47. Kapsali M. and Anagnostopoulos J.S., "*Techno-economic prospects of high wind energy share in remote vs. interconnected island grids*", Intl. Journal of Electrical, Computer, Energetic, Electronic and Communication Engineering, vol. 10(4), pp. 488-500, 2016.

48. Kapsali M. and Anagnostopoulos J.S., "*The impact of large-scale wind energy development on islands' interconnection to the mainland system*", Intl. Journal of Electrical, Computer, Energetic, Electronic and Communication Engineering, vol. 10(6), pp. 727-741, 2016.

49. Kapsali M. and Anagnostopoulos J.S., "*Investigating the role of local pumped-hydro energy storage in interconnected island grids with high wind power generation*", Renewable Energy, vol. 114, pp. 614-628.

50. Mousmoulis G., Karlsen-Davies N., Aggidis G., Anagnostopoulos J. and Papantonis D., "*A review of experimental detection methods of cavitation in centrifugal pumps*", Intl. Journal of Fluid Machinery and Systems, vol. 12(1), pp.71-88, 2019.

51. Mousmoulis G., Karlsen-Davies N., Aggidis G., Anagnostopoulos J. and Papantonis D., "*Experimental analysis of cavitation in a mini centrifugal pump with the use of acoustic emission and flow visualization*", European Journal of Mechanics-B/Fluids, vol. 75, pp.300-311, 2019.

52. Benzon D., Židonis A., Panagiotopoulos A., Petley S., Aggidis G.A., Anagnostopoulos J.S., Papantonis D.E., "*Experimental investigation and analysis of the Spear Valve design on the performance of Pelton turbines*", submitted to Journal of Fluids Engineering, ASME.

53. Kosmadakis G., Mousmoulis G., Manolakos D., Anagnostopoulos J., Papadakis G. and Papantonis D., "*Development of open-drive Scroll expander for an Organic Rankine Cycle (ORC) Engine and first test results*", Energy Procedia, vol. 129, pp. 371-378, 2017.

54. Petley S., Židonis A., Panagiotopoulos A., Benzon D., Aggidis G.A., Anagnostopoulos J., Papantonis D., "Out with the old, in with the new: Pelton hydro turbine performance influence utilizing three different injector geometries", Journal of Fluids Engineering, vol. 141(8), 81103, 2019.

55. Bonovas M. and Anagnostopoulos J., "*Modeling of operation and optimum design of a wave power takeoff system with energy storage*", Renewable Energy, vol. 147(1), pp. 502-514, 2020.

Conference Proceedings

1. Anagnostopoulos, J. and Bergeles, G.: *"Application of a Computer Code for the Generation of Orthogonal Grids in 3D Complex Terrain"*. Proceedings of the 3rd International Conference on Computation Methods and Experimental Measurements, Porto Carras, Greece, Sept. 1986, pp. 891-903, Ed. G.A. Keramidas and C.A. Brebbia, Comp. Mech. Publications, Springer -Verlag.

2. Anagnostopoulos, J. and Bergeles, G.: *"Numerical Study of Particle-Laden Jets: a Lagrangian Approach"*. Proceedings of the International Conference on Mathematical Modeling in Combustion and Related Topics, Lyon, France, April 1987, pp. 345-354, Ed. C.M. Brauner and C. Schmidt-Laine, Martinus Nijhoff Publishers, 1988.

3. Diakoumakos, H., Anagnostopoulos, J. and Bergeles, G.: *"A Theoretical Study of Solid-Air, Two-Phase Flow"*. Proceedings of the International Conference on Mathematical Modeling in Combustion and Related Topics, Lyon, France, April 1987, pp. 449-459, Ed. C.M. Brauner and C. Schmidt-Laine, Martinus Nijhoff Publishers, 1988.

4. Anagnostopoulos, J. and Bergeles, G.: *"Parametric Study and Optimization of a Quarl-Burner During Lignite Combustion in Axisymmetric Boilers"*. Proceedings of the 1st International Conference on Advanced Coputational Methods in Heat Transfer, Portsmouth, U.K., July 1990, vol. 3, pp. 185-196, Ed. L. Wrobel, C. Brebbia, and A. Nowak, Comp. Mech. Publications, Springer-Verlag.

5. Sargianos, N., Anagnostopoulos, J. and Bergeles, G.: *"A Numerical Algorithm for Gas Combustion in Utility Boilers"*. Proceedings of the 1st International Conference on Advanced Coputational Methods in Heat Transfer, Portsmouth, U.K., July. 1990, vol. 3, pp. 155-170, Ed. L. Wrobel, C. Brebbia, and A. Nowak, Comp. Mech. Publications, Springer-Verlag.

6. Sargianos, N., Anagnostopoulos, J. and Bergeles, G.: *"Turbulence Modulation of Particles, Downstream of a Two-Phase, Particle-Laden, Round Jet"*. Proceedings of the International Symposium on Engineering Turbulence Modelling and Measurements, Dubrovnik Yugoslavia, Sept. 1990, pp. 897-906, Ed. W. Rodi and E.N. Ganic, Elsevier Sci. Publ., N.Y.

7. Kadja M., Anagnostopoulos J., and Bergeles G.: *"Computation of Wind Flow and Pollutant Dispersion over Complex Terrains"*. Proceedings of the 3rd ECCOMAS Computational Fluid Dynamics Conference, Paris, 9-13 September 1996, pp. 1-7, John Wiley, Chichester, 1996.

8. Anagnostopoulos J. and Bergeles G.: *"Modelling of NO Formation during Pressurized Pulverized Fuel Combustion"*. Proceedings of the 4th International Conference on Technologies and Combustion for a Clean Environment, Lisbon, 7-10 July 1997, Calouste Gulbenkian Foundation, Pap. No. 33.2, pp. 11-19.

9. Anagnostopoulos J. and Bergeles G.: *"Cleaning Efficiency of Pressurized Slagging Combustors: A Comparative Numerical Study"*. Proceedings of the 4th International Conference on Technologies and Combustion for a Clean Environment, Lisbon, 7-10 July 1997, Calouste Gulbenkian Foundation, Pap. No. 4.3, pp. 15-23.

10. Polydoras G., Anagnostopoulos J. and Bergeles G.: *"Air Quality Predictions: Dispersion Model vs. Box-Jenkins Stochastic Models. An Implementation and Comparison for Athens, Greece"*. Proceedings of the 1st International Conference on Energy and the Environment, Limassol Cyprus, October 12-14 1997, Brunel University Press, vol. 2, pp. 426-436.

11. Anagnostopoulos J., Nikas K. and Bergeles G.: *"A Particle Erosion Prediction Algorithm for Industrial Equipments"*, 4th GRACM Congress on Computational Mechanics, Patra, 27-29 June, 2002, GRACM 2002, paper no. 79.

12. Anagnostopoulos J., Bouris D., Nikas K. and Bergeles G.: *"Numerical Sinulation of Metal Thermal Spraying"*, ICLASS 2003, Sorrento, Italy, July 13-17, 2003.

13. Anagnostopoulos J.S. and Papantonis D.E., *"Optimum sizing of a pumped-storage plant for the recovery of power rejected by wind farms"*, Proc. ERCOFTAC Design Optimization International Conference, N.T.U.A., Athens, March 31 – April 2, 2004.

14. Anagnostopoulos J.S. and Papantonis D.E., *"Application of evolutionary algorithms for the optimal design of a small hydroelectric power plant"*, HYDRO 2004 Int'l Conference, Porto, Portugal, 18-20 October 2004.

15. Grapsas V. and Anagnostopoulos J.S., *"Numerical optimization of the hydrodynamic shape of fluid flow systems"*, 1st Int'l Conference: From Scientific Computing to Computational Engineering, Athens, 8-10 September, 2004.

16. Grapsas V., Anagnostopoulos J. and Papantonis D., *"Hydrodynamic design of radial flow pump impeller by surface parameterization"*, 1st Int'l Conference in Experiments/Process/System Modelling/Simulation/Optimization, Athens, 6-9 July, 2005.

17. Anagnostopoulos J., *"A numerical simulation methodology for hydraulic Turbomachines"*, 5th GRACM Int'l Congress on Computational Mechanics, Limassol, Cyprus, 29 June – 1 July, 2005.

18. Anagnostopoulos J. and Mathioulakis D., *"Numerical simulation and hydrodynamic design optimization of a Tesla-type valve for micropumps"*, 5th WSEAS Int'l Conference on Simulation, Modeling and Optimization, Corfu, Greece, August 17-19, 2005.

19. Anagnostopoulos J. and Papantonis D., *"Experimental and numerical studies on runner design of Pelton turbines"*, Intl. Conference HIDROENERGIA 2006, Crieff, Scotland, UK, June 7-9, 2006.

20. Grapsas V., Mentzos M., Anagnostopoulos J., Filios A., Margaris D. and Papantonis D., *"Experimental and computacional study of a radial flor pump impeller"*, 2nd Intl. Conference IC-SCCE, Athens, Greece, 5-8 July, 2006.

21. Grapas V., Anagnostopoulos J. and Papantonis D., *"Parametric study and design optimization of a radial flow pump impeller"*, 2nd Intl. Conference IC-SCCE, Athens, Greece, 5-8 July, 2006.

22. Anagnostopoulos J. and Papantonis D., *"Pumping station design for a pumping-storage wind-hydro power plant"*, 19th Intl Conference ECOS 2006, Aghia Pelagia, Crete, Greece, 12-14 July, 2006.

23. Anagnostopoulos J. and Papantonis D., *"A numerical methodology for design optimization of Pelton turbine runners"*, HYDRO 2006 Intl. Conference, Porto Carras, Greece, 25-27 September, 2006.

24. Anagnostopoulos J., *"Numerical calculation of the flow in a centrifugal pump impeller using Cartesian grid"*, 2nd WSEAS Intl. Conference on Applied and Theoretical Mechanics (Mechanics '06), Venice, Italy, November 20-22, 2006.

25. Anagnostopoulos J.S. and Papantonis D.E., *"Flow modeling and runner design optimization in Turgo water turbines"*, Intl. Conference on Fluid Mechanics, Heat Transfer and Thermodynamics, FMHT '07, Prague, Czech Republic, July 27-29, 2007.

26. Grapsas V.A., Anagnostopoulos J.S. and Papantonis D.E., *"Experimental and numerical study of radial flow pump impeller with 2D-curved blades"*, 5th IASME/WSEAS Intl. Conference on Fluid Mechanics and Aerodynamics (FMA '07), Athens, Greece, August 25-27, 2007.

27. Anagnostopoulos J., "A Cartesian grid method for the simulation of flows in complex geometries", 3rd Intl. Conference on Adaptive Modeling and Simulation, ADMOS 2007, Göteborg, Sweden, October 22-24, 2007.

28. Stamatelos F. and Anagnostopoulos J., "*Numerical modeling of laminar flows with the Smoothed Particle Hydrodynamics Method*", 6th IASME/WSEAS Intl. Conference on Fluid Mechanics and Aerodynamics (FMA '08), Rhodes, Greece, August 20-22, 2008.

29. Grapsas V., Stamatelos F., Anagnostopoulos J. and Papantonis D., "*Numerical study and optimal blade design of a centrifugal pump by evolutionary algorithms*", 12 Intl. Conferenece on Knowledge-Based and Intelligent Information & Engineering Systems, KES2008, Zagreb, Croatia, September 3-5, 2008.

30. Anagnostopoulos J.S. and Papantonis D.E., "*Pumped storage wind-hydro plant in non-interconnected grids*", HYDRO 2008 Intl. Conference, Ljubljana, Slovenia, October 6-8, 2008.

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