Chris D. Dritselis

Birthday: 23/03/1978
Birthplace: Trikala (Greece)

Address: I. Zioga 13, Kalampaka, 24220, Trikala, Greece

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Education

2002-2007	PhD candidate. Department of Mechanical & Industrial Engineering, Univ. of Thessaly.
2001-2002	Postgraduate student. Dept of Mechanical & Industrial Engineering, Univ. of Thessaly.
1995-2001	Undergraduate student. Dept of Mechanical & Industrial Engineering, Univ. of Thessaly.

Theses

2007	PhD thesis: Study of turbulent air-particle two-phase flows in ducts.
2002	Postgrand thesis: Effect of spatial periodic wall temperature distributions in mixed
2002	convection channel flows

2001 <u>Diploma thesis:</u> Numerical simulation of flow and transport phenomena in cyclones for cement industry.

Research experience

2008-	Researcher, National Program of Controlled Thermonuclear Fusion, Department of Mechanical Engineering, Univ. of Thessaly, Association EURATOM – Hellenic Republic.
2009-	Visiting Researcher, Department of Mechanical & Manufacturing Engineering, Univ. of Cyprus, Cyprus (Dr. S. Kassinos - Total: 1 month mobility visit).
2009-	Visiting Researcher, Karlsruhe Institute of Technology (KIT/FZK), Karlsruhe, Germany (Dr. L. Buehler - Total: 1 month mobility visit).
2010-	Visiting Researcher, Statistique et Plasmas, Université Libre de Bruxelles, Belgium (Dr. D. Carati - Total: 2 months mobility visit).
2004-2006	Researcher, "Study of turbulent air-particle two-phase flow in ducts - Heracletos, Basic Research", Univ. of Thessaly, Greece.
2004	Researcher, "Adaptive CFD Code for Industrial Design and Environmental Applications - GSRT/03PRAXE18", Univ. of Thessaly, Greece.
2000-2001	Researcher, "Modeling and Control of the Processes of Precalciner for Cement Production - GSRT/96SYN121", Univ. of Thessaly, Greece.

Further experience

[1] Participation in the preparation of research proposals (a) 'Heracletos: Basic research', Ministry of National Education and Religious Affairs (funded by the EU), 2004-2006, (b) 'Adaptive CFD Code for Industrial Design and Environmental Applications', GSRT/03PRAXE18, 2004.

- [2] Participation and preparation of (a) annual reports and annexes, (b) annual Workplans and Workprograms in several tasks for the National Program of Controlled Thermonuclear Fusion, University of Thessaly, Association EURATOM Hellenic Republic (2008 to present).
- [3] Technical assistance in the 5th to 8th Schools of Physics & Technology of Fusion, Volos, Greece (2006~2009), and secretariat of the 9th and 10th Schools of Physics & Technology of Fusion, Volos, Greece (2010-2011).
- [4] Evaluation expert and participation in the 'Experts Evaluation Panel meeting', COST Domain Committee Materials, Physical and Nanosciences, Brussels, Belgium, September 2010.

Teach assistance

2010-2011	Teach assistance in the undergraduate course 'Fluid Mechanics' TEI-Technological Educational Institute of Larissa.
2005-2007 2008-2009	Teach assistance in the postgraduate course 'Advanced Fluid Mechanics', 4th Semester, Dept of Mechanical & Industrial Engineering, Univ. of Thessaly.
2002-2007	Teach assistance in the undergraduate course 'Fluid Mechanics P, 4th Semester, Department of Mechanical & Industrial Engineering, Univ. of Thessaly.
2001-2004	Teach assistance in the undergraduate course 'Turbomachines', 7th Semester, Department of Mechanical & Industrial Engineering, Univ. of Thessaly.
2007	Assistance in the graduate thesis 'Numerical simulation of two-phase air-droplets turbulent flow in a vertical pipe' (in Greek), M. Moutsikopoulou, Dept of Mechanical & Industrial Engineering, Univ. of Thessaly.
2006	Assistance in the graduate thesis 'Experimental study of Reynolds number effect in turbulent two-phase water-particles flows in a vertical pipe by using PDPA' (in Greek), Z. Doulgerakis, Dept of Mechanical & Industrial Engineering, Univ. of Thessaly.
2004	Assistance in the graduate thesis 'Experimental study of the particle concentration effect in water-particle, turbulent flow in a vertical pipe using PDPA' (in Greek), P. Koumoundouros, Dept of Mechanical & Industrial Engineering, Univ. of Thessaly.
2003	Assistance in the graduate thesis 'Study of water-particle, two phase flows in sudden expansion pipes-Verification of a PDA system' (in Greek), Th. Saraliotis, Dept of Mechanical & Industrial Engineering, Univ. of Thessaly.

Publications in scientific journals

- [1] D. K. Fidaros, C.A. Baxevanou, **C.D. Dritselis** and N.S. Vlachos, 'Numerical modeling of flow and transport processes in a calciner for cement production', Powder Technology, vol. 171:2, pp. 81-95, 2007.
- [2] **Chris D. Dritselis** and Nicholas S. Vlachos, 'Numerical study of educed coherent structures in the near-wall region of a particle-laden channel flow', Phys. Fluids, vol. 20, art. no. 055103 1-12, 2008.
- [3] I.E. Sarris, A.I. Iatridis, **C.D. Dritselis**, and N.S. Vlachos, 'Magnetic field effect on the cooling of a low-Pr fluid in a vertical cylinder', Phys. Fluids, vol. 22, art. no. 017101, 2010.
- [4] **C.D. Dritselis**, I.E. Sarris, D.K. Fidaros, and N.S. Vlachos, 'Transport and deposition of neutral particles in magnetohydrodynamic turbulent channel flows at low magnetic Reynolds numbers", Int. J. Heat and Fluid Flow, vol. 32, pp. 365-377, 2011.
- [5] Chris D. Dritselis and Nicholas S. Vlachos, 'Numerical investigation of momentum exchange between particles and coherent structures in low Re turbulent channel flow', Phys. Fluids, vol. 23, art. no. 025103 1-15, 2011.
- [6] **Chris D. Dritselis** and Nicholas S. Vlachos, 'Large eddy simulation of gas-particle turbulent channel flow with momentum exchange between the phases', Int. J. Multiphase Flow, vol. 37, pp. 706-721, 2011.

[7] **C. D. Dritselis** and N. S. Vlachos, 'Effect of magnetic field on near-wall coherent structures and heat transfer in magnetohydrodynamic turbulent channel flow of low Prandtl number fluids', Int. J. Heat and Mass Transfer, vol. 54, pp. 3594-3604, 2011.

Publications in books

[1] **C.D. Dritselis** and N.S. Vlachos, 'Direct numerical simulation of particle interaction with coherent structures in a turbulent channel flow', Springer – Progress in Turbulence III, Springer Proceedings in Physics, vol. 131, pp. 175-178, 2010 (Eds. Peinke J., Oberlack M., Talamelli A.) ISBN: 978-3-642-02224-1.

International conferences (with referees)

- [1] **C.D. Dritselis**, I.E. Sarris and N.S. Vlachos, 'Direct numerical simulation of particle pollutant transport and deposition in turbulent duct flows', 9th International Conference on Environmental Science & Technology, Rhodes Greece,1-3 September 2005 (published in Conference Proceedings, vol. A, pp. 346-351, also in the CD of Conference Proceedings).
- [2] **Chris D. Dritselis** and Nicholas S. Vlachos, 'Numerical study of educed coherent structures in the near wall region of a particle-laden channel flow', 6th International Conference on Multiphase Flow, Leipzig Germany, 9-13 July 2007 (full paper in the CD of Conference Proceedings, art. no. S3_Tue_C_24, pp. 1-10).
- [3] **C.D. Dritselis** and N.S. Vlachos, 'DNS/LES study of fluid-particle interaction in a turbulent channel flow at a low Reynolds number', 6th International Conference of Numerical Analysis and Applied Mathematics IC-NAAM 2008, Kos Greece, 16-20 September 2008 (published in AIP Conf. Proceedings, vol. 1048, pp. 735-738, 2008).
- [4] **C.D. Dritselis** and N.S. Vlachos, 'Direct numerical simulation of particle interaction with coherent structures in a turbulent channel flow', iTi Conference on Turbulence III, Bertinoro Italy, 12-15 October 2008.
- [5] **C.D. Dritselis**, M. Moutsikopoulou and N.S. Vlachos, 'Modeling of droplet deposition in two-phase gas-liquid annular pipe flows for environmental applications', 11th International Conference on Environmental Science & Technology, Chania Crete, Greece, 3-5 September 2009 (published in Conference Proceedings, vol. A, pp. 269-276, also in the CD of Conference Proceedings).
- [6] I.E. Sarris, A.I. Iatridis, **C.D. Dritselis** and N.S. Vlachos, 'Low-Prandtl number MHD cooling in a vertical cylindrical container', 12th EUROMECH European Turbulence Conference-ETC12, Marburg Germany, 7-10 September 2009.
- [7] **C.D. Dritselis** and N.S. Vlachos, 'On the effect of a transverse magnetic field on the coherent structures near the wall of a channel, 6th International Symposium on Turbulence, Heat and Mass Transfer THMT09, Rome Italy, 14-18 September 2009 (published by Begell House, Eds. K. Hanjalić, Y. Nagano, S. Jakirlić, pp. 997-1000, 2009. ISBN 978-1-56700-262-1, full paper in the CD of Conference Proceedings).
- [8] **C.D. Dritselis**, 'Large eddy simulation of particle-laden turbulent channel flow with transverse roughness elements on one wall', 7th International Conference of Numerical Analysis and Applied Mathematics ICNAAM 2009, Crete Greece, 18-22 September 2009 (published in AIP Conf. Proceedings, vol. 1168, pp. 677-680, 2009).
- [9] **C.D. Dritselis**, A. Iatrides, I.E. Sarris and N.S. Vlachos, 'Turbulent dispersion of nonmetallic impurities in magnetohydrodynamic channel flow of liquid metals at lo magnetic Reynolds number', 6th International Conference on Electromagnetic Processing of Materials EPM 2009, Dresden Germany, 19-23 October 2009, paper no. 226, pp. 1-4.
- [10] **C.D. Dritselis** and N.S. Vlachos, 'Damping effect of magnetic fields on the turbulent coherent structures in material processing', 6th International Conference on Electromagnetic Processing of Materials EPM 2009, Dresden Germany, 19-23 October 2009, paper no. 224, pp. 1-4.
- [11] **C.D. Dritselis**, 'Numerical investigation of particle-laden turbulent channel flow with either longitudinal or transverse roughness elements on the lower wall', 7th International Conference on Multiphase Flow, Tampa, FL USA, May 30-June 4 2010.

Conferences and meetings

- [1] D. Fidaros, **Ch. Dritselis** and N. Vlachos, 'Αριθμητικό Μοντέλο Προσομοίωσης Διεργασιών Ασβεστοποιητή [Numerical Modeling of Calciner Processes]', FLOW 2000: 2nd Meeting of Research Activities in Fluid Flow Phenomena in Greece, pp. 126-129, Univ. of Thessaly, Volos, Greece, 22 May 2000 (in Greek).
- [2] **C. Dritselis**, D. Fidaros and N. Vlachos, 'Numerical Simulation of Flow and Transport Phenomena in Cyclones', 1st Meeting of the Greek Section of ERCOFTAC, Thessaloniki Greece, 31 Jan.-1 Feb. 2002.
- [3] **Ch. Dritselis**, D. Fidaros and N. Vlachos, 'Προσομοίωση Φαινομένων Ροής και Μεταφοράς σε Κυκλώνες Παραγωγής Τσιμέντου [Simulation of Flow and Transport Phenomena in Cyclones for Cement Production], FLOW 2002: 3rd Meeting of Research Activities in Flow Phenomena in Greece, pp. 170-174, Univ. of Patras, 2-3 Oct. 2002 (in Greek).
- [4] D. Fidaros, **C. Dritselis** and N. Vlachos, 'Numerical aspects of chemically reacting flows in cement calciners', 3rd Meeting of the Greek Section of Combustion Institute, Patras, Greece, 2-3 October 2003.
- [5] **C. Dritselis**, I. Sarris and N. Vlachos, 'Μελέτη της εναπόθεσης σε τυρβώδη ροή σε κατακόρυφο κανάλι με άμεση αριθμητική προσομοίωση [Numerical study of particle deposition in a turbulent channel flow using DNS]', FLOW2004: 4th Meeting of Research Activities in Fluid Flow in Greece, pp. 228-235, NTUA, Athens, 26 Nov. 2004 (in Greek).
- [6] I. Sarris, **C. Dritselis**, A. Grecos and N. Vlachos, 'Αμεση προσομοίωση της επίδρασης μαγνητικού πεδίου στην ελεύθερη ψύζη υγρού μετάλλου σε κατακόρυφο κυλινδρικό δοχείο [Direct numerical simulation of the magnetic field effect on free cooling of metals in a vertical cylindrical container]', FLOW2004: 4th Meeting of Research Activities in Fluid Flow in Greece, NTUA, Athens (in Greek).
- [7] I. Sarris, **C. Dritselis**, A. Grecos and N. Vlachos, 'Μελέτη της επίδρασης μαγνητικού πεδίου στην ψύξη με ελεύθερη συναγωγή υγρού μετάλλου σε κυλινδρικό δοχείο [Study of magnetic field effect on the cooling by free convection of a liquid metal in a cylindrical container], CD-ROM 1st National Conference of Mechanical-Electrical Engineers, Athens, 38-30 March 2005 (in Greek).
- [8] **C. Dritselis** and N. Vlachos, 'Συνεχτικές δομές σε τυρβώδη διφασική ροή αέρα-σωματιδίων σε αγωγό [Coherent structures in two-phase flow of air-particles in a duct]', FLOW2006: 5th Meeting of Research Activities in Fluid Flow in Greece, Univ. of Patras, 4 Nov. 2006 (in Greek).
- [9] D.K. Fidaros, C.A. Baxevanou, **C.D. Dritselis** and N.S. Vlachos, 'Modelling of combustion and calcination in a cement precalciner', Proceedings of the European Combustion Meeting ECM2007, Crete Greece, 11-13 April 2007.
- [10] **C. Dritselis** and N. Vlachos, 'Μελέτη αλληλεπίδρασης ρευστού-σωματιδίων σε τυρβώδη ροή σε κανάλι με χρήση άμεσης αριθμητικής προσομοίωσης και προσομοίωσης μεγάλων δινών [Study of fluid-particle interaction in a turbulent channel flow using DNS/LES methods]', FLOW2008: 6th Meeting of Research Activities in Fluid Flow in Greece, pp. 1-8, Kozani, 28 Nov. 2008 (in Greek).
- [11] A. Iatridis, I.E. Sarris, **C.D. Dritselis** and N.S. Vlachos, 'Επίδραση μαγνητικού πεδίου στη ψύξη ρευστού σε κυλινδρικό δοχείο με ελεύθερη συναγωγή [Magnetic field effect on the natural convection cooling in a cylindrical container]', FLOW2008: 6th Meeting of Research Activities in Fluid Flow in Greece, pp. 1-8, Kozani, 28 Nov. 2008 (in Greek).
- [12] **C.D. Dritselis**, A. Iatridis, E. Benos, I.E. Sarris and N.S. Vlachos, 'Near wall coherent structures in MHD turbulent channel flow with heat transfer', FLOW2010: 7th Pan-Hellenic Conference of Research Activities in Fluid Flow, pp. 73-82, Thessaloniki, 12-13 Nov. 2010.
- [13] A. Iatridis, I.E. Sarris, **C.D. Dritselis**, and N.S. Vlachos, 'Επίδραση μαγνητικού πεδίου στη ψύξη ρευστού σε κυλινδρικό δοχείο με ελεύθερη συναγωγή [Magnetic field effect on the natural convection cooling in a cylindrical container', FLOW2010: 7th Pan-Hellenic Conference of Research Activities in Fluid Flow, pp. 225-232, Thessaloniki, 12-13 Nov. 2010 (in Greek).

Announcements-lectures-posters

- [1] **C. Dritselis**, I. Sarris and N. Vlachos, 'Magnetohydrodynamic turbulent channel flow with neutral particle dispersion', poster presentation, 3rd School on Fusion Physics & Technology, Volos Greece, 29 March-3 April 2004.
- [2] I. Sarris, **C. Dritselis**, A. Graikos and N. Vlachos, 'Magnetic field effect on the natural convection cooling in a vertical cylindrical container', poster presentation, 4th School on Fusion Physics & Technology, Volos Greece, 18-22 April 2005.
- [3] **C. Dritselis**, I. Sarris and N. Vlachos, 'Particle-turbulence interaction in MHD channel flow', presented at the Research Seminar Session of 7th School on Fusion Physics & Technology, Volos Greece, 14-19 April 2008.
- [4] **C. Dritselis** and N. Vlachos, '*Near-wall coherent structures in MHD turbulent flows*', presented at the Workshop-2: Viscous MHD Flow, Heat Transfer & Turbulence (Dedicated to Dr. Alkis P. Grecos Ret. Faculty U. Libre de Bruxelles), 8th School on Fusion Physics & Technology, Volos Greece, 6-11 April 2009.
- [5] **C. Dritselis**, I. Sarris and N. Vlachos, 'Numerical investigation of MHD turbulent particle-laden flows using DNS/LES methods', presented at the Research Seminar Session of 8th School on Fusion Physics & Technology, Volos Greece, 6-11 April 2009.
- [6] A. Iatridis, I. Sarris, **C. Dritselis** and N. Vlachos, *'MHD natural convection cooling in cylindrical domains'*, presented at the Research Seminar Session of 8th School on Fusion Physics & Technology, Volos Greece, 6-11 April 2009.
- [7] **C.D. Dritselis**, 'Particle-coherent structures interactions', presented at the Department of Mechanical & Manufacturing Engineering, Univ. of Cyprus, Cyprus, 27 October 2009.
- [8] **C. Dritselis**, I. Sarris, D. Fidaros and N. Vlachos, 'Neutral particle transport and deposition in turbulent MHD flows', poster presentation, 9th School on Fusion Physics & Technology, Volos Greece, 19-23 April 2010.
- [9] I. Sarris, A. Iatrides, **C. Dritselis**, I. Sarris, D. Fidaros and N. Vlachos, 'Magnetic field effect on the cooling of low-Pr fluids in a vertical cylinder', poster presentation, 9th School on Fusion Physics & Technology, Volos Greece, 19-23 April 2010.
- [10] **C. Dritselis** and N. Vlachos, 'Coherent structures in MHD turbulent flows', presented at the Workshop-2: MHD & Plasma Stability, 9th School on Fusion Physics & Technology, Volos Greece, 19-23 April 2010.
- [11] **C. Dritselis**, I. Sarris, D. Fidaros, and N. Vlachos, *'Transport and deposition of neutral particles in MHD turbulent channel flows at low Rm'*, poster presentation, 10th School on Fusion Physics & Technology, Volos Greece, 9-13 May 2011.
- [12] **C. Dritselis** and N. Vlachos, 'MHD turbulent channel flow with heat transfer', presented at the minisymposium during the 10th School on Fusion Physics & Technology, Volos Greece, 9-13 May 2011.

Fellowships

- [1] Fellowships from the Department of Mechanical & Industrial Engineering, 2001-02, 2002-03.
- [2] 'HERACLETOS: Basic research', Ministry of National Education and Religious Affairs (funded by the EU), 2004-2006.

Referee for scientific journals

[1] International Journal of Multiphase Flow, IJMF.

Personal skills

Mother tongue: Greek.

Other languages:

English.

Very good knowledge of:

- Operating systems: DOS, Windows and UNIX (Linux).
- Programs: MS Office, AutoCad, Mathematica, LINDO, MRP and LaTeX.

Computers:

- Commercial CFD applications: TEACH, DIAN, FLUENT, OpenFoam (finite volume based CFD codes), as well as several in-house CFD codes.
- Programming languages: FORTRAN 77/90/95 and C++.
- Experience with LES Large Eddy Simulation and with high-resolution numerical simulations, DNS Direct Numerical Simulation (finite-differences and pseudospectral CFD codes).

Other:

- Good knowledge of large-scale computations on high performance computing platforms and MPI parallelization (*Currently working on parallelizing several in-house CFD codes*).
- Good knowledge of experimental methods based on LASER, such as LDA and PDA.

Research fields and interests

Research:

- Modeling and physics of turbulence.
- Theoretical, numerical and experimental study of fluid-particle and particle-particle interactions.
- Magnetohydrodynamic flows (Full MHD equations, Low Rm approximation) with/without heat transfer and/or particle transport.
- Modeling (DNS/LES) and study of wall roughness effects on the mechanisms of turbulent transport of particles.
- Development of subgrid-scale turbulence models (LES) and numerical methods for the numerical solution of Navier–Stokes equations.
- Particle motion in the presence of stochastic electromagnetic fields.

Interests:

Music (classic guitar), photography, painting, and athletics.

Citations

- [1] Cao, S.-X., Zhang, Y., Chen, Y., Liu, S.-L., Zhang, S.-S., 2010, Aspen Plus based study on the oxygen consumption of alternative fuels in the cement calciner combustion process, 2010 International Conference on E-Product E-Service and E-Entertainment, ICEEE2010, art. no. 5660137
- [2] Li, W., Wu, B., Zhang, J., Chu, Y., 2011, Structure and function design of automatic control system for NSP cement clinker production process, Shenyang Jianzhu Daxue Xuebao (Ziran Kexue Ban)/Journal of Shenyang Jianzhu University (Natural Science) 27 (1), pp. 200-204
- [3] Zhang, Y., Cao, S.-X., Shao, S., Chen, Y., Liu, S.-L., Zhang, S.-S., 2011, Aspen Plus-based simulation of a cement calciner and optimization analysis of air pollutants emission, Clean Technologies and Environmental Policy 13 (3), pp. 459-468
- [4] Li, J., Wang, H.-F., Liu, Z.-H., Chen, S., Zheng, C.-G., 2011, PIV measurements of the effects of solid particulates on the coherent structures in a horizontal channel flow, Kung Cheng Je Wu Li Hsueh Pao/Journal of Engineering Thermophysics 32 (7), pp. 1157-1160.
- [5] Huang, Y., Marshall, J.S., 2011, Experiments on bounded vortex flows and related particle transport, Journal of Fluids Engineering, Transactions of the ASME 133 (7), art. no. 071204.

- [6] Zhao, L.H., Andersson, H.I., Gillissen, J.J.J., 2010, Turbulence modulation and drag reduction by spherical particles, Physics of Fluids 22 (8), art. no. 081702.
- [7] Wang, B., 2010, Inter-phase interaction in a turbulent, vertical channel flow laden with heavy particles. Part I: Numerical methods and particle dispersion properties, International Journal of Heat and Mass Transfer 53 (11-12), pp. 2506-2521.
- [8] Wang, B., 2010, Inter-phase interaction in a turbulent, vertical channel flow laden with heavy particles. Part II: Two-phase velocity statistical properties, International Journal of Heat and Mass Transfer 53 (11-12), pp. 2522-2529.
- [9] Li, J., Wang, H.F., Liu, Z.H., Liu, Y.M., Han, H.F., Zheng, C.G., 2010, Experimental investigation on turbulence modulation in the boundary layer of a horizontal particle-laden channel flow with relative low mass loading ratios, AIP Conference Proceedings 1207, pp. 436-441.
- [10] Li, J., Liu, Z.-H., Wang, H.-F., Chen, S., Liu, Y.-M., Han, H.-F., Zheng, C.-G., 2010, Turbulence modulations in the boundary layer of a horizontal particle-laden channel flow, Chinese Physics Letters 27 (6), art. no. 064701.
- [11] Dou, H., Chen, Z., Huang, J., 2009, Numerical study of the coupled flow field in a Double-spray calciner, Proceedings-2009 International Conference on Computer Modeling and Simulation, ICCMS 2009, art. no. 4797367, pp. 119-123.
- [12] Wang, Z., Yuan, M., Wang, B., Wang, H., Wang, T., 2008, Dynamic model of cement precalcination process, 2008, Proceedings of the IASTED International Conference on Modelling, Identification, and Control, MIC.
- [13] Ahn, C.-I., Yoo, J.-B., Kim, Y.-T., Yi, S.-C., 2008, Computational modeling of the sintering process of ceramic particles in a fluidized bed furnace, Journal of Ceramic Processing Research 9 (6), pp. 569-575.
- [14] Pogačnik, Z, 2008, Connection between analysis results Carbonate bomb and thermal analysis, [Zveza med analiznimi rezultati- Karbonatna bomba in termična analiza], Materiali in Tehnologije 42 (1), pp. 27-32.

References

- [1] Prof. Vasilis Bontozoglou, Department of Mechanical Engineering, Univ. of Thessaly, Athens Avenue, 38334 Volos, Greece, Tel.: 0030 24210 74069, Fax: 0030 24210 74085, Email: bont@mie.uth.gr.
- [2] Prof. Dimitris Valougeorgis, Department of Mechanical Engineering, U. of Thessaly, Athens Avenue, 38334 Volos, Greece, Tel.: 0030 24210 74058, Fax: 0030 24210 74085, Email: diva@mie.uth.gr.
- [3] Emeritus Prof. Nicholas Vlachos, Department of Mechanical Engineering, Univ. of Thessaly, Athens Avenue, 38334 Volos, Greece, Tel.: 0030 24210 74094, Fax: 00302421074085, Email: vlachos@mie.uth.gr.