

DOMENICO BORELLO, PH.D.
CURRICULUM VITAE ET STUDIORUM

PART I – General Information

Full Name Domenico Borello

PART II - Education

2000 **Ph. D. Graduation** in ‘ENERGETICA’, University of Rome “La Sapienza”
1995 **M.Sc. Degree** in Mechanical Engineering with full marks (110/110), University of Rome “La Sapienza”

PART III – Appointments

2014 **National scientific qualification to function of Associate Professor (Abilitazione Scientifica Nazionale), SC: 09/C1**, Macchine e Sistemi per l’Energia e l’Ambiente
2012 - 2015 **Assistant Professor (RTDA) – L.240/2010** - Dipartimento di Ingegneria Meccanica e Aerospaziale, Sapienza Università di Roma, ING-IND/09, Sistemi per l’Energia e l’Ambiente
2009 - 2012 **Assistant Professor (RTDA)** Dipartimento di Ingegneria Meccanica e Aerospaziale, Sapienza Università di Roma, ING-IND/09, Sistemi per l’Energia e l’Ambiente
2005 – 2009 **Research Fellow (Assegnista di Ricerca) (4 years)** on: ‘CFD prediction of Axial Compressor stages: development of turbulence models and High Performance Computing techniques appropriate for a FEM code’ Dipartimento di Meccanica ed Aeronautica, 'Sapienza' Università di Roma, ING-IND/08: Macchine a fluido
2001- 2005 **Research Fellow (Assegnista di Ricerca) (4 years)** on: ‘Innovative Turbulence and Numerical Models for CFD Finite Element analysis in incompressibile axial turbomachines’ Dipartimento di Meccanica ed Aeronautica Università degli Studi di Roma 'La Sapienza'
2001-2002 **Visiting researcher** at *Technical University of Delft* – ThermoFluid Section, Prof. Hanjalic (6 months)
2001-2002 **Visiting researcher** at ENEA ‘National Center for Sustainable Energy’, ERG-SIREHAB section

PART IV – Teaching experience

Teaching activities (at Sapienza Università di Roma) last 7 years (started in 2003)

2012-today **Lecturer** of ‘Sistemi per l’Energia e l’Ambiente’, B.Sc. course, Faculty of Civil and Industrial Engineering, ‘Sapienza’ Università di Roma, Polo di Latina
2009- today **Lecturer** of ‘Fluidodinamica delle Macchine’, M.Sc. course, Faculty of Civil and Industrial Engineering, ‘Sapienza’ Università di Roma
2012-2014 **Lecturer** of ‘Sistemi Energetici’, B.Sc. course, Faculty of Civil and Industrial Engineering, ‘Sapienza’ Università di Roma, Polo di Latina
2010-2011 **Lecturer** of ‘Energetica’, B.Sc. course, Faculty of Environmental Engineering, ‘Sapienza’ Università di Roma
2008-2009 **Co-Lecturer** of ‘Sistemi Energetici’, Faculty of Mechanical Engineering, ‘Sapienza’ Università di Roma, Polo Latina

- 2006-2009 **Lecturer** of the monograph ‘Modellazione della turbolenza nelle macchine a fluido’ in ‘Fluidodinamica delle Macchine’, M.Sc. course held by Prof. Franco Rispoli, Faculty of Engineering, ‘Sapienza’ Università di Roma
- 2007-2009 **Module** ‘Scrutiny of turbulence models in fluid machinery relevant test cases’ (in English) in ‘Introduction to Modelling and Simulation of Turbulent Transport Processes’ course, held by prof. Kemal Hanjalic, Faculty of Mechanical Engineering, ‘Sapienza’ Università di Roma
- 2008 **Adjoint Lecturership** on ‘Macchine’, Faculty of Mechanical Engineering, ‘Sapienza’ Università di Roma, Polo Latina

Web and E-Teaching activities

- 2009-2011 **Lecturer** of ‘Thermo-Fluid-Dynamics’ (Termofluidodinamica), B.Sc. **e-learning** course, Faculty of ‘Scienze e Tecnologie Applicate’, Università Telematica G. Marconi, Roma

International Teaching Activities

- 2012 **Ph.D. Course** ‘Modelling of transport processes in turbulent flows’, Universidad de Piura, contact: Prof. Rafael Saavedra Garcia Zabaleta (20 hours)
- 2012 **Short Course** ‘Turbulence, Heat and Mass Transfer simulation using advanced CFD tools’, Institute of Thermophysics SB RAS, Novosibirsk, Russia, contact: Prof. Dimitry Markovich (40 hours)
- 2011 **Seminar** ‘Modelling convective heat transfer and particle deposition in industrially relevant turbulent flows’ held in Technical University of Dresden (Germany), 29/09/2011, contact: Prof. Jochen Froelich
- 2001 **Seminar** “XENIOS-A Finite Elements Parallel Domain Decomposition Method for Incompressible Turbomachinery Flows”, held in Technical University of Delft (NL) in March 2001.

Since 2000 the candidate was actively involved in the supervision and co-supervision of several B.Sc., M.Sc., students.

The candidate was supervisor of 2 Ph.D. students and co-supervisor of 3 Ph.D. students.

Presently, he is supervisor of **1 Ph.D. and 2 M.Sc. candidates.**

PART V – Awards, Organisation of International Events, Society Memberships

Awards

- 2013 **Best Paper Award** ‘Experimental and Numerical Analysis of Steam-Oxygen Fluidized Gasifier Feeding a Combined SOFC/ORC Power Plant’, Borello D., Di Carlo A., Marchegiani A., Tortora E., Rispoli F., ASME Turbo Expo 2013, 3-7 Giugno 2013. S. Antonio, Texas, USA, **Coal, Biomass and Alternative Fuel Committee**

Organizer of International Events

- 2015 **Vanguard Chair** (responsible for the organization of 5-6 thematic sessions) for TurboExpo 2016 Conference, *Numerical Internal Cooling*, Heat Transfer Committee, Seoul, South Korea, 13-17 June 2016, www.asmeconferences.org/TE2016/
- 2014-2015 **Co-Chairman** of ‘8th International Seminar on Offshore Wind and other Renewable Energies in Mediterranean and other European Seas’ OWEMES 2015, Rome, Italy, 8-9 October 2015, www.owemes-15.eu
- 2014-2015 **Organizer** of Workshop ‘New Advances in Gas Turbine Design’, Conference Modelling Fluid Flows, CMFF2015, Budapest, Hungary, 1-4 Sept. 2015, www.cmff.hu

- 2014-2015 **Scientific Secretary and Editor of Proceedings** of ‘8th Symposium on Turbulence, Heat and Mass Transfer’, Sarajevo, Bosnia Herzegovina, September 15-18, 2015, (202 papers from 6 Continents), www.thmt-15.org
- 2015 **Session Organizer and Session Chair** (1 Session) and **Session Co-Chair** (1 Session) in ‘TurboExpo 2015 Conference’, Heat Transfer Committee, Montreal, Quebec, Canada, 15-19 June 2015, www.asmeconferences.org/TE2015//
- 2015 **Member of Scientific Advisory Committee** ‘Direct and Large-Eddy Simulation 10, DLES10’, May 27-29, 2015, Limassol, Cyprus, www.dles10.org
- 2014-2015 **Member of Scientific Advisory Committee** ‘Fan 2015: International Conference On Fan Noise, Technology & Numerical Methods’ 15-17 April 2015, Lyon, France, www.fan2015.org
- 2013-2014 **Member of Scientific Advisory Committee** ‘10th International ERCOFTAC Symposium on Engineering Turbulence Modelling and Measurements’, ETMM 10, 17-19 September 2014, Don Carlos Resort, Marbella, Spain, www.ercoftac.org/events/etmm10/
- 2014 **Session Organizer and Session Chair** (2 Session) in TurboExpo 2014 Conference Heat Transfer Committee, Dusseldorf, 16-20 June 2015, www.asmeconferences.org/TE2014//
- 2013 **Member of Scientific Advisory Committee and Session Organizer** ‘Direct and Large-Eddy Simulation 9, DLES9’, April 3-5, 2013, Dresden, Germany, www.dles9.org
- 2013 **Session Organizer and Session Chair** (1 Session) and **Session Co-Chair** (2 Sessions) in TurboExpo 2013 Conference, Heat Transfer Committee, San Antonio, 3-7 June 2013, www.asmeconferences.org/TE2013//
- 2012 **Member of Scientific Advisory Committee and Session Organizer** ‘Int. Conf. on Fan Noise, Technology and Numerical Models, FAN2012’, April 18-20, 2012, Senlis, France, www.fan2012.org.
- 2011-2012 **Organizing Secretary and Editor of Proceedings** of ‘7th Symposium on Turbulence, Heat and Mass Transfer’, Palermo, Sicily, Italia, September 24-27, 2012, www.thmt-12.org
- 2011-2012 **Co-Organizer** of Workshop ‘Numerical methods for turbomachinery aerodynamics’, Conference Modelling Fluid Flows, CMFF2012, Budapest, Hungary, 5-7 Sept. 2012, www.cmff.hu
- 2011-2012 **Scientific Secretary** of ‘7th European Seminar on Offshore Wind and other Renewable Energies in Mediterranean and other European Seas’ OWEMES-2012, Rome, Italia, September 5-7, 2012, www.owemes-2012.eu
- 2008-2009 **Organizing Secretary and Associate Technical Editor** of ‘6th International Symposium on Turbulence, Heat and Mass Transfer’, Rome, Italia, September 14-18, 2009, www.thmt-09.org

Academic Committes (at Sapienza Università di Roma)

- 2015 **Board Member** of Second Level Master Course ‘Efficienza Energetica e Fonti Rinnovabili-EFER’, Dipartimento di Ingegneria Meccanica e Aerospaziale, Sapienza Università di Roma
- 2013- **Member of ‘Commissione Didattica’** Mechanical Engineering
- 2013- **Coordinator** of Erasmus Bilateral Agreements
‘Facoltà di Ingegneria Civile e Industriale – Sapienza Università di Roma / Faculty of Mechanical Engineering and Transport Systems - TU Berlin, D;

Scientific and Management Committees

- 2014- **Member of the Scientific Council** of the *International Centre for Heat and Mass Transfer* (ICHMT, www.ichmt.org)
- 2014- **Member** of the *ASME IGTI Coal, Biomass and Alternative Fuel Committee*
- 2012- **President** of ‘*OWEMES-Offshore Wind and other Marine Renewable Sources in Mediterranean Seas*’ No-profit association, www.owemes.org
- 2012- **Member** of the *ASME IGTI Heat Transfer Committee*
- 2012- **Secretary** and **Member of the Directive Board** of ‘*Associazione Termotecnica Italiana, Sezione Lazio*’ (Regional division of Italian Thermal Plant Association), www.ati-lazio.it
- 2012- **Secretary** of *ERCOFTAC Italian Pilot Center*
- 2011 **Member** of the *ASME IGTI Cycles Innovation Committee*
- 2011 **Member of Ph.D. committee** of Tobias Kempe, TU Dresden (Germany), 30/9/2011, thesis supervisor Prof. Jochen Froelich, Professur für Strömungsmechanik, TU Dresden.

Reviewing Activities for National and International Institutions

- 2015 Consultant and Projects reviewer for **Regione Lombardia**
- 2013 Reviewer for the **Czech Science Foundation**, Romanian Ministry of Education Research, Youth and Sport, in the calls devoted to research development in Romania (8 projects evaluated)
- 2012 Reviewer for **European Commission, ERC Starting Grant**.
- 2011-current Reviewer for the **National Research Council**, Romanian Ministry of Education Research, Youth and Sport, in the calls devoted to research development in Romania
- 2008-2009 Consultant and Projects reviewer for **Regione Calabria**
- 2003-current Reviewer for international journals: ‘*Int. J. for Numerical Methos in Fluids*’, ‘*J. Turbomachinery*’, ‘*Int. J. of Heat and Fluid Flows*’, ‘*Flow, Turbulence and Combustion*’, ‘*Int. J. Heat and Mass Transfer*’,

PART VI – Funding Information

As Principle Investigator PI

- 2014 **Hybrid LES/RANS study of Heat transfer mechanisms and Particle tracking in a rotating rib-roughened channel**, ISCRA Project, 56,000 CPU hours
- 2013 **Multi-phase LES and experimental study for the optimal design of an innovative scrubber** Project funded by Sapienza University of Rome, (12,000 €)
- 2012 **Study for efficient recycling of canvas from exhaust tyres in environmental applications**, FILAS Co-research project- Regione Lazio, Italy (165,000 €)
- 2011 **Development and assessment of LES-based and instability sensitised URANS models for turbomachinery-related flows with rotation effects, fouling and erosion**, CASPUR HPC Grant, 2011
- 2010 **Development of LES based techniques design of axial flow fans subjected to high temperatures and erosion/deposition**, Project funded by Sapienza University of Rome. (13,500 €)
- 2010 **LES and Hybrid LES/RANS study of trailing edge cooling in a rotating frame of reference**, CASPUR HPC Grant, 2010

- 2006-2007 **CFD prediction of turbulent reactive flows and ventilation derating in a Motorway tunnel in presence of fire.** Contract TRAIN AIRES Tech (40,000 €).
- 2005- **CFD prediction of Axial Compressor stages: development of appropriate turbulence models and High Performance Computing techniques appropriate for a FEM code.** Dipartimento di Meccanica ed Aeronautica, ‘Sapienza’ Università di Roma
- 2002 - 2004 **Development of an advanced numerical approach for turbulence and transition in axial compressors,** Progetto Giovani Ricercatori –MIUR 2002 (5,000 €)
- 2000-2004 **Second order turbulence modeling in axial flow turbomachines,** Research Activity at Technical University of Delft (TUD) – co-operating with Prof. K. Hanjalic- in the ambit of a joint research project between UTD and *Dipartimento di Meccanica e Aeronautica*, University of Rome “La Sapienza”
- 1999-2000 **Implementation of advanced turbulent modelling on parallel finite element code,** High Performance Computing Grant, CINECA.

As Project Coordinator

- 2011-2012 **‘Far-Seas Project- Development of fuel cells based propulsion system for AIP propulsion in submarines’,** Contract DIMA-Sapienza Università di Roma – Marina Militare Italiana (660,000 €)
- 2011-2013 **‘ECOCEL project –Numerical/experimental study of innovative configurations for Direct Methanol Fuel Cells’,** funded by Ministry of Environment (250,000 €)

As Investigator

- 2014 **‘Energy-autonomous vehicles for water health monitoring’,** Sapienza AWARD Project
- 2010 **‘Development of CFD tools for a credible prediction of turbulent noise generation and propagation in turbomachinery flows’,** CASPUR HPC Grant, 2010
- 2009 **‘Internal and External Cooling Analysis in Gas Turbine Blades’,** CASPUR HPC Grant 2009
- 2008- **‘Analysis of Cooling Techniques for Gas Turbines HP Stages’,** Research funded by Sapienza Università di Roma
- 2007- **Marie Curie Chair ‘COMSITA’ project,** Prof. Kemal Hanjalic, funded by EU under 6th Framework Program, contract nr. EU-EXC-42633.
- 2003-2005 **Multiscale Methodology for industrial Flows using Finite Elements,** Cofin 2003, Program funded by University and Research Minister, in cooperation with University of Bari and Milan, Overall Project Leader Prof. Napolitano, Local Project Leader, Prof. Orlandi.
- 2001-2003 **CFD research on axial flow turbomachinery by using advanced FE techniques (continued),** Cofin 2001, Program funded by University and Research Minister, in cooperation with University of Bari and Milan, Overall Project Leader Prof. Napolitano, Local Project Leader, Prof. Rispoli.
- 1999-2001 **CFD research on axial flow turbomachinery by using advanced FE techniques,** Cofin 1999 Program funded by University and Research Minister, in cooperation with University of Bari and Milan, Overall Project Leader Prof. Napolitano, Local Project Leader, Prof. Arrighetti.
- 1999-2001 **Investigation on axial flow fans aerodynamic and energetic characteristic for optimized design procedure using concerted experimental-numerical techniques,** Scientific co-operation program Department of Fluid Mechanics, Technical University of Budapest - *Dipartimento di Meccanica e Aeronautica*, University of Rome “La Sapienza”.

- 1999-2000 **CFD investigation on smoke and pollutants diffusion in motorway tunnels** , Research contract ENEA - *Dipartimento di Meccanica e Aeronautica*, University of Rome “La Sapienza”.
- 1998-2000 **Development and implementation of advanced turbulence modelling on CFD codes**, in the framework of MECBURN – BRITE/EURAM project.

PART VII – Research & Scientific Activities

Theme: Modelling&Simulation of Flow and Heat Transfer in Turbines and Compressors

Development of computational approaches for the study of the flow and heat transfer in complex geometries representing turbines or compressors blades aiming at: a) reconstructing the flow development in vanes or blades thus evaluating the main loss sources; b) describing the heat transfer between the flow and the solid surfaces thus describing the heat removal and consequently the cooling efficiency. Considered approaches range from advanced elliptic-relaxation, non-linear or Second Moment URANS closures, LES simulations as well as combined LES and RANS schemes (seamless hybrid, PANS). Both Finite Volumes and Finite Elements Models were adopted and developed, coupled with High Performance Computing tools to enhance code performance.

Theme: Syngas from Biomass

Experimental research activities in the field of syngas cleaning using innovative catalyzers using mayenite, that is able to reduce carbon deposition over the catalysts, thus improving tar removing capabilities and operating life of the catalyzers.

Theme: Modelling of the Energy Systems

Modelling and simulation of complex energy systems integrating different intermittent Renewable Energy Systems with high efficiency power units (e.g. SOFC) aiming at feeding heat and power users. Ad-hoc, proprietary models were developed in the framework of object-oriented programmable software such as Trnsys and ChemCad.

Theme: LCA of Energy Systems

LCA studies analyzing the conversion of wastes in energy source, evaluating the impact of a) biogas or b) landfill gas production or c) incineration. Analysis of the life cycle environmental impact for alternative solutions. Use of Gabi software.

Theme: Particle Laden Flows in Energy Systems

Development of a Lagrangian numerical code able to track the dispersion of solid particles (considered one by one or dispersed in a cloud) in in a carrier flow. Development of different approaches for impact model: elastic, elasto-plastic. Influence of the temperature in the impact mechanism. Modelling of deposit and/or erosion. Application to compressor and turbine blades, biomass combustors.

PART VIII – Summary of Scientific Achievements

Publications Record

(data from SCOPUS 2 October 2015)

H-index: **9**; Number of citation: **272**; Number of indexed papers: **58**

List of Publications

Articles published in peer-reviewed scientific journals, referenced by Scopus

1. Borello D., Cedola L., Meloni R., Venturini P., De Filippis P., de Caprariis B., Frangioni G.V., 2015, 'A 3D packed bed model for biomass pyrolysis: experimental tests and model calibration, to appear on *Applied Energy*, Elsevier, doi:10.1016/j.apenergy.2015.08.007
2. Borello, D., F., Salvagni, A., Hanjalic, K., 2015, 'Effects of Rotation on Flow in an Asymmetric Rib-roughened Duct: LES Study', to appear on *International Journal of Heat and Mass Transfer*, Elsevier, DOI: 10.1016/j.ijheatfluidflow.2015.07.012
3. Di Carlo A., Borello D., Sisinni M., Savuto, E., Venturini, P., Bocci, E., Kuramoto K., 2015, Reforming of tar contained in a raw fuel gas from biomass gasification using nickel-mayenite catalyst, in *International Journal of Hydrogen Energy*, Elsevier, 40, pp. 9088–9095, doi:10.1016/j.ijhydene.2015.05.128
4. Evangelisti, S., Lettieri, P., Clift, Borello. D., 2015, Distributed Generation by Energy from Waste Technology: A Life Cycle Perspective, in *Process Safety and Environmental Protection*, Elsevier, 93, pp. 161-172, DOI:10.1016/j.psep.2014.03.008.
5. Abd Elhady, S., Borello, D., Tortora, E., 2014, Design of a small scale stand-alone solar thermal co-generation plant for an isolated region in Egypt, in *Energy Conversion and Management*, Elsevier, 88, pp. 872-882
6. Evangelisti, S., Lettieri, P., Borello. D., Clift, R., 2014, Life cycle assessment of energy from waste via anaerobic digestion: A UK case study, *Waste Management*, Elsevier, 34, pp. 226–237 DOI: 10.1016/j.wasman.2013.09.013, Elsevier.
7. Borello, D., Corsini, A., Rispoli, F. and Tortora, E., 2013, 'A co-powered Concentrated Solar Power Rankine cycle concept for small size Combined Heat and Power', *Energies*, 6, 1478-1496; doi:10.3390/en6031478.
8. Borello, D., Corsini, A., Delibra, M. Fiorito., M., and Sheard, A. G., 2013, 'Large-eddy simulation of a tunnel ventilation fan', *Journal of Fluids Engineering – Transaction of ASME*, doi:10.1115/1.4023686.
9. Borello, D., Evangelisti, S., and Tortora, E., 2013, 'Modelling of a CHP SOFC power system fed with biogas from anaerobic digestion of municipal wastes integrated with a solar collector and storage units', *International Journal of Thermodynamics*, 16 (1), pp. 28-35, doi: 10.5541/ijot.45.
10. Di Carlo, A., Borello, D., Bocci, E., 2013, 'Process simulation of a hybrid SOFC/ μ GT and enriched air/steam fluidized bed gasifier power plant', *International Journal of Hydrogen Energy*, 38 (14) pp. 5857 - 5874, doi:10.1016/j.ijhydene.2013.03.005.
11. Bianchi, S., Borello, D., Corsini, A., Rispoli, F., and Sheard, A. G., 2013, 'Large-eddy simulation of the aerodynamic and aero-acoustic performance of a ventilation fan', *Advances in Acoustics and Vibration*, Article ID 876973, doi: 10.1155/2013/876973.
12. Borello, D., Rispoli, F., Venturini, P., and Saavedra G. Z., R., 2013, 'Prediction of multiphase combustion and ash deposition within a biomass furnace', *Applied Energy, Elsevier*, 101, pp. 413-422.
13. Borello, D., Rispoli, F. and Venturini, P., 2012, 'An integrated particle-tracking impact/adhesion model for the prediction of fouling in a subsonic compressor', *Journal of Engineering for Gas Turbines and Power – Transaction of ASME*, Settembre 2012, 134, 092002 (2012)
14. Borello, D., Corsini, A., Delibra, G., Evangelisti, S., and Micangeli, A., 2012, Experimental and computational investigation of a new solar integrated collector storage system, *Applied Energy, Elsevier, Volume 97, September 2012, Pages 982-989*, 10.1016/j.apenergy.2012.01.026
15. Venturini, P., Borello, D., Hanjalic, K. and Rispoli F., 2011, 'Modelling of particles deposition in an environment relevant to biomass-fired boilers', *Applied Thermal Engineering, Elsevier*, 49, pp. 131-138.
16. Borello, D. and Orlandi, P., 2011, DNS scrutiny of the elliptic-relaxation eddy viscosity model in channel flows with a moving wall, *Flow, Turbulence and Combustion*, Springer, 86, pp.295-309

17. Venturini P., Iossa C.V., Borello D., Lentini D. and Rispoli F., “*Modeling of Multiphase Combustion and Deposit Formation in a Biomass Fed Furnace*”, Energy, Elsevier, 2010, 35, 3008-3021
18. Delibra G., Borello D., Hanjalić K. and Rispoli F., 2010, Vortex structures and heat transfer in a wall-bounded pin matrix: LES with a RANS wall-treatment, *Int. Journal for Heat and Fluid Flow (Special Issue from THMT-09)*, Elsevier, vol.31, 5, pp. 740-753
19. Delibra G., Borello D., Hanjalić K. and Rispoli F., 2009, URANS of flow and endwall heat transfer in a pinned passage relevant to gas-turbine blade cooling, *Int. J. Heat Fluid Flow*, Vol. 30, pp. 549-560
20. Borello D., Delibra G., Hanjalić, K. and Rispoli, F., 2009, Large-eddy simulations of tip leakage and secondary flows in an axial compressor cascade using a near-wall turbulence model, *Proc. Institution of Mech. Engineers, Pt A – J. Power and Energy*, Vol. 223 (A6 SI), pp. 645-655
21. Borello D., Hanjalić K., Rispoli F., 2007, Computation of tip-leakage flow in a linear compressor cascade with a second-moment turbulence closure, *Int. J. Heat Fluid Flow*, Vol. 28, pp. 587-601
22. Borello D., Hanjalic K. and Rispoli F., 2005, “*Prediction of turbulence and transition in turbomachinery flows using an innovative second moment closure modelling*”, ASME Journal of Fluids Engineering, 127, pp.1059-1070
23. Borello D., Corsini A. and Rispoli F., 2003, “*A finite element overlapping scheme for turbomachinery flows on parallel platforms*”, Computer and Fluids, Elsevier, Vol. 32, 7, pp. 1017-1047

Articles submitted for publication on peer-reviewed journals

- 1 Calabriso A., Borello D., Santori S.G., Del Zotto L., Cedola L., Assessment of CO2 bubble generation influence on direct methanol fuel cell performance, to be submitted for publication on Applied Energy, Elsevier, SI of ICAE 2015
- 2 Borello D., De Caprariis B., De Filippis P., Di Carlo A., Pantaleo A. M., Thermo-Economic Assessment of a olive pomace Gasifier for Cogeneration Applications, to be submitted for publication on Applied Energy, Elsevier, SI of ICAE 2015

Articles published in edited proceedings of selected papers

1. Hanjalić K., Borello D., Delibra G., Rispoli F., 2015, Hybrid LES/RANS of internal flows: A case for more advanced RANS, *Springer Notes on Numerical Fluid Mechanics and Multidisciplinary Design*, Volume 130, 2015, Pages 19-35
2. Borello D., Delibra G., Hanjalić K. and Rispoli F., 2010, Scrutinizing a seamless hybrid LES/RANS approach for turbomachinery applications, short communication, In 3rd Symp. on Hybrid RANS-LES Methods, Gdansk, Poland, 10-12 June 2007. In H.H. Peng and W. Haase (eds): *Advances in Hybrid RANS-LES Modelling*, Springer Notes on Numerical Fluid Mechanics and Multidisciplinary Design, ISBN 978-3-642-14167-6
3. Borello, D., Delibra, G., Hanjalić, K. and Rispoli, F., 2010, LES and hybrid LES/RANS study of flow and heat transfer in plate fin and tube heat exchanger, In: J. Peinke, M. Oberlack and A. Talamelli (Eds) *Progress in Turbulence III* (Proceedings of the iTi Conference in Turbulence, Bertinoro, Italy 2008), Springer, ISBN 9783642022241
4. Delibra, G., Borello, D., Hanjalić, K. and Rispoli, F., 2010, LES of flow and heat transfer in a channel with a staggered cylindrical pin matrix, In: V. Armenio, B. Geurts and J. Froelich (Eds) *Direct and Large-eddy Simulation VII* (Proc. 7th Int. ERCOFTAC Workshop, Trieste, Sept 9-10, 2008), Springer Science and Media B.V, ISBN 978-90-481-3651-3
5. Borello D., Migliarese Caputi M. e Rispoli F., “A parallel multilevel finite element solver for axial compressors CFD”, Parallel CFD 2002, Kansai Science City, Japan: *Parallel Computational Fluid Dynamics--New Frontiers and Multi-Disciplinary Applications*, K. Matsuno, A. Ecer, J. Periaux, N. Satofuka, (Editors) and P. Fox (Asst. Editor), Elsevier Publishing Co. 2003, May 2002.

Case Reports

1. Jakirlic, S., Kadavelil, G., Sirubalo S., von Terzi, D., Breuer, M. and Borello D., 2010, SIG15 Workshop on Refined Turbulence Modelling, *ERCOFTAC Bulletin*, 85, December 2010, pp. 5-14.
2. Alfieri, A., Borello, D., Delibra, G., Hanjalić, K. and Rispoli, F., 2008, RANS and Hybrid RANS/LES computations of flow in a 3D diffuser, *13th ERCOFTAC SIG 15 Workshop on Refined Turbulence Modelling*, 25-26 Sept., Graz Univ. of Technology, Graz, Austria.
3. Nucara P., Borello D., Delibra G., Rispoli F. and Hanjalic K., Development of non linear elliptic relaxation ζ -f model for the prediction of flow in a 3-D diffuser, In S. Jakirlic, G. Kadavelil, E. Sirubalo and D. Borello (Eds) *Proc. 14th SIG15 ERCOFTAC Workshop on Refined Turbulence Modelling*, 18 September 2009, Roma, Italy.

Articles published in refereed conference proceedings

1. Borello D., Anielli D., Rispoli F., Salvagni A., Venturini P., Unsteady CFD analysis of erosion mechanism in the coolant channels of a rotating gas turbine blade, ASME TurboExpo 2015, 15-19 June 2015, Montreal, Canada
2. Salvagni A., Borello D., Properzi E., Rispoli F., URANS Study of Flow and Heat Transfer in a Rotating Rib-Roughened Internal Cooling Channel, ASME ATI UIT 2015, May 17-20, 2015, Naples, Italy
3. Calabriso A., Borello D., Romano G.P., μ -PIV investigation of the two-phase flow in the anode channels of a Direct Methanol Fuel Cell, ASME ATI UIT 2015, May 17-20, 2015, Naples, Italy
4. Borello D., De Caprariis B., De Filippis P., Di Carlo A., Marchegiani A., Pantaleo A. M., Shah N. and Venturini P., Thermo-Economic Assessment of a olive pomace Gasifier for Cogeneration Applications, ICAE 2015, 28-31 March 2015, Abu Dabhi
5. Calabriso A., Borello D., Santori S.G., Del Zotto L., Cedola L., Assessment of CO₂ bubble generation influence on direct methanol fuel cell performance, ICAE 2015, 28-31 March 2015, Abu Dabhi
6. Abd Elhady S., Borello, D., Economic feasibility of small wind turbines for domestic consumer in Egypt based on the new Feed-in Tariff, ICAE 2015, 28-31 March 2015, Abu Dabhi
7. Anielli D., Borello D., Rispoli F., Salvagni A., Venturini P., Prediction of particle erosion in the internal cooling channels of a turbine blade, ETC 2015, 23-26 March 2015, Madrid, Spain
8. Borello, D., Rispoli, F., Salvagni, A., Hanjalic, K., 2014, 'Effects of Rotation on Flow in a Rib-roughened Channel: LES Study', ETMM10, Marbella, Spain 17-19 September, selected for publication on International Journal of Heat and Mass Transfer, Elsevier
9. Borello, D., D'Angeli, L., Rispoli, F., Salvagni, A., Venturini, P., 2014, 'Unsteady study of particles deposition in gas turbine blades with film cooling', ASME Turboexpo2014, Dusseldorf, Germany
10. Borello, D., Capobianchi, P., De Petris, M., Rispoli, F., Venturini, P., 2014, Unsteady CFD analysis of heat and mass transfer and particles deposition in the coolant channels of a gas turbine blade using a non-linear RANS model, ASME Turboexpo2014, Dusseldorf, Germany
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