Marco Marengo
School of Computing, Engineering & Maths
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Employment

Professor of Thermal Engineering
School of Computing, Engineering & Maths
University of Brighton
1 Jan 2014 → present

Centre for Regenerative Medicine and Devices
University of Brighton
1 Oct 2017 → present

Advanced Engineering Centre
University of Brighton
1 Jan 2015 → present

Member of the Space Environment Advisory Committee
UK Space Agency
1 Jun 2018 → present

Visiting Professor
University of Toronto
Canada
15 Jun 2017 → 14 Aug 2017

Visiting Professor
York University Toronto
Canada
15 Jun 2017 → 14 Aug 2017

Senior Research Fellow
Polytechnic Institute of Lisbon
Portugal
1 Oct 2016 → present

Member of the Space Environment Working Group
UK Space Agency
1 Dec 2015 → 31 May 2018

Visiting Professor
Universite de Mons
Belgium
1 Oct 2005 → 30 Jun 2019

Research interests

My research is devoted to the science of thermodynamics, fluid mechanics, heat and mass transfer for ground and space applications. The research activities have a large spectrum of applications, from energy to combustion, from electronic cooling to ice-mitigation techniques, including phase transition phenomena like in pool and flow boiling, icing, evaporation and condensation.
The research can be divided in five main branches
1 Physics of drop, sprays and liquid interfaces,
2 Phase change phenomena,
3 Heat pipes and passive thermal systems
4 DNS/VOF simulations of two-phase flows
5 Dynamic energy simulations of buildings
Particularly important are the works on drop-wall interaction, for which I have (I hope) an international reputation with more than two thousands citations.
In the last years, following a long industrial engagement in designing thermal systems, heat pipes (loop heat pipes and sintered heat pipes), I carried out a series of experiments on a specific passive two-phase thermal control system, called Pulsating Heat Pipe, which was characterized both on ground, in hypergravity and microgravity environments, such as during parabolic flights. I am currently leading an International Scientific Team of more than 10 Universities worldwide aiming at measuring the thermal performance of a Pulsating Heat Pipe on the International Space Station (ISS). The experiment is at the moment one of the three experiments in Europe selected for the new Thermal Platform on the EDR modulus of the ISS.
Finally, noteworthy is the fact that all the activities have been studied numerically and experimentally, trying to conjugate the experimental data with the detailed insights coming from numerical methods.
I am particularly interested in cogeneration systems and the exploitation of Energy+ energy simulations of commercial and residential buildings.

SPECIAL AWARDS, HONOURS AND DISTINCTIONS

10.05.2018 – present Editor-in-Chief of the Section ‘Thermal Management” of the MDPI Journal Energies (IF = 2.676)
01.10.2016 - present Permanent UK scientific representative in the International Heat Pipe Conference Committee
01.10.2013 - present Scientific Coordinator of the International Pulsating Heat Pipe Scientific Team for the Thermal Platform on the International Space Station, European Space Agency, The Netherlands
01.01.2009 - 31.12.2018 Editor-in-Chief (Europe) of the International Journal “Atomization and Sprays”, Begell House Inc., Danbury, Connecticut, U.S.A
19.06.2004 - present 5 Invited Plenary Lectures in recognised International Conferences (see below)
01.03.2016 - 30.09.2017 Guest Editor of “Energies” Journal, Advanced Thermal Simulation of Energy Systems, MDPI (IF = 2.676)

Research Awards

WHISKIES: Wound Healing In Space: Key challenges towards Intelligent and Enabling Sensing platforms
Marengo, M.
European Space Agency: £12,000.00
15/05/20 → 14/05/23

Projects

Enhanced Condensers for Microgravity (ENCOM 3)
Marengo, M., Georgoulas, A. & Miche, N.
European Space Agency
1/02/16 → 31/01/19

HyHP: Novel Hybrid Heat Pipe for Space and Ground Applications
Marengo, M., Georgoulas, A. & Miche, N.
EPSRC
1/04/17 → 31/03/20

TOPDESS:: Two-phase passive thermal devices for deployable space systems
Marengo, M., Georgoulas, A. & Miche, N.
European Space Agency
1/10/19 → 30/09/22

RESEARCH AND ENTERPRISE

My research has been mainly dedicated to the field of thermofluids, both with experimental and modelling activities. The main topics are the physics of droplet and sprays, microfluidics, boiling and two-phase systems, surface wettability and,

more recently, passive heat transfer devices, such as heat pipes. I perform at international level (as shown below by Journal Publications, Editorial roles, Chair of International Conferences, member of editorial boards, organiser of workshops and conferences, reviewers for important journals, expert for European and UK funding institutions) for all of the topics I worked on in my career. Every time I initiated a new subject, I planned an ambitious strategy in terms of novelty, impact and deliverables. Most of my research is carried out within International collaborations. I have published 285 papers in total, among which more than 70 are in International peer-reviewed Journal Papers (from 2010 I published an average of 20.9 papers/yr with 7.8 papers/yr in International Journals). I have written 6 Chapters in books and I have 5 International patents. Working in the sector of space applications, I took the opportunity to coordinate experimental tests in microgravity flight campaigns with the European Space Agency, which led to the selection of my experiment on Pulsating Heat Pipes as one of the three European experiments in physical sciences on the International Space Station in 2021. My research has been recognised with covers in Journals, such as Physics of Fluids and Langmuir, and with more than 30 invited lectures around the world, among which 5 were as plenary lectures in recognised International Conferences.

Research outputs (from 2014)

Effect of Channel Aspect Ratio on Flow Boiling Characteristics within Rectangular Micro-passages
Andredaki, M., Vontas, K., Georgoulas, A., Miche, N. & Marengo, M., 14 Oct 2020, *Proceedings of the World Congress on Momentum, Heat and Mass Transfer (MHMT'20).* (Proceedings of the World Congress on Momentum, Heat and Mass Transfer).

Wettability Effect On Flow Boiling Characteristics Within Micro- passages
Vontas, K., Andredaki, M., Georgoulas, A., Miche, N. & Marengo, M., 14 Oct 2020, *Proceedings of the World Congress on Momentum, Heat and Mass Transfer.* (Proceedings of the World Congress on Momentum, Heat and Mass Transfer).

Accelerating Taylor bubbles within circular capillary channels: Break-up mechanisms and regimes
Andredaki, M., Georgoulas, A., Miche, N. & Marengo, M., 9 Oct 2020, In : International Journal of Multiphase Flow. 134, 103488.

Numerical Investigation of Quasi-sessile Droplet Absorption into Wound Dressing Capillaries
Andredaki, M., Georgoulas, A. & Marengo, M., 22 Sep 2020, In : Physics of Fluids. 32, 9, 092112.

A Novel Loop Heat Pipe Based Cooling System for Battery Packs in Electric Vehicles
Bernagozzi, M., Georgoulas, A., Miche, N., Rouaud, C. & Marengo, M., 7 Aug 2020, *2020 IEEE Transportation Electrification Conference & Expo (ITEC).* IEEE

How Wettability Controls Nanoprinting
Fernández-Toledano, J. C., Braeckeveldt, B., Marengo, M. & De Coninck, J., 5 Jun 2020, In : Physical Review Letters. 124, 22, 1 p., 224503.

Unraveling low nucleation temperatures in pool boiling through fluctuating hydrodynamics simulations
Magaletti, F., Georgoulas, A. & Marengo, M., 30 May 2020, In : International Journal of Multiphase Flow. 130, 103356.

Droplet Impact on Suspended Metallic Meshes: Effects of Wettability, Reynolds and Weber Numbers
Vontas, K., Boscariol, C., Andredaki, M., Georgoulas, A., Crua, C., Walther, J. H. & Marengo, M., 22 May 2020, In : Fluids. 5, 2, 81.

Heat transport capacity of an axial-rotating single- loop oscillating heat pipe for abrasive-milling tools
Qian, N., Fu, Y., Marengo, M., Xu, J., Chen, J. & Jiang, F., 30 Apr 2020, In : Energies. 13, 9, 2145.

A fast response performance simulation screening tool in support of early stage building design
Picco, M. & Marengo, M., 6 Apr 2020, *Proceedings of Building Simulation 2019: 16th Conference of IBPSA.* International Building Performance Association, p. 1296-1303 (Proceedings of the International Building Performance Simulation Association).

Flow Characterization of a Pulsating Heat Pipe through the Wavelet Analysis of Pressure Signals
Perna, R., Abela, M., Mameli, M., Mariotti, A., Pietrasanta, L., Marengo, M. & Filippeschi, S., 27 Feb 2020, In : Applied Thermal Engineering. 171, 115128.

A novel ultra-large flat plate heat pipe manufactured by thermal spray
Feng, C., Gibbons, M. J., Marengo, M. & Chandra, S., 5 Feb 2020, In : Applied Thermal Engineering. 171, 115030.

Start-up timing behavior of single-loop oscillating heat pipes based on the second-order dynamic model
Qian, N., Fu, Y., Marengo, M., Chen, J. & Xu, J., 12 Nov 2019, In : International Journal of Heat and Mass Transfer. 147, 118994.

Engineered composite polymer sheets with enhanced thermal conductivity
Der, O., Edwardson, S., Marengo, M. & Bertola, V., 4 Nov 2019, *5th International Conference on Competitive Materials and Technology Processes, IC-CMTP 2018.* IOP, 012008. (IOP Conference Series: Materials Science and Engineering; vol. 613, no. 1).

Developing flow pattern maps for accelerated two-phase capillary flows
Pietrasanta, L., Mameli, M., Mangini, D., Georgoulas, A., Miche, N., Filippeschi, S. & Marengo, M., 1 Nov 2019, In : Experimental Thermal and Fluid Science. 112, 13 p., 109981.

Development of flow pattern maps for thermally-induced accelerated two-phase flow in pulsating heat pipes
Pietrasanta, L., Marengo, M., Miche, N., Georgoulas, A., Mameli, M. & Mangini, D., 25 Sep 2019.

Critical review and ranking of novel solutions for thermal management in electric vehicles
Bernagozzi, M., Georgoulas, A., Miche, N., Rouaud, C. & Marengo, M., 8 Sep 2019. 3 p.

A Comparative Study of the Spray Characteristics of Nanofluids and Spray Cooling Performance
Tokkan, O., Marengo, M., Begg, S. & Emekwuru, N., 2 Sep 2019.

Experimental Analysis of the Fluid Flow in the Flat Plate Pulsating Heat Pipe Under Microgravity Conditions
Slobodeniuk, M., Ayel, V., Bertossi, R., Romestant, C., Miche, N., Bertin, Y. & Marengo, M., Sep 2019.

Drop impact onto semi-infinite solid surfaces with different wettabilities
Chen, H., Marengo, M. & Amirfazli, A., 16 Aug 2019, In : Physical Review Fluids. 4, 8, 083601.

Numerical investigation of liquid film instabilities and evaporation in confined oscillating slug-plug flows
Andredaki, M., Georgoulas, A., Miche, N. & Marengo, M., 23 Jul 2019, *Computational and Experimental Methods in Multiphase and Complex Flow X.* Hernández, S. & Vorobieff, P. (eds.). Vol. 123. p. 127-138 12 p. (WIT Transactions on Engineering Sciences; vol. 123).

Thermal Performance of Pulsating Heat Stripes Built With Plastic Materials
Der, O., Marengo, M. & Bertola, V., 22 Jul 2019, In : Journal of Heat Transfer. 141, 9, 091808.

Towards a durable polymeric internal coating for diabatic sections in wickless heat pipes
Villa, F., Marengo, M. & De Coninck, J., 22 Jul 2019, In : Journal of Heat Transfer. 141, 9, 091802.

Experimental study of thermal performance in a closed loop pulsating heat pipe with alternating superhydrophobic channels
Betancur, L., Mangini, D., Mantelli, M. & Marengo, M., 25 May 2019, In : Thermal Science and Engineering Progress. 17, 100360.

Thermo-Hydraulic Analysis of Semi-Transparent Flat Plate Pulsating Heat Pipes Tested in 1 g and Microgravity Conditions
Ayel, V., Pietrasanta, L., Lalizel, G., Romestant, C., Bertin, Y. & Marengo, M., 25 May 2019, In : Microgravity Science and Technology. 31, 4, p. 403-415 13 p.

Numerical Investigation of Droplet Impact on Metallic Meshes
Vontas, K., Boscariol, C., Andredaki, M., Georgoulas, A., Walther, J. H. & Marengo, M., 24 May 2019.

Inverse heat transfer analysis of a Pulsating Heat Pipe for space applications tested on board a parabolic flight
Zamparini, L., Mangini, D., Cattani, L., Mameli, M., Miche, N., Bozzoli, F., Filippeschi, S. & Marengo, M., 19 May 2019.

Time-Frequency Analysis of a Thermally Induced Pulsating Slug Flow
Perna, R., Mameli, M., Pietrasanta, L., Marengo, M. & Filippeschi, S., 19 May 2019.

Start-up in microgravity and local thermodynamic states of a hybrid loop thermosyphon/pulsating heat pipe
Mameli, M., Catarsi, A., Mangini, D., Pietrasanta, L., Michè, N., Marengo, M., Di Marco, P. & Filippeschi, S., 13 May 2019, In : Applied Thermal Engineering. 158, 113771.

Towards the Development of Flow Pattern Maps for Thermally-Induced Pulsating Two-Phase Flows
Pietrasanta, L., Mameli, M., Georgoulas, A., Miche, N., Filippeschi, S. & Marengo, M., May 2019.

Spreading of low-viscous liquids on a stationary and a moving surface
Buksh, S., Almohammadi, H., Marengo, M. & Amirfazli, A., 5 Apr 2019, In : Experiments in Fluids. 60, 4, 76.

An original look into pulsating heat pipes: Inverse heat conduction approach for assessing the thermal behaviour
Cattani, L., Mangini, D., Bozzoli, F., Pietrasanta, L., Miche, N., Mameli, M., Filippeschi, S., Rainieri, S. & Marengo, M., 26 Feb 2019, In : Thermal Science and Engineering Progress. 10, p. 317-326 10 p.

Start-Up and Operation of a 3D Hybrid Pulsating Heat Pipe on Board a Sounding Rocket
Mameli, M., Piacquadio, S., Viglione, A. S., Catarsi, A., Bartoli, C., Marengo, M., Di Marco, P. & Filippeschi, S., 19 Feb 2019, In : Microgravity Science and Technology. 31, 3, p. 249-259 11 p.

A study of the effect of nanoparticle concentration on the characteristics of nanofluid sprays
Kang, B., Marengo, M. & Begg, S., 1 Jan 2019, In : Journal of Applied Fluid Mechanics. 12, 2, p. 413-420 8 p.

Drop impact onto a cantilever beam: behavior of the lamella and force measurement
Chen, H., Zhang, X., Garcia, B. D., Georgoulas, A., Deflorin, M., Liu, Q., Marengo, M., Xu, Z. & Amirfazli, A., 2019, In : Interfacial Phenomena and Heat Transfer. 7, 1, p. 85-96 12 p.

Numerical Simulation of Droplet Breakup when Impacting a Narrow Gap
Andredaki, M., Bouchard, D. J., Georgoulas, A., Chandra, S. & Marengo, M., 2019.

Wavelet Analysis of the Pressure Signal in a Pulsating Heat Pipe
Perna, R., Mameli, M., Mariotti, A., Pietrasanta, L., Marengo, M. & Filippeschi, S., 2019.

A single loop pulsating heat pipe in varying gravity conditions: Experimental results and numerical simulations
Pietrasanta, L., Mangini, D., Fioriti, D., Miche, N., Andredaki, M., Georgoulas, A., Araneo, L. & Marengo, M., 31 Dec 2018, *International Heat Transfer Conference 16.* Begell House, Vol. 18. p. 4877-4884 8 p. IHTC16-23891. (International Heat Transfer Conference 16).

Computational study on break-up mechanisms of isolated vapour slugs during saturated flow boiling conditions
Andredaki, M., Georgoulas, A., Mangini, D., Araneo, L., Pietrasanta, L., Miche, N. & Marengo, M., 31 Dec 2018, *Proceedings of the International Heat Transfer Conference 16.* Begell House, Vol. 18. p. 6361-6368 IHTC16-23952. (International Heat Transfer Conference 16).

Enhanced VOF- based direct numerical simulations of slug flow boiling within micro-channels with smooth and finned heated walls
Teodori, E., Andredaki, M., Georgoulas, A., Moita, A., Moreira, A. & Marengo, M., 31 Dec 2018, *Proceedings of the International Heat Transfer Conference 16.* Begell House, Vol. 18. p. 6503-6510 IHTC16-23596. (International Heat Transfer Conference 16).

A review of liquid droplet impacting onto solid spherical particles: A physical pathway to encapsulation mechanisms
Khojasteh, D., Kazerooni, N. M. & Marengo, M., 23 Nov 2018, In : Journal of Industrial and Engineering Chemistry. 71, p. 50-64

Drop impact onto attached metallic meshes: liquid penetration and spreading
Boscariol, C., Chandra, S., Sarker, D., Crua, C. & Marengo, M., 20 Nov 2018, In : Experiments in Fluids. 59, 12, 189.

Drop impact onto suspended and surface-attached metallic meshes: liquid penetration and spreading
Boscariol, C., Sarker, D., Chandra, S., Crua, C. & Marengo, M., 26 Jul 2018, p. 0-0. 1 p.

Pulsating Heat Pipes: Basics of Functioning and Modeling
Nikolayev, V. S. & Marengo, M., Jul 2018, *Encyclopedia of Two-Phase Heat Transfer and Flow IV: Modeling Methodologies, Boiling of CO_2, and Micro-Two-Phase Cooling.* Thome, J. R. (ed.). World Scientific Publishing Company, Vol. 1: Modeling of Two-Phase Flows and Heat Transfer. p. 63–139

Pulsating heat pipes: experimental analysis, design and applications
Marengo, M. & Nikolayev, V. S., Jul 2018, *Encyclopedia of Two-Phase Heat Transfer and Flow IV: Modeling Methodologies, Boiling of CO_2, and Micro-Two-Phase Cooling.* Thome, J. R. (ed.). Singapore: World Scientific Publishing Company, Vol. 1: Modeling of Two-Phase Flows and Heat Transfer. p. 1-62

Lumped parameter network simulation of a Loop Heat Pipe for energy management systems in full electric vehicles
Bernagozzi, M., Charmer, S., Georgoulas, A., Malavasi, I., Michè, N. & Marengo, M., 5 Jun 2018, In : Applied Thermal Engineering. 141, p. 617-629 13 p.

Pulsating heat pipes: basics of functioning and numerical modelling
Nikolayev, V. S. & Marengo, M., 1 Jun 2018, *Encyclopedia of Two-Phase Heat Transfer and Flows III.* Thome, J. R. (ed.). Singapore: World Scientific Publishing Company, Vol. 4.

A new model to predict the influence of surface temperature on contact angle
Villa, F., Marengo, M. & Coninck, J. D., 25 Apr 2018, In : Scientific Reports. 8, 6549 (2018) .

Infrared analysis of the two phase flow in a single closed loop pulsating heat pipe
Mangini, D., Marengo, M., Araneo, L., Mameli, M., Fioriti, D. & Filippeschi, S., 24 Apr 2018, In : Experimental Thermal and Fluid Science.

Maximum Spreading and Rebound of a Droplet Impacting onto a Spherical Surface at low Weber numbers
Bordbar, A., Taassob, A., Khojasteh, D., Marengo, M. & Kamali, R., 10 Apr 2018, In : Langmuir. 34, 17, p. 5149–5158

A low cost, flexible pulsating heat pipe technology
Der, O., Marengo, M. & Bertola, V., 31 Mar 2018, *Proceedings of the 3rd Thermal and Fluid Engineering Summer Conference, TFESC 2018.* Begell House, Inc., p. 321-327 7 p. (Proceedings of the Thermal and Fluids Engineering Summer Conference; vol. 2018-March).

Experimental analysis of a Flat Plate Pulsating Heat Pipe with Self-ReWetting Fluids during a parabolic flight campaign
Cecere, A., De Cristofaro, D., Savino, R., Ayel, V., Solé-Agostinelli, T., Marengo, M., Romestant, C. & Bertin, Y., 27 Mar 2018, In : Acta Astronautica. 147, p. 454-461

Numerical Investigation of isolated bubble growth and detachment in cases of pool boiling with different wettability characteristics: Implementation of a dynamic contact angle treatment in OpenFOAM
Andredaki, M., Villa, F., Georgoulas, A., De Coninck, J. & Marengo, M., 15 Mar 2018, p. 1-2. 2 p.

Wettability effect on pool boiling: a review
Malavasi, I., Teodori, E., Moita, A. S., Moreira, A. L. N. & Marengo, M., 1 Mar 2018, *Encyclopedia of Two-Phase Heat Transfer and Flows III.* Thome, J. R. (ed.). Singapore: World Scientific Publishing Company, Vol. 3.

Visualization of Flow Patterns in Closed Loop Flat Plate Pulsating Heat Pipe Acting as Hybrid Thermosyphons under Various Gravity Levels
Ayel, V., Araneo, L., Marzorati, P., Romestant, C., Bertin, Y. & Marengo, M., 8 Feb 2018, In : Heat Transfer Engineering. 40, 3-4, p. 227-237 10 p.

Simulation of micro-flow dynamics at low capillary numbers using adaptive interface compression
Aboukhedr, M., Georgoulas, A., Marengo, M., Gavaises, M. & Vogiatzaki, K., 16 Jan 2018, In : Computers & Fluids. 165, p. 13-32

Effect of Flow Oscillations on the Liquid Film Evaporation and Instability Formation for Elongated Vapour Slugs within Heated Microchannels
Andredaki, M., Georgoulas, A., Miche, N. & Marengo, M., 2018.

Experimental Study of Start-up in a Closed Loop Pulsating Heat Pipe with Alternating Superhydrophobic Channels
Betancur, L. A., Mangini, D., Facin, A., Mantelli, M., Paiva, K. & Marengo, M., 2018.

Infrared analysis and pressure measurements on a single loop pulsating heat pipe at different gravity levels
Mangini, D., Pozzoni, M., Mameli, M., Pietrasanta, L., Bernagozzi, M., Fioriti, D., Miche, N., Araneo, L., Marengo, M. & Filippeschi, S., 2018.

Large Diameter Pulsating Heat Pipe for Future Experiments on the International Space Station: Ground and Microgravity Thermal Response
Mameli, M., Catarsi, A., Mangini, D., Pietrasanta, L., Fioriti, D., La Foresta, M., Caporale, L., Marengo, M., Di Marco, P. & Filippeschi, S., 2018.

L'impatto della Building Automation nelle nuove costruzioni residenziali NZEB
Fusco, D., Picco, M., Chiaroni, D. & Marengo, M., 2018.

L'impatto della digitalizzazione nelle nuove costruzioni residenziali NZEB
Fusco, D., Picco, M., Chiaroni, D. & Marengo, M., 2018, *Rapporto Annuale sull'Efficienza Energetica 2018.* p. 101

Numerical investigation of oscillating vapour slugs within heated microchannels in saturated flow boiling conditions
Andredaki, M., Georgoulas, A., Miche, N., Teodori, E., Moita, A., Moreira, A. & Marengo, M., 2018.

Is drop impact the same for both moving and inclined surfaces?
Buksh, S., Marengo, M. & Amirfazli, A., 21 Nov 2017, p. 0-0. 1 p.

A benchmark study for the crown-type splashing dynamics of two-component droplet-wall film interactions
Geppert, A., Terzis, A., Lamanna, G., Marengo, M. & Weigand, B., 16 Nov 2017, In : Experiments in Fluids. 58

Flat Plate Pulsating Heat Pipe with Self-Rewetting Fluid In Parabolic Flight Conditions
Cecere, A., De Cristofaro, D., Savino, R., Marengo, M., Solé-Agostinelli, T., Ayel, V., Romestant, C. & Bertin, Y., 29 Sep 2017, *68th International Astronautical Congress (IAC).* Adelaide, Australia: IAC, p. 0-0 1 p.

Thermo-hydraulic characterization of semi-transparent Flat-Plate Pulsating Heat Pipes in variable gravity regimes
Solé-Agostinelli, T., Ayel, V., Vigoureux, F., Romestant, C., Bertin, Y. & Marengo, M., 15 Sep 2017, p. 65-66. 2 p.

Simulation of droplet spreading on micro-CT reconstructed 3D real porous media using the volume-of-fluid method
Aboukhedr, M., Mitroglou, N., Georgoulas, A., Marengo, M. & Vogiatzaki, K., 10 Sep 2017, *Proceedings 28th European Conference on Liquid Atomization and Spray Systems (ILASS) 2017.* Valencia, Spain: ILASS, p. 1-8 8 p.

Drop Impact onto a Metallic Porous Layer: Effect of Liquid Viscosity and Air Entrapment
Boscariol, C., Sarker, D., Kang, B., Crua, C. & Marengo, M., 8 Sep 2017, *ILASS–Europe 2017, 28th Conference on Liquid Atomization and Spray Systems.* Valencia, Spain: Universitat Politècnica de València, p. 0-0 1 p.

Experimental and Numerical Study on Sensible Heat Transfer at Droplet/Wall Interactions
Teodori, E., Pontes, P., Moita, A. S., Moreira, A. L. N., Georgoulas, A. & Marengo, M., 6 Sep 2017, *ILASS–Europe 2017, 28th Conference on Liquid Atomization and Spray Systems.* Valencia, Spain: ILASS, p. 304-311 8 p.

Numerical Investigation of Droplet Impact on Smooth Surfaces with Different Wettability Characteristics: Implementation of a dynamic contact angle treatment in OpenFOAM
Vontas, K., Andredaki, M., Georgoulas, A., Nikas, K-S. & Marengo, M., 6 Sep 2017, *ILASS–Europe 2017, 28th Conference on Liquid Atomization and Spray Systems.* Valencia, Spain: ILLAS, p. 58-65 8 p.

A novel lumped parameter model for Loop Heat Pipes – validation and parametric analysis
Georgoulas, A., Bernagozzi, M., Malavasi, I., Miche, N. & Marengo, M., 4 Sep 2017, p. 0-0. 1 p.

A novel lumped parameter model for Loop Heat Pipes – validation and parametric analysis
Bernagozzi, M., Georgoulas, A., Malavasi, I., Miche, N. & Marengo, M., 4 Sep 2017, *15th UK Heat Transfer Conference 2017.* p. 0-0 1 p.

Break-up Mechanisms and Conditions for Vapour Slugs Within Mini-Channels
Andredaki, M., Georgoulas, A., Miche, N. & Marengo, M., 4 Sep 2017, p. 0-0. 1 p.

Curvature effect on droplet impacting onto hydrophobic and superhydrophobic spheres
Khojasteh, D., Bordbar, A., Kamali, R. & Marengo, M., 7 Jul 2017, In : International Journal of Computational Fluid Dynamics. p. 310-323 14 p.

Characterization of a Space Pulsating Heat Pipe on board REXUS 22 Sounding Rocket
Nannipieri, P., Anichini, M., Barsocchi, L., Becatti, G., Buoni, L., Celi, F., Catarsi, A., Di Giorgio, P., Fattibene, P. & Marengo, M., 28 Jun 2017, *35th UIT Heat Transfer Conference (UIT2017).* Ancona, Italy, p. 0-0 1 p.

Fluid-flow pressure measurements and thermo-fluid characterization of a single loop two-phase passive heat transfer device
Ioana Ilinca, A., Mangini, D., Mameli, M., Fioriti, D., Filippeschi, S., Araneo, L., Roth, N. & Marengo, M., 28 Jun 2017, *35th UIT Heat Transfer Conference (UIT2017).* Ancona, Italy, Vol. 923. p. 0-0 1 p. (Journal of Physics: Conference Series).

Experimental Study of a Sodium Two-Phase Thermosyphon
Mantelli, M. B. H., Uhlmann, T. W., Cisterna, L. H. R., Marengo, M. & Eskilsson, P., 15 Jun 2017, *9th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics.* Iguazu Falls, Brazil, p. 0-0 1 p.

Fluid flow infrared analysis and pressure drop measurements in a single loop pulsating heat pipe
Mangini, D., Ioana Ilinca, A., Mameli, M., Fioriti, D., Filippeschi, S., Araneo, L. & Marengo, M., 15 Jun 2017, *9th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics.* Iguazu Falls, Brazil, p. 0-0 1 p.

Upgraded Pulsating Heat Pipe Only For Space (U-PHOS): results of the 22nd Rexus Sounding Rocket Campaign
Nannipieri, P., Anichini, M., Barsocchi, L., Becatti, G., Buoni, L., Celi, F., Catarsi, A., Di Giorgio, P., Fattibene, P. & Marengo, M., 15 Jun 2017, *9th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics.* Iguazu Falls, Brazil, p. 0-0 1 p.

Sensible Heat Transfer during Droplet Cooling: Experimental and Numerical Analysis
Teodori, E., Marengo, M., Moita, A. S., Georgoulas, A., Pontes, P. & Moreira, A. L. N., 9 Jun 2017, In : Energies. 10, 6

Etude d'un caloduc oscillant plat testé avec un fluide remouillant sous champ de gravité variable
Solé-Agostinelli, T., Ayel, V., Cecere, A., Jaulin, F., Romestant, C., Bertin, Y., Savino, R. & Marengo, M., 2 Jun 2017, *25th French Thermal Congress.* Marseille, p. 0-0 1 p.

Numerical Investigation of Break-up Mechanisms and Conditions for Vapour Slugs within Mini-Channels
Andredaki, M., Georgoulas, A. & Marengo, M., 17 May 2017, p. 0-0. 1 p.

The U-PHOS experience within the ESA student REXUS/BEXUS programme: a real space hands-on opportunity
Nannipieri, P., Anichini, M., Barsocchi, L., Becatti, G., Buoni, L., Catarsi, A., Celi, F., Di Giorgio, P., Fattibene, P. & Marengo, M., 28 Apr 2017, *2017 IEEE Global Engineering Education Conference (EDUCON).* Athens: IEEE, p. 0-0 1 p.

U-PHOS Project: Development of a Large Diameter Pulsating Heat Pipe Experiment on board REXUS 22
Nannipieri, P., Anichini, M., Barsocchi, L., Becatti, G., Buoni, L., Celi, F., Catarsi, A., Di Giorgio, P., Fattibene, P. & Marengo, M., 9 Mar 2017, In : Journal of Physics: Conference Series. 796, 1

An Enhanced VOF Method Coupled with Heat Transfer and Phase Change to Characterise Bubble Detachment in Saturated Pool Boiling
Georgoulas, A., Andredaki, M. & Marengo, M., 24 Feb 2017, In : Energies. 10, 3, p. 1-35 35 p.

Introduction of a new dynamic simulation screening tool to support early-stage building design
Picco, M., Ghisalberti, G., Graziano, G. F. & Marengo, M., 10 Feb 2017, *Building Simulation Applications, BSA 2017 - 3rd IBPSA-Italy Conference.* Bozen-Bolzano: Free University of Bozen Bolzano, Vol. 2017-February. p. 241-248 8 p. (Building Simulation Applications BSA).

Hybrid Pulsating Heat Pipe for Space Applications with Non-Uniform Heating Patterns: Ground and Microgravity Experiments
Mangini, D., Mameli, M., Fioriti, D., Filippeschi, S., Araneo, L. & Marengo, M., 12 Jan 2017, In : Applied Thermal Engineering. 126, p. 1029-1043 15 p.

Flat plate pulsating heat pipe with self-rewetting fluids in parabolic flight condition
Cecere, A., De Cristofaro, D., Savino, R., Marengo, M., Sole-Agostinelli, T., Ayel, V., Romestant, C. & Bertin, Y., 1 Jan 2017, *68th International Astronautical Congress, IAC 2017: Unlocking Imagination, Fostering Innovation and Strengthening Security.* International Astronautical Federation, IAF, Vol. 4. p. 2272-2281 10 p. (Proceedings of the International Astronautical Congress).

Effect of the Condenser Temperature on the Start-up of a Pulsating Heat Pipe
Betancur, L. A., Mangini, D., Mameli, M., Filippeschi, S., Slongo, L. K., Paiva, K. V., Mantelli, M. & Marengo, M., 2017, In : Heat Pipe Science and Technology, An International Journal. 8, 1, p. 13-25 13 p.

Effect of extreme wetting scenarios on pool boiling conditions in a quiescent medium
Teodori, E., Valente, P., Malavasi, I., Moita, A. S., Marengo, M. & Moreira, A. L. N., 11 Nov 2016, In : Applied Thermal Engineering. 115, p. 1424-1437 14 p.

Hybrid Stirling Systems: Development of a Solar/Combustion Thermosyphon Receiver
Mantelli, M. B. H., Uhlmann, T. W., Lindh, J., Eskilson, P., Nilsson, M., Manzoni, M. & Marengo, M., 14 Oct 2016, p. 0-0. 1 p.

Effect of the Ambient Temperature on the Start-Up of a Multi-Evaporator Loop Thermosyphon
Araneo, L., Mangini, D., Mameli, M., Filippeschi, S., Valenti, G. & Marengo, M., 29 Sep 2016, p. 0-0. 1 p.

Fast response building energy simulation in support to low carbon design and retrofit
Picco, M. & Marengo, M., 9 Sep 2016, p. 53-60. 8 p.

Dripping and jetting from pipe wall leakages in cross flow fouling
Applin, N., Miche, N., Mason, D. & Marengo, M., 7 Sep 2016, p. 65-66. 2 p.

Drop impact onto a metallic porous layer: scale effects
Boscariol, C., Sarker, D., Crua, C. & Marengo, M., 7 Sep 2016, *ILASS – Europe 2016, 27th Annual Conference on Liquid Atomization and Spray Systems.* Brighton, UK, p. 0-0 1 p.

Drop impact onto porous surface: scale effects
Boscariol, C., Sarker, D., Crua, C. & Marengo, M., 7 Sep 2016, p. 229-230. 2 p.

Equilibrium contact angle at boiling condition
Villa, F., Marengo, M. & De Coninck, J., 7 Sep 2016, p. 257-258. 2 p.

Impact of hexadecane and water droplets on non-wetting surfaces
Malavasi, I., Veronesi, F., Zani, M., Raimondo, M. & Marengo, M., 7 Sep 2016, p. 87-88. 2 p.

Numerical investigation of droplet spreading on porous and non-porous surfaces
Aboukhedr, M., Gavaises, M., Georgoulas, A., Marengo, M. & Vogiatzaki, K., 7 Sep 2016, p. 261-262. 2 p.

Two component droplet wall-film interactions: impact dynamics on very thin films
Geppert, A., Terzis, A., Lamanna, G., Marengo, M. & Weigand, B., 7 Sep 2016, p. 225-226. 2 p.

Advanced multi-evaporator loop thermosyphon
Mameli, M., Mangini, D., Vanoli, G. F. T., Araneo, L., Filippeschi, S. & Marengo, M., 5 Aug 2016, In : Energy. 112, p. 562-573 12 p.

U-PHOS Project: Development of a Large Diameter Pulsating Heat Pipe Experiment on board REXUS 22
Nannipieri, P., Anichini, M., Barsocchi, L., Becatti, G., Buoni, L., Celi, F., Catarsi, A., Di Giorgio, P., Fattibene, P. & Marengo, M., 6 Jul 2016, *34th UIT Conference.* Ferrara, Italy, p. 0-0 1 p.

Impact of occupancy on energy consumption by an educational facility
Amore, M., Rossoni, M., Marengo, M. & de Wilde, P., 1 Jul 2016, *Conference Proceedings 23rd International Workshop of the European Group for Intelligent Computing in Engineering.* Kraków, Poland, p. 0-0 1 p.

Condenser Temperature Effect on the Transient Behavior of a Pulsating Heat Pipe
Betancur, L. A., Mangini, D., Mameli, M., Filippeschi, S., Filippeschi, L. K., Paiva, K., Mantelli, M. B. H. & Marengo, M., 16 Jun 2016, *Proc. of the 18th IHPC and 12th IHPS..* Jeju-Do, South Korea, p. 0-0 1 p.

Experimental Tests on Sodium Thermosyphons
Uhlmann, T. W., Mantelli, M. B. H., Manzoni, M., Marengo, M. & Eskilson, P., 16 Jun 2016, *Proc. of the 18th IHPC and 12th IHPS.* Jeju-Do, South Korea, p. 0-0 1 p.

Pulsating Heat Pipe for space applications with non-uniform heating patterns: ground and micro-gravity experiments
Mameli, M., Fioriti, D., Filippeschi, S., Araneo, L. & Marengo, M., 16 Jun 2016, *Proc. of the 18th IHPC and 12th IHPS, 2016.* Jeju-Do, South Korea, p. 0-0 1 p.

Visualizations of the flow patterns in a closed loop flat plate PHP with channel diameter above the critical one and tested under microgravity
Ayel, V., Araneo, L., Marzorati, P., Bertin, Y. & Marengo, M., 16 Jun 2016, *Proc. of the 18th IHPC and 12th IHPS.* Jeju-Do, South Korea, p. 0-0 1 p.

Is a Knowledge of Surface Topology and Contact Angles Enough to Define the Drop Impact Outcome?
Malavasi, I., Veronesi, F., Caldarelli, A., Zani, M., Raimondo, M. & Marengo, M., 26 May 2016, In : Langmuir. 32, 25, p. 6255-6262 8 p.

Contactless prompt tumbling-rebound of drops from a sublimating slope
Antonini, C., Jung, S., Wetzel, A., Heer, E., Schoch, P., Moqaddam, A. M., Chikatamarla, S. S., Karlin, I., Marengo, M. & Poulikakos, D., 25 May 2016, In : Physical Review Fluids. 1, p. 1-11 11 p.

Pool Boiling Versus Surface Wettability Characteristics
Villa, F., Georgoulas, A., Marengo, M., Di Marco, P. & De Coninck, J., 4 Apr 2016, *Proceedings of the World Congress on Momentum, Heat and Mass Transfer (MHMT'16).* Ottawa, Canada, p. 1-8 8 p.

Compressible simulations of bubble dynamics with central-upwind schemes
Koukouvinis, P., Gavaises, M., Georgoulas, A. & Marengo, M., 31 Mar 2016, In : International Journal of Computational Fluid Dynamics. 30, 2, p. 129-140 12 p.

Advanced numerical method for a thermally induced slug flow: application to a capillary Closed Loop Pulsating Heat Pipe
Manzoni, M., Mameli, M., de Falco, C., Araneo, L., Filippeschi, S. & Marengo, M., 3 Mar 2016, In : International Journal for Numerical Methods in Fluids. 82, 7, p. 375-397 23 p.

Non equilibrium lumped parameter model for Pulsating Heat Pipes: validation in normal and hyper-gravity conditions
Manzoni, M., de Falco, C., Araneo, L., Filippeschi, S. & Marengo, M., 27 Feb 2016, In : International Journal of Heat and Mass Transfer. 97, p. 473-485 13 p.

Phos project: Lesson learned from experimenting a pulsating heat pipe on board a sounding rocket (REXUS18) and refurbishment strategies
Guidi, G. M., Molina, M., Filippeschi, S., Creatini, F., Belfi, F., Cicero, G., Fioriti, D., Di Prizio, D., Piacquadio, S., Becatti, G., Orlandini, G., Frigerio, A., Fontanesi, S., Nannipieri, P., Rognini, M., Morganti, N., Di Marco, P., Fanucci, L., Baronti, F., Mameli, M. & 1 others, Marengo, M., 1 Jan 2016, *Proceedings of the International Astronautical Congress, IAC.* (Proceedings of the International Astronautical Congress, IAC).

Rapid Exploitation of Building Energy Design Through Compact TRNSYS Modeling
Beltrami, A., Picco, M. & Marengo, M., 1 Jan 2016, In : AiCARR Journal. 37, p. 60-67 8 p.

Fast Response Building Energy Simulation in support of Low Carbon Design and Retrofit
Picco, M. & Marengo, M., 2016, *Zero Carbon Buildings Today and in the Future 2016.* p. 53-60

Rapid exploitation of building energy design through Trnsys Energy Modelling
Beltrami, A., Picco, M. & Marengo, M., 2016, In : AiCARR Journal. 37, p. 60-67

Compressible bubble dynamic simulations with central-upwind schemes
Koukouvinis, P., Gavaises, M., Georgoulas, A. & Marengo, M., 31 Dec 2015, In : Journal of Physics: Conference Series. 656, 1

Evaluation of friction heating in cavitating high pressure Diesel injector nozzles
Salemi, R., Koukouvinis, P., Strotos, G., McDavid, R., Wang, L., Li, J., Marengo, M. & Gavaises, M., 31 Dec 2015, In : Journal of Physics: Conference Series. 656, 1

Pulsating Heat pipe Only for Space (PHOS): results of the REXUS 18 sounding rocket campaign
Creatini, F., Guidi, G. M., Belfi, F., Cicero, G., Fioriti, D., Di Prizio, D., Piacquadio, S., Becatti, G., Orlandini, G. & Marengo, M., 31 Dec 2015, In : Journal of Physics: Conference Series. 655

Stationary and transient heat conduction in multilayer non-homogeneous stratigraphy
Picco, M., Beltrami, A. & Marengo, M., 31 Dec 2015, In : Energy Procedia. 78, p. 3252-3257 6 p.

Evaluation of friction heating in cavitating high pressure Diesel injector nozzles
Salemi, R., Koukouvinis, P., Strotos, G., McDavid, R., Wang, L., Li, J., Marengo, M. & Gavaises, M., 10 Dec 2015, *9th International Symposium on Cavitation (CAV2015).* Lausanne, Switzerland, p. 0-0 1 p.

Multi-Evaporator Closed Loop Thermosyphon
Marengo, M., Mangini, D., Mameli, M., Vanoli, G. F. T., Araneo, L. & Filippeschi, S., 15 Oct 2015, *7th European-Japanese Two-Phase Flow Group Meeting 2015.* Zermatt, Switzerland, p. 0-0 1 p.

A pulsating heat pipe for space applications: Ground and microgravity experiments
Mangini, D., Mameli, M., Georgoulas, A., Araneo, L., Filippeschi, S. & Marengo, M., 30 Sep 2015, In : International Journal of Thermal Sciences. 95, p. 53-63 11 p.

Numerical investigation of quasi-static bubble growth and detachment from submerged orifices in isothermal liquid pools: The effect of varying fluid properties and gravity levels
Georgoulas, A., Koukouvinis, P., Gavaises, M. & Marengo, M., 30 Sep 2015, In : International Journal of Multiphase Flow. 74, p. 59-78 20 p.

A Novel Type of Multi-Evaporator Closed Loop Two Phase Thermo-syphon: Thermal Performance Analysis and Fluid Flow Visualization
Mameli, M., Mangini, D., Vanoli, G. F. T., Araneo, L., Filippeschi, S. & Marengo, M., 8 Sep 2015, *14th UK Heat Transfer Conference.* Edinburgh, p. 0-0 1 p.

Effect of extreme wetting scenarios on pool boiling
Valente, P., Malavasi, I., Teodori, E., Moita, A. S., Marengo, M. & Moreira, A. L. N., 8 Sep 2015, *14th UK Heat Transfer Conference.* Edinburgh, United Kingdom, p. 0-0 1 p.

Numerical Simulation of a Capillary Pulsating Heat Pipe in Various Gravity Conditions
Manzoni, M., Mameli, M., de Falco, C., Araneo, L., Filippeschi, S. & Marengo, M., 8 Sep 2015, *14th UK Heat Transfer Conference.* Edinburgh, United Kingdom, p. 0-0 1 p.

Numerical Simulation of a Sodium Thermosyphon
Manzoni, M., Uhlmann, T. W., Mantelli, M. B. H., Eskilon, P. & Marengo, M., 8 Sep 2015, *14th UK Heat Transfer Conference.* Edinburgh, United Kingdom, p. 0-0 1 p.

Numerical simulation of pool boiling: the effects of initial thermal boundary layer, contact angle and wall superheat
Georgoulas, A. & Marengo, M., 8 Sep 2015, *Proceedings of 14th UK Heat Transfer Conference.* Edinburgh, p. 0-0 1 p.

Sensitivity Analysis of a Capillary Pulsating Heat Pipe: Influence of the Tube Characteristics
Manzoni, M., Mameli, M., Andromidas, S., de Falco, C., Araneo, L., Filippeschi, S., Nikas, K-S. & Marengo, M., 8 Sep 2015, *14th UK Heat Transfer Conference.* Edinburgh, United Kingdom, p. 0-0 1 p.

Thermal Response of a Pulsating Heat Pipe on Board the Rexus 18 Sounding Rocket: PHOS Experiment Chronicles
Creatini, F., Guidi, G. M., Belfi, F., Cicero, G., Piacquadio, S., Di Prizio, D., Fioriti, D., Becatti, G., Orlandini, G. & Marengo, M., 8 Sep 2015, p. 0-0. 1 p.

Numerical simulation of flow boiling in microchannels: bubble growth, detachment and coalescence
Georgoulas, A. & Marengo, M., 1 Sep 2015, *UK Heat Transfer Conference 2015.* UK, p. 1-12 12 p.

Potential heterogeneous flow boiling conditions in a high-pressure diesel injector
Villa, F., Georgoulas, A., Salemi, R., McDavid, R., Gavaises, M., Koukouvinis, P. & Marengo, M., 27 Aug 2015, *ICLASS 2015, 13th Triennial International Conference on Liquid Atomization and Spray Systems.* Tainan, Taiwan., p. 0-0 1 p.

Two-Component Droplet Wall-Film Interaction: Crown Morphology and Secondary Droplet Properties as a Function of Liquids Viscosities and Surface Tensions
Geppert, A., Strbac, A., Marengo, M., Lamanna, G. & Weigand, B., 27 Aug 2015, *ICLASS 2015, 13th Triennial International Conference on Liquid Atomization and Spray Systems.* Tainan, Taiwan, p. 0-0 1 p.

Towards an integrated decision tool for evaluation of energy performance during building and plant design
Beltrami, A., Jones, R. V., de Wilde, P., Picco, M. & Marengo, M., 15 Jul 2015, *22nd EG-ICE International Workshop.* Eindhoven, The Netherlands, p. 0-0 1 p.

Dynamic Amphiphobicity with Hexadecane and Water Droplets
Malavasi, I., Veronesi, F., Caldarelli, A., Zani, M., Raimondo, M. & Marengo, M., 10 Jul 2015, *Bubble & Drop Interfaces Conference.* Potsdam-Golm, Germany, p. 0-0 1 p.

Stationary and transient heat conduction in multilayer non-homogeneous stratigraphy
Picco, M., Beltrami, A. & Marengo, M., 17 Jun 2015, *6th International Building Physics Conference.* Torino, Italy, p. 0-0 1 p.

On the Impact of Simplifications on Building Energy Simulation for Early Stage Building Design
Picco, M. & Marengo, M., 1 Jun 2015, In : Journal of Engineering and Architecture. 3, 1, p. 66-78 13 p.

Experimental study of a closed loop flat plate pulsating heat pipe under a varying gravity force
Ayel, V., Araneo, L., Scalambra, A., Mameli, M., Romestant, C., Piteau, A., Marengo, M., Filippeschi, S. & Bertin, Y., 21 May 2015, In : International Journal of Thermal Sciences. 96, p. 23-34 12 p.

Steady State and Transient, Non-isothermal Modeling of Cavitations in Diesel Fuel Injectors
Salemi, R., McDavid, R., Koukouvinis, P., Gavaises, M. & Marengo, M., 20 May 2015, *27th Annual Conference on Liquid Atomization and Spray Systems, iLASS America Conference.* Raleigh, North Carolina, p. 0-0 1 p.

Effects of variable accelerations on a PHP-based cooling system
Manzoni, M., Mameli, M., de Falco, C., Araneo, L., Filippeschi, S. & Marengo, M., 13 May 2015, *Vehicle Thermal Management Systems Conference and Exhibition.* Nottingham, p. 0-0 1 p.

Appearance of a low superheat "quasi-Leidenfrost" regime for boiling on superhydrophobic surfaces
Malavasi, I., Bourdon, B., Di Marco, P., De Coninck, J. & Marengo, M., 30 Apr 2015, In : International Communications in Heat and Mass Transfer. 63, p. 1-7 7 p.

Wettability influence on the onset temperature of pool boiling: Experimental evidence onto ultra-smooth surfaces
Bourdon, B., Bertrand, E., Di Marco, P., Marengo, M., Rioboo, R. & De Coninck, J., 27 Apr 2015, In : Advances in Colloid and Interface Science. 221, p. 34-40 7 p.

Assessing durability of superhydrophobic surfaces
Malavasi, I., Bernagozzi, I., Antonini, C. & Marengo, M., 31 Mar 2015, In : Surface Innovations. 3, 1, p. 49-60 12 p.

Appearance of a low superheat "quasi-Leidenfrost" regime for boiling on superhydrophobic surfaces
Malavasi, I., Bourdon, B., Di Marco, P., De Coninck, J. & Marengo, M., 30 Mar 2015, p. 0-0. 1 p.

Water and hexadecane impacting droplets behavior
Malavasi, I., Veronesi, F., Zani, M., Raimondo, M. & Marengo, M., 30 Mar 2015, p. 0-0. 1 p.

Comparison of Energy Simulations for a Residential Unit: a Rapid Method for an Integrated Decision Tool
Beltrami, A., Picco, M. & Marengo, M., 5 Feb 2015, *Building Simulation Applications 2015 - 2nd IBPSA-Italy Conference.* Bolzano, p. 137-146 10 p.

Energy simulation in early stage building design: simplified models and impact on results
Picco, M. & Marengo, M., 5 Feb 2015, *Building Simulation Applications 2015 - 2nd IBPSA-Italy Conference.* Bolzano, p. 119-126 8 p.

Runback ice formation mechanism on hydrophilic and superhydrophobic surfaces
Mangini, D., Antonini, C., Marengo, M. & Amirfazli, A., 31 Jan 2015, In : Cold Regions Science and Technology. 109, p. 53-60 8 p.

A Novel Organic Rankine Cycle (ORC) for High Temperature Applications
Panesar, A., Heikal, M., Marengo, M. & Miche, N., 1 Jan 2015, *2nd International Conference on Energy and Environment.* Guimarães, Portugal, p. 271-277 7 p.

A novel working fluid for Organic Rankine Cycles (ORC)
Panesar, A., Heikal, M., Marengo, M. & Morgan, R., 1 Jan 2015, *Vehicle Thermal Management Systems 12.* Nottingham, UK, p. 423-434 12 p.

Pulsating Heat Pipe in Hyper-Gravity Conditions
Mameli, M., Manzoni, M., Araneo, L., Filippeschi, S. & Marengo, M., 1 Jan 2015, In : Heat Pipe Science and Technology, An International Journal. 6, 1-2, p. 91-109 19 p.

Potential heterogeneous and homogeneous flow boiling conditions in a high-pressure diesel fuel injector
Villa, F., Georgoulas, A., Salemi, R., McDavid, R. M., Gavaises, M., Koukouvinis, P. & Marengo, M., 2015.

Two-component droplet wall-film interaction: Crown morphology as a function of liquids viscosity and surface tension
Geppert, A., Štrbac, A., Marengo, M., Lamanna, G. & Weigand, B., 2015.

Toward a Design of a Micro Pulsating Heat Pipe
Manzoni, M., Mameli, M., DeFalco, C., Araneo, L., Filippeschi, S. & Marengo, M., 12 Dec 2014, *Proceedings of the 4th European Conference on Microfluidics - Microfluidics 2014.* Limerick, p. 0-0 1 p.

Thermal instability of a Closed Loop Pulsating Heat Pipe: Combined effect of orientation and filling ratio
Mameli, M., Manno, V., Filippeschi, S. & Marengo, M., 30 Nov 2014, In : Experimental Thermal and Fluid Science. 59, p. 222-229 8 p.

VOF simulations of the contact angle dynamics during the drop spreading: standard models and a novel wetting force model
Malgarinos, I., Nikolopoulos, N., Marengo, M., Antonini, C. & Gavaises, M., 30 Oct 2014, In : Advances in Colloid and Interface Science. 212, p. 1-20 20 p.

Visualisation and les simulation of cavitation cloud formation and collapse in an axisymmetric geometry
Gavaises, M., Villa, F., Koukouvinis, P., Marengo, M. & Franc, J-P., 5 Oct 2014, In : International Journal of Multiphase Flow. 68, p. 14-26 13 p.

Closed loop pulsating heat pipe: ground and microgravity experiments
Mameli, M., Marelli, L., Manzoni, M., Araneo, L., Filippeschi, S. & Marengo, M., 26 Sep 2014, *Ninth International Conference on two-phase systems for ground and space applications.* Baltimore, Maryland, USA, p. 0-0 1 p.

Experimental Analysis of High Weber Number Drop Impact onto Super-Hydrophobic and Hydrophobic Surfaces
Villa, F., Antonini, C., Marengo, M. & Roisman, I. V., 15 Aug 2014, *Proceedings of the 15th International Heat Transfer Conference.* Kyoto, Japan, p. 0-0 1 p.

Experimental Investigation on a Closed Loop Pulsating Heat Pipe in Hyper-Gravity Conditions
Mameli, M., Manzoni, M., Araneo, L., Filippeschi, S. & Marengo, M., 15 Aug 2014, *Proceedings of the 15th International Heat Transfer Conference.* Kyoto, Japan, p. 0-0 1 p.

Numerical investigation of adiabatic growth and detachment of a gas bubble injected from a submerged orifice at various surface inclinations
Georgoulas, A. & Marengo, M., 15 Aug 2014, *Proceedings of the 15th International Heat Transfer Conference, IHTC-15.* Kyoto, Japan, p. 0-0 1 p.

Superhydrophobicity or icephobicity for an effective icing mitigation strategy?
Antonini, C., Amirfazli, A. & Marengo, M., 15 Aug 2014, *Proceedings of the 15th International Heat Transfer Conference.* Kyoto, Japan, p. 0-0 1 p.

Thermal response of a closed loop pulsating heat pipe under a varying gravity force
Mameli, M., Araneo, L., Filippeschi, S., Marelli, L., Testa, R. & Marengo, M., 30 Jun 2014, In : International Journal of Thermal Sciences. 80

Towards a Numerical Simulation of a Closed Loop Pulsating Heat Pipe in Different Gravity Environments
Manzoni, M., Mameli, M., de Falco, C., Araneo, L., Filippeschi, S. & Marengo, M., 25 Jun 2014, *32nd UIT Heat Transfer Conference.* Pisa, Italy, p. 0-0 1 p.

Oblique impacts of water drops onto hydrophobic and superhydrophobic surfaces: outcomes, timing, and rebound maps
Antonini, C., Villa, F. & Marengo, M., 30 Apr 2014, In : Experiments in Fluids. 55, 4

Investigation of ice shedding properties of superhydrophobic coatings on helicopter blades
Tarquini, S., Antonini, C., Amirfazli, A., Marengo, M. & Palacios, J., 1 Apr 2014, In : Cold Regions Science and Technology. 100, p. 50-58 9 p.

Towards energy performance evaluation in early stage building design: a simplification methodology for commercial building models
Picco, M., Lollini, R. & Marengo, M., 19 Mar 2014, In : Energy and Buildings. 76, p. 497-505 9 p.

Local heat transfer measurement and thermo-fluid characterization of a pulsating heat pipe
Mameli, M., Marengo, M. & Khandekar, S., 31 Jan 2014, In : International Journal of Thermal Sciences. 75, p. 140-152 13 p.

Fabricating superhydrophobic aluminum: An optimized one-step wet synthesis using fluoroalkyl silane
Bernagozzi, I., Antonini, C., Villa, F. & Marengo, M., 20 Jan 2014, In : Colloids and Surfaces A: Physicochemical and Engineering Aspects. 441, p. 919-924 6 p.

Drop rebound after impact: The role of the receding contact angle
Antonini, C., Villa, F., Bernagozzi, I., Amirfazli, A. & Marengo, M., 31 Dec 2013, In : Langmuir. 29, 52, p. 16045-16050 6 p.

Non-Uniform Onset of Nucleate Flow Boiling of R-134a Inside a Glass Minichannel
Baldassari, C., Mameli, M. & Marengo, M., 3 Dec 2013, In : Experimental Heat Transfer. 27, 4, p. 316-328 13 p.

Water drops dancing on ice: How sublimation leads to drop rebound
Antonini, C., Bernagozzi, I., Jung, S., Poulikakos, D. & Marengo, M., 2 Jul 2013, In : Physical Review Letters. 111, 1, 014501.

Enhancing the onset of pool boiling by wettability modification on nanometrically smooth surfaces
Bourdon, B., Di Marco, P., Rioboo, R., Marengo, M. & De Coninck, J., 1 Jul 2013, In : International Communications in Heat and Mass Transfer. 45, p. 11-15 5 p.

Flow boiling in microchannels and microgravity
Baldassari, C. & Marengo, M., 1 Feb 2013, In : Progress in Energy and Combustion Science. 39, 1, p. 1-36 36 p.

Lumped parameter model of sintered heat pipe: Transient numerical analysis and validation
Ferrandi, C., Iorizzo, F., Mameli, M., Zinna, S. & Marengo, M., 1 Jan 2013, In : Applied Thermal Engineering. 50, 1, p. 1280-1290 11 p.

Dynamic energy simulation in support of energy efficiency in public buildings
Picco, M. & Marengo, M., 2013, *Energy management of public buildings: strategies and experiences.*

On The Sizing Of Chp Machines, A Case Study Of Retrofit In A Commercial Building
Picco, M., Savoldelli, V. & Marengo, M., 2013, *Building Simulation 2013: 13th International Conference of the International Building Performance Simulation Association.* p. 135-142

Toward an EnergyPlus decision tool for evaluation of energy performance during early-stage building design
Picco, M. & Marengo, M., 2013, *Building Simulation Applications 2013.* p. 121-130

Understanding the drop impact phenomenon on soft PDMS substrates
Mangili, S., Antonini, C., Marengo, M. & Amirfazli, A., 1 Dec 2012, In : Soft Matter. 8, 39, p. 10045-10054 10 p.

Thermal simulation of a pulsating heat pipe: Effects of different liquid properties on a simple geometry
Mameli, M., Marengo, M. & Zinna, S., 1 Nov 2012, In : Heat Transfer Engineering. 33, 14, p. 1177-1187 11 p.

Drop impact and wettability: From hydrophilic to superhydrophobic surfaces
Antonini, C., Amirfazli, A. & Marengo, M., 3 Oct 2012, In : Physics of Fluids. 24, 10, 102104.

Numerical investigation of the effects of orientation and gravity in a closed loop pulsating heat pipe
Mameli, M., Marengo, M. & Zinna, S., 1 Mar 2012, In : Microgravity Science and Technology. 24, 2, p. 79-92 14 p.

Boiling of R134a inside a glass minichannel. A new statistical approach of flow pattern characterization based on flow visualization
Dall'Olio, S. & Marengo, M., 31 Jan 2012, In : International Journal of Heat and Mass Transfer. 55, 4, p. 1048-1065 18 p.

Numerical model of a multi-turn Closed Loop Pulsating Heat Pipe: Effects of the local pressure losses due to meanderings
Mameli, M., Marengo, M. & Zinna, S., 31 Jan 2012, In : International Journal of Heat and Mass Transfer. 55, 4, p. 1036-1047 12 p.

Influence of the wettability on the boiling onset
Bourdon, B., Rioboo, R., Marengo, M., Gosselin, E. & De Coninck, J., 17 Jan 2012, In : Langmuir. 28, 2, p. 1618-1624 7 p.

Energy simulations for energy efficiency improvement of an existing private clinic in north Italy
Picco, M. & Marengo, M., 2012, *Building Simulation & Optimization 2012.* Loughborough University, p. 401-408

Drop collisions with simple and complex surfaces
Marengo, M., Antonini, C., Roisman, I. V. & Tropea, C., 1 Aug 2011, In : Current Opinion in Colloid and Interface Science. 16, 4, p. 292-302 11 p.

Understanding the effect of superhydrophobic coatings on energy reduction in anti-icing systems
Antonini, C., Innocenti, M., Horn, T., Marengo, M. & Amirfazli, A., 1 Jun 2011, In : Cold Regions Science and Technology. 67, 1-2, p. 58-67 10 p.

Experimental investigation of a single droplet impact onto a sessile drop
Nikolopoulos, N., Strotos, G., Nikas, K. S., Gavaises, M., Theodorakakos, A., Marengo, M. & Cossali, G. E., 1 Jan 2010, In : Atomization and Sprays. 20, 10, p. 909-922 14 p.

Single droplet impacts onto deposited drops. Numerical analysis and comparison
Nikolopoulos, N., Strotos, G., Nikas, K. S., Theodorakakos, A., Gavaises, M., Marengo, M. & Cossali, G. E., 1 Jan 2010, In : Atomization and Sprays. 20, 11, p. 935-953 19 p.

Advanced design of a "low-cost" loop heat pipe
Vasiliev, L., Marengo, M., Ferrandi, C., Zinna, S. & Maziuk, V., 1 Dec 2009.

Advanced design of a low cost loop heat pipe and comparison with a novel numerical approach
Zinna, S., Vasiliev, L., Marengo, M. & Ferrandi, C., 1 Dec 2009, *41st AIAA Thermophysics Conference.* 2009-3754. (41st AIAA Thermophysics Conference).

An innovative method to control the incipient flow boiling through grafted surfaces with chemical patterns
Rioboo, R., Marengo, M., Dall'Olio, S., Voue, M. & De Coninck, J., 2 Jun 2009, In : Langmuir. 25, 11, p. 6005-6009 5 p.

General methodology for evaluating the adhesion force of drops and bubbles on solid surfaces
Antonim, C., Carmona, F. J., Pierce, E., Marengo, M. & Amirfazli, A., 2 Jun 2009, In : Langmuir. 25, 11, p. 6143-6154 12 p.

Thermally induced secondary drop atomisation by single drop impact onto heated surfaces
Cossali, G. E., Marengo, M. & Santini, M., 1 Feb 2008, In : International Journal of Heat and Fluid Flow. 29, 1, p. 167-177 11 p.

Thermal chamber design for loop heat pipe ground experiment
Qu, Y., Cheng, L., Zinna, S., Luan, T. & Marengo, M., 1 Oct 2007, In : Chinese Space Science and Technology. 27, 5

Secondary atomization of water and isooctane drops impinging on tilted heated surfaces
Moreira, A. L. N., Moita, A. S., Cossali, E., Marengo, M. & Santini, M., 1 Aug 2007, In : Experiments in Fluids. 43, 2-3, p. 297-313 17 p.

Effect of wall effusivity on termally induced secondary atomisation of single drop impacting onto a tilted surface
Cossali, G. E., Marengo, M., Santini, M. & Fest, S., 1 Dec 2006.

Modeling of a real LHP and integration in a system level analysis
Xin, G., Cheng, L., Du, W., Luan, T., Qu, Y., Zinna, S., Marengo, M., Molina, M. & Burger, J., 1 Dec 2006.

Modelling of spray characteristics from multi-hole injectors for direct-injection gasoline engines
Tonini, S., Gavaises, M., Arcoumanis, C., Cossali, G. E. & Marengo, M., 1 Dec 2006.

Design of a polymeric mini-channelled system for the cooling of a high-energy particle detector at fermilab
Chignoli, L., Cossali, G. E. & Marengo, M., 21 Nov 2005, *Proceedings of the 3rd International Conference on Microchannels and Minichannels, 2005.* p. 237-248 12 p. ICMM2005-75241. (Proceedings of the 3rd International Conference on Microchannels and Minichannels, 2005; vol. PART B).

Single-drop empirical models for spray impact on solid walls: A review
Cossali, G. E., Marengo, M. & Santini, M., 1 Nov 2005, In : Atomization and Sprays. 15, 6, p. 699-736 38 p.

Secondary atomisation produced by single drop vertical impacts onto heated surfaces
Cossali, G. E., Marengo, M. & Santini, M., 1 Sep 2005, In : Experimental Thermal and Fluid Science. 29, 8, p. 937-946 10 p.

Micro-heat-sinks for space applications
Marengo, M., Zhdanov, S., Chignoli, L. & Cossali, G. E., 29 Sep 2004, *Proceedings of the Second International Conference on Microchannels and Minichannels (ICMM2004).* Kandlikar, S. G., Celata, G. P., Nishio, S., Stephan, P. & Thonon, B. (eds.). p. 87-95 9 p. (Proceedings of the Second International Conference on Microchannels and Minichannels (ICMM2004)).

The role of time in single drop splash on thin film
Cossali, G. E., Marengo, M., Coghe, A. & Zhdanov, S., 1 Jun 2004, In : Experiments in Fluids. 36, 6, p. 888-900 13 p.

Analytical and numerical modeling of microchannel heat sink
Cossali, G. E., Di Pietro, D. A. & Marengo, M., 1 Dec 2003, *International Conference on Microchannels and Minichannels.* Kandlikar, S. G. (ed.). p. 713-720 8 p. (International Conference on Microchannels and Minichannels; vol. 1).

Characterisation of drop impact on heated surfaces by optical techniques
Cossali, G. E., Marengo, M. & Santini, M., 1 Dec 2003, In : Institute of Physics Conference Series. 177, 1 p.

Comparison of four analytical and numerical models for a microchannel heat sink
Cossali, G. E., Di Pietro, D. A. & Marengo, M., 1 Jan 2003, In : International Journal of Heat and Technology. 21, 2, p. 31-42 12 p.

Analysis of impact of droplets on horizontal surfaces
Šikalo, Š., Marengo, M., Tropea, C. & Ganić, E. N., 1 Jan 2002, In : Experimental Thermal and Fluid Science. 25, 7, p. 503-510 8 p.

Time evolution of liquid drop impact onto solid, dry surfaces
Rioboo, R., Marengo, M. & Tropea, C., 1 Jan 2002, In : Experiments in Fluids. 33, 1, p. 112-124 13 p.

Outcomes from a drop impact on solid surfaces
Rioboo, R., Tropea, C. & Marengo, M., 1 Mar 2001, In : Atomization and Sprays. 11, 2, p. 155-165 11 p.

Impact of drops on walls and films
Tropea, C. & Marengo, M., 1 Jan 1999, In : Multiphase Science and Technology. 11, 1, p. 19-36 18 p.

Experimental investigation of a polydispersed water spray impinging on a conical surface
Ghielmetti, C., Marengo, M., Mundo, C. & Tropea, C., 1 Jan 1997, In : International Journal of Fluid Mechanics Research. 24, 1-3, p. 358-369 12 p.

The impact of a single drop on a wetted solid surface
Cossali, G. E., Coghe, A. & Marengo, M., 1 Jan 1997, In : Experiments in Fluids. 22, 6, p. 463-472 10 p.

TEACHING AND LEARNING

I have almost 20 years of academic career which includes teaching and student experience. Most of my experience was carried out at the Polytechnic of Milan and University of Bergamo, Italy, for the Courses of Building Engineering, Mechanical Engineering, Computing and Business Engineering. I taught 14 modules of Thermal Physics (B.Sc. level) and 7 modules of Energy Saving in Building and Building Energy Certification (M.Sc. level) as module leader and 22 modules of Thermal Physics and Thermal Plants (B.Sc. level) as contract professor. I have orally examined more than 4000 B.Sc. and M.Sc. students. I have an extensive experience in teaching for Professional Development and Training, for example as Director of the “Building Energy Certification” courses, and for the “High Formation of Secondary School Teachers” in Bergamo, Italy. I have supervised to completion the research projects (Final Year Project for M.Sc. students) of more than 100 Master Degree students, 14 Ph.D. students and 11 Early Stage Researchers. As Visiting Professor at the University of Mons-Hainaut, Belgium, I taught 5 post-graduate modules of Thermodynamics of Complex Systems and Advanced Heat Transfer. I designed, proposed and organised several professional and research courses, among which the International Advanced Course on the Interface, Drops and Liquid Sprays Physics (LIDESP), now at the 6th edition. I was member of the panel for the Student Curriculum Development for the Engineering Faculty of Bergamo from 1999 to 2004, for the design and implementation of the courses.

2014	Module of Fluid Dynamics, ME257, Part II, Module leader: Prof. Sergei Sazhin, B.Sc. in Mechanical, Automotive and Aeronautical Engineering, University of Brighton
2014	Module of Advanced Thermodynamics, Ph.D. students, University of Mons, Mons, Belgium. Design, preparation and delivery of a module of 8 hours to 6 students

Major teaching responsibilities in previous years that have not already been included above

I was module leader of the following 21 modules (AY= academic year):
1.Module of Energy Saving in Building and Building Energy Certification, M.Sc. in Building Engineering, University of

Bergamo, AY06-07, AY07-08, AY08-09, AY09-10, AY11-12, AY12-13, AY13-14
2.Module of Thermal Physics and Thermal Plants, B.Sc. in Building Engineering, University of Bergamo, AY11-12, AY12-13, AY13-14
3.Module of Thermal Physics, B.Sc. in Computing Engineering, University of Bergamo, AY04-05, AY05-06, AY06-07, AY07-08
4.Module of Thermal Physics, B.Sc. in Business Engineering, University of Bergamo, AY02-03, AY03-04, AY04-05, AY05-06, AY06-07, AY07-08, AY08-09

Innovative units or teaching methods

I designed, proposed and co-organised new professional courses (see below the section “Continuing Professional Development teaching”). To note, the course on FEM Modelling was the first one in Italy to propose theoretical insights together with a practical session at the workstations (using commercial codes), both in the mechanical and thermal field. The courses in “Energy Certification of Buildings” gave the chance to more than 200 professionals to obtain the Building Energy Assessment Certificate to carry out Energy Certification of Building. It was the first one of its kind in Italy in 2007, just few months after the introduction of the Italian energy regulation for buildings.

Collaborative teaching projects with colleagues in other schools or institutions

All of my professional development courses and the lecturing to PhD students have been developed and taught in collaboration with external institutions, such as York University and University of Liverpool (LIDESP), the Building Construction Association (for the Energy Certification of Buildings Course), Polytechnic of Milan (for the Infrared Thermography Techniques Course). The LIDESP course was delivered in Darmstadt (Germany), Tainan (Taiwan), Brighton (UK), Valencia (Spain). As Visiting Professor at University of Mons-Hainaut, Belgium, I taught 5 modules of “Thermodynamics of Complex Systems” (AY05-06-07, AY09-10-11-12) to Ph.D. and M.Sc. students in Physics.

Major achievements in teaching administration

Apart of being module leader of several modules, I was member of the panel for the Curriculum Development for the Engineering Faculty of Bergamo from 1999 to 2004, member of the Business Engineering School panel for the Curriculum Development from 2004 to 2006 and member of the Building Engineering School panel for the Curriculum Development from 2007 to 2016. Furthermore, I was the dean delegate for the admission of foreign students to the Engineering Courses at the University of Bergamo, from 2003 to 2009.

Continuing Professional Development teaching

2007-2009 Proposer and Director of Professional Courses in “Energy Certification of Buildings” at Scuola Edile, Seriate, Italy, with the accreditation of Lombardy Region, Oct 2007 (60 students), Jan 2008 (90 students), Mar 2008 (90 students), Nov 2009 (50 students), two half-days per week for 10 weeks (80h in total).
2007-2009Co-founder and co-director of the Advanced Course in “Infrared Thermography Techniques for Industrial and Civil Applications”, Polytechnic of Milan, Italy, 3 editions, up to 40 students each course, 3 days, 20 hours
2009-2010 Contract Teaching of Energy Saving, Energetics and Renewable Energies at Craftsman Association, Bergamo, Italy, one edition, 15 students, half a day for 12 weeks
2005-2006 Contract Teaching of Thermal and Fluid Machinery, High Formation of Secondary School Teachers (SILSIS), Bergamo, Italy, one edition, about 90 teachers, 40 hours in total
2002-2005Co-Proposer, Co-director and secretary of the Professional Courses “From design to FEM modelling of structural components”, University of Bergamo, Dalmine, Italy, 30 students each, 4 editions, 3 days, 24 hours
2002-2003Proposer and trainer of the Professional Course on “Design and writing of European Projects” for the Project NETFORMEC, Industrial Board of Bergamo, Italy, 20 students, 1 full day of training, 7 hours

PhD Final Exam Board Member

1.Behnam Rostami, Experimental Analysis of Droplet Generation in Presence of Newtonian And Non-Newtonian Flows Within Micro-junctions, PhD Course in Mechanics and Advanced Engineering Sciences (DIMSAI), University of Bologna, Italy, 18 December 2017
2.Simeng Chen, An experimental investigation of drop impact phenomena with complex fluids on heated and soft surfaces, University of Liverpool, UK, 5 October 2017
3.Nadia Ndamuso, Parametric Studies of Cavitation Dependence on Hydrocarbon and Biodiesel Fuel Injection flows, City University, London, UK, 27 April 2017
4.PhD Panel, 3 PhD Candidates, Doctoral School in Science and Technology of Innovative Materials, University of Parma, Italy, 17 March 2017
5.Visakh Vaikuntanathan, Experimental and Theoretical Studies of Liquid Drop Impact on Solid Surfaces Comprising Smooth and Texture Portions, India Institute of Science, Bangalore, India, 21 December 2015
6.Muhammad Israr, Temporal and Spatial Characterization of Slug Flow in Pipelines Using a Simultaneous PIV-LIF Technique, Information Resource Centre of Universiti Teknologi Petronas (UTP), Bandar Seri Iskandar, Perak, Malaysia, 29 September 2015

7.Mansour Al Qubeissi, Heating and evaporation of automotive fuel droplets, University of Brighton, Brighton, UK, 31 July 2015
8.Viktor Grishaev, Impact of particle-laden drops on substrates with various wettability, Université Libre De Bruxelles, École Polytechnique De Bruxelles, Bruxelles, Belgium, 9 April 2015
9.PhD Panel, 3 PhD Candidates, Doctoral School in Industrial Engineering, University of Padova, Italy, 15 April 2014
10.Davood Kalantari, Characterization of liquid spray impact onto walls and films, Faculty of Mechanical Engineering, Darmstadt University of Technology, 10 November 2006
11. Kai Heukelbach, Untersuchung zum Einfluss der Düseninnenströmung auf die Stabilität von flächigen Flüssigkeitsstrahlen, Faculty of Mechanical Engineering, Darmstadt University of Technology, 6 April 2003

Microgravity Platforms and Parabolic Flight Campaigns (Principal Investigator)

1. Experimental characterization of a Single Loop Pulsating Heat Pipe with IR analysis, 2017 • Parabolic Flights • 68th ESA Parabolic Flight Campaign • ID: 9582 (performed the 2nd time) in collaboration with University of Pisa and Polytechnic of Milan, M. Marengo, L. Araneo, D. Mangini, M. Bernagozzi, L. Pietrasanta, M. Pozzoni, M. Palermo, L. Jackson
2. Experimental characterization of a Space Pulsating Heat Pipe with IR analysis, 2017 • Parabolic Flights • 67th ESA Parabolic Flight Campaign • ID: 9581 (performed the 1st time) in collaboration with University of Pisa, M. Marengo, D. Mangini, M. Mameli, N. Miché, M. Bernagozzi, L. Pietrasanta, M. Pozzoni, A. Catarsi, S. Filippeschi, M. La Foresta
3. Self-Rewetting liquid vein stability - SELf-rewetting fluids for ENErgy management SELENE, 2017 • Parabolic Flights • 66th ESA Parabolic Flight Campaign • ID: 9579 (performed the 1st time) in collaboration with the Free University of Bruxelles (ULB), M. Marengo, N. Miché, M. Bernagozzi, L. Pietrasanta, R. Chambers, M. Palermo, S. Van Vaerenbergh, P. Queeckers, W. Tzevelecos
4. Thermo-hydraulics characterisation of a single-loop pulsating heat pipe in a variable gravity regime, ESA MAP INWIP, 2017 • Parabolic Flights • 66th ESA Parabolic Flight Campaign • ID: 9580 (performed the 1st time) in collaboration with University of Pisa, Polytechnic of Milan, University of Bergamo, M. Marengo, L. Araneo, D. Mangini, A. Ilinca, M. Mameli, D. Fioriti, S. Filippeschi
5. Thermo-hydraulics characterisation of a pulsating heat pipe in a variable gravity regime, 2013 • Parabolic Flights • 59th ESA Parabolic Flight Campaign • ID: 9419 (performed the 1st time) in collaboration with University of Pisa, Polytechnic of Milan, University of Bergamo, M. Marengo, L. Araneo, M. Mameli, M. Manzoni, L. Marelli
6. Thermo-Hydraulics Characterisation of a Pulsating Heat Pipe in a variable Gravity Regime, 2013 • Parabolic Flights • 58th ESA Parabolic Flight Campaign • ID: 9401 (performed the 1st time) in collaboration with University of Pisa, Polytechnic of Milan, University of Bergamo, M. Marengo, L. Araneo, M. Mameli, S. Filippeschi, R. Testa, L. Marelli

Invited lectures (from 2014)

1.University of Southampton, AFM seminar, Southampton, UK, 13th December 2017
2.Sussex University, Engineering Division, Brighton, UK, 27th September 2017
3.University of Toronto, Mechanical Engineering Dept., Toronto, Canada, 26th July 2017
4.York University, Lassonde School of Engineering, Toronto, Canada, 10th July 2017
5.Istituto Superior Tecnico, E+ Center for Innovation, Technology and Policy Research - IN+, Lisbon, Portugal, 30th October 2016
6.University of Strathclyde, Division of Mathematics, Glasgow, UK, 23th February 2016
7.UK SPACE AGENCY, ELIPS Community Meeting, London, 24th November 2015
8.Institut für Thermodynamik der Luft- und Raumfahrt, University of Stuttgart, Germany, 20th April 2015
9.KAIST, Department of Mechanical Engineering, Daejeon, Korea, 28th August 2015
10.University of York, Lassonde Mechanical Engineering, Toronto, Canada, 28th October 2015
11.University of Toronto, MIE Distinguished Lectures, Toronto, Canada, 30th October 2015
POLIEFUN, Polytechnic of Milan, Milan, Italy, 11th September 2014

Plenary lectures at International Conferences

20-21 July 2015M. Marengo, M. Manzoni, D. Mangini, M. Mameli, L. Araneo, S. Filippeschi, Closed Loop Pulsating Heat Pipes at Variable Gravity Levels, 2nd International Conference on Heat Transfer and Fluid Flow (HTFF), Barcelona, Spain
20-24 May 2012M. Marengo, M. Mameli, S. Khandekar, Towards Quantitative Validation of a Closed Loop Pulsating Heat Pipe Numerical Model, 16th International Heat Pipe Conference, INSA, Lyon, France
5-7 Sept 2005M. Marengo, G.E. Cossali, M. Santini, Effects of wall effusivity on secondary droplet atomisation from single and multiple drop impact onto heated surfaces, Proc. of 20th ILASS Europe Conference, Orleans, France
5-10 June 2005M. Marengo, G.E. Cossali, M. Santini, Single and multiple drop impact onto heated surfaces, International Symposium on Heat and Mass Transfer in Spray Systems, Antalya, Turkey
17-19 June 2004Marengo M., S. Zhdanov, L. Chignoli, G.E. Cossali, Micro-Heat-Sinks for Space Applications, Proceedings of the Second International Conference on Microchannels and Minichannels (ICMM2004), Rochester, New York, USA

Postgraduate Research (PGR) Doctorate Student Supervision

Current
1.Cristina Boscariol, University of Brighton, 1st supervisor, End date: 31.10.2018

2.Luca Pietrasanta, University of Brighton, 1st supervisor, End date: 31.10.2018
3.Dario Fusco, University of Bergamo, 1st supervisor, End date: 30.9.2019
4.Nick Applin, University of Brighton, 2nd supervisor, End date: 30.4.2022

Past
1.Daniele Mangini, Hybrid Thermosyphon/Pulsating Heat Pipe for Ground and Space Applications. A novel two-phase passive heat transfer device, 10.05.2017, University of Bergamo, 1st supervisor
2.Fabio Villa, Effect of Wettability on Phase Change Phenomena, 24.05.2017, University of Bergamo, 1st supervisor
3.Miriam Manzoni, Design of Pulsating Heat Pipes. A novel non-equilibrium lumped parameter model for transient gravity levels, 14.10.2016, University of Bergamo, 1st supervisor
4.Ileana Malavasi, Wettability Effects on Interface Dynamics and Phase-Change, 14.10.2016, University of Bergamo, 1st supervisor
5.Alberto Beltrami, TRNSYS Integrated Modeling Support Tool for a Fast Building-Plant System Design, 14.10.2016, University of Bergamo, 1st supervisor
6.Benoit Bourdon, Influence of the wettability on the pool boiling onset, 17.4.2015, University of Mons, 2nd supervisor
7.Marco Picco, Dynamic Energy Simulation Toward Integrated Design of Non-Residential Buildings. Model description simplifications and their impact on simulation results, 22.05.2014, University of Bergamo, 1st supervisor
8.Annamaria Belleri, Integrated Design Methods for Natural Ventilation, 22.05.2014, University of Bergamo, 1st supervisor
9.Chiara Baldassari, Flow Boiling of Refrigerants Inside a Glass Minichannel, 08.05.2013, University of Bergamo, 1st supervisor
10.Mauro Mameli, Pulsating Heat Pipes: Numerical Modeling and Experimental Assessment, 11.04.2012, University of Bergamo, 1st supervisor
11.Carlo Antonini, Superhydrophobicity as a Strategy Against Icing. Analysis of the water/surface dynamic interaction for icing mitigation, 21.04.2011, University of Bergamo, 1st supervisor
12.Lucia Cattani, L'edificio energeticamente sostenibile: verifiche energetiche, strategie per la raccolta dati e tecniche d'intervento per edifici esistenti, 16.04.2009, University of Bergamo, 1st supervisor
13.Stefano Dall'Olio, Boiling of R134a Inside a Glass Minichannel. A New Approach of Flow Pattern Characterization Based on Flow Visualization, 16.04.2009, University of Bergamo, 1st supervisor
14.Stefano Zinna, Numerical Analysis of a Loop Heat Pipe for the Thermal Control of a Cryo-Cooler on the International Space Station, 22.5.2007, University of Bergamo, 1st supervisor
15.Maurizio Santini, Effect of surface properties on secondary atomization by impact of drops over heated surfaces, 16.3.2005, University of Parma, 2nd supervisor
16.Romain Rioboo, Impact de gouttes sur surfaces solides et sèches, 27.02.2001, Université Pierre et Marie Curie - Université Paris 6, 3rd supervisor

Academic Spin Off

01.02.2010 – 12.07.2012 Founder and Board member of the start-up company ICENOVA srl, Bergamo Board of Trade incubator, Brembate di Sopra, Italy.
ICENOVA srl was a start-up company working in the field of energy.
Main activities of ICENOVA srl company
- Energy audits of industrial plants
- Design of waste heat recovery systems
- Design of heat exchangers
- Financial evaluation of energy systems
- Consulting for energy contracts

Average Turnover 2010-2012: 96k€/yr.

06.11.2007 – 31.12. 2011Founder and President of the university spin-off UNIHEAT srl, Bagnatica, Italy.
UNIHEAT srl was a university spin-off company working in the field of thermal management, Engineering consultant company in thermal and energy sector. Main activities of UNIHEAT srl company:
- Mold cooling for plastics injection and die casting
- LED thermal control
- Design of heat exchangers
- Design of a polymeric flexible systems for heat dissipation
- Thermal analysis of kitchen ovens and induction plates
- Thermal control of a PV cell for solar concentration

Main customers: B.M. Plastic, Intel, Whirlpool, Candy, ABB, Cree Led, Artemide, Halfen-Dea, CBF Engineering, Fondermat, Warrant Group
Average Turnover 2007-2011: 181k€/yr.

Impact cases

1.2016 Tatamotors UK TMETC proposed to my research team an INNOVATE UK proposal titled LOOP Heat Pump Circuit (LOOPER). The project assessed the feasibility of integrating a Loop Heat Pipe into a heat pump for a battery electric vehicle (BEV) and determined the potential reductions in energy used to provide cabin heating and cooling. The feasibility study was conducted using an advanced Co-Simulation technique using Computer Aided Engineering software and applying 1D system and 3D CFD vehicle level simulation techniques. The novel 1D model was designed and built by us in

Brighton. The project benefited from TMETC's expert knowledge on BEV product development, cabin comfort know-how, vehicle level aerodynamics and system level CAE. Our contribution was essential to deliver novel software to simulate the Loop Heat Pipes for BEVs. This work has further established our recognition in the field of thermal management in the automotive sector, and it is directly linked to the submission of a EU project “Individual Fellowship” THERMBAT by our Research Fellow, Dr. Mangini, and two industrial network initiatives with the Advanced Engineering Centre, (i) a workshop on Thermal Applications with an industrial consortium in May 2018 and (ii) a meeting with Jaguar Land Rover aiming at a INNOVATE UK proposal in 2018. A journal publication will be submitted in January 2018 and two publications have been already presented in UK conferences.
2.2013 I received a research contract for 75k€ by TENARIS DALMINE SPA, a leading supplier of tubes and related services for the world’s energy industry and certain other industrial applications with a global revenue of more than 4.3B$, in order to understand the possibility of using hydrophobic and super-hydrophobic surfaces to decrease the pressure drops with two- and three-phase flows. The two-year project led to the recognition of very high potentials in terms of energy saving and less material corrosion, even if at the moment the coating durability is not yet suitable for the oil applications. Moreover, two Journal papers have been published using the data obtained through this consultancy (I. Bernagozzi, C. Antonini, F. Villa, M. Marengo, Fabricating superhydrophobic aluminum: an optimized one-step wet synthesis using fluoroalkyl silane, Colloids and Surfaces A: Physicochemical And Engineering Aspects, 2013, doi: 10.1016/j.colsurfa.2013.05.042; I. Malavasi, I. Bernagozzi, C. Antonini, M. Marengo, Assessing Durability of Superhydrophobic Surfaces, Surface Innovations 3 (1), 49-60, 2015, doi: 10.1680/si.14.00001) with more than 50 citations in two years.
3.2009 UNIHEAT s.r.l. received a contract by INTEL, an American multinational corporation and technology company and the world's second largest and second highest valued semiconductor chip makers, to develop a polymeric pulsating heat pipe for smartphones. The contract started because Dr. Rajiv Mongia, Director at INTEL, noticed my previous invention (see Patent N. 4 in the list below). We worked for one year to deliver a design of the system, which brought to a second patent on 12 Nov 2009 (http://www.google.com/patents/US20110067843). The project is still in my mind as proven by the recent (even if unsuccessful) submission to EPSRC of the project “Flexible Heat Pipe Technology for Distributed Cooling/Heating and Energy Harvesting” with the University of Liverpool. This concept was the first of its kind in the scientific literature and only in 2017 Samsung was able to develop a working prototype in Korea, confirming the feasibility and excellence of this idea.
4.2009 UNIHEAT s.r.l. received a public grant of 620k€ from the Italian Ministry of Industry for a three-year project with WHIRLPOOL (Bando Industria 2015, Project N. EE_00076) about “Development of integrated systems for innovative domestic appliances with reduce energy consumption”. WHIRPOOL is the world's largest home appliance maker (revenue 21B$). The premature closure of the company in 2011 caused the end of the project, but we have found interesting, novel solutions for the waste heat recovery in the kitchen, which have been later on used in the market with the trademark “Greenkitchen” (http://mea.whirlpool.com/discover-whirlpool/sustainability/green-kitchen). Due to confidentiality reasons, no open publication was produced. WHIRPOOL recognised this work asking me to participate to their “inventor sessions” after the end of the project.
2007 I was able to raise the interest of Aermacchi S.p.A. (now incorporated in LEONARDO S.p.A, one of the largest European company in in aerospace, defence and security with a revenue of 12B$) in using superhydrophobic coatings for icing mitigation on the plane wings. This was the beginning of a long-term collaboration, terminated only in 2013, with the project “Accordo Quadro” financed by the Lombardy Region. Overall the collaboration with Aermacchi brought more than 300k€ to the University of Bergamo, with 3 post-docs working on this project and two international collaborations (University of Alberta, Edmonton, and McGill University, Montreal, Canada) and a national collaboration with Polytechnic of Milan. The study discovered the chance to reduce up to 80% of the energy consumption used by the heating system for de-icing, opening an original route for a new ice-mitigation technique. Different journal and conference papers have originated from this project, but it is worth mentioning the paper “Understanding the effect of superhydrophobic coatings on energy reduction in anti-icing systems” by C. Antonini, M. Innocenti, T. Horn, M. Marengo, A. Amirfazli, Cold Regions Science and Technology 67(1), 58-67, which was the most cited paper of this Journal for many years. At the moment, it has already received more than 200 citations (Google Scholar).

Patents

1. European Patent: Metodo e Apparato per lo Stampaggio a Caldo di Prodotti in Materiale Termoplastico, Applicant: B.M. Mobili in Plastica S.p.A., inventors: M. Marengo, A. Barcella, Filing: EP 06425432.9, Date: 17.07.2006
2. European Patent: Valve Mechanism for a thermo-hydraulic system, particularly for high pressure, Applicant: Records S.p.A., inventors: M. Marengo, G.E. Cossali, E. Gotti, Filing: EP 07112325.1-1252, Date: 12.07.2007
3. European Patent: Devices and method for enhanced heat transfer, Applicant: Université de Mons-Hainaut, inventors: R. Rioboo, M. Marengo, S. Dall'olio, M. Voué, J. De Coninck, Filing: EP 07113887.9-1266, Date: 06.08.2007
4. European Patent: Microdissipatore polimerico, in particolare per il condizionamento termico di dispositivi meccanici ed elettronici, Applicant: NANTO s.r.l., inventor: M. Marengo, Filing: RM2007A000593, Date: 15.11.2007
5. Italian Patent: Device and methods for drop generation, Applicant: Università di Bergamo, inventors: M. Santini, M. Marengo, G.E. Cossali, Filing: PCT IT2008/000554, Date: 22.08.2008
6. Italian Patent: Micro-cogenerator supplied by wood biomass, Applicant: ICENOVA s.r.l., inventors: M. Marengo, G. Suardi, D. Rossetti, Filing: GE2011U000029, Date: 15.11.2011
7. European Patent: Wick Structure for Two-phase Heat Transfer Apparatus, Applicant: Universitè Libre de Brussel, University of Bergamo, inventors: C. Buffone, M. Marengo, Filing: EP14157863.3, Date: 05.03.2014

Appointment to national or international bodies

Jun 2018-present Member of the Space Environment Advisory Committee - UK Space Agency. This body provides advice on the overall UK strategy and priorities for involvement in Aurora, planetary exploration and the microgravity ELIPS programme. Recent examples of SEAC input include the reviews of the Robotic Exploration Strategy, Aurora Science Knowledge Transfer AO and approval of lines for PB-HME. It is one of the ten Advisory Committees of the UKSA.
Oct 2016-presentUK scientific representative in the International Heat Pipe Conference Committee. This unique, international group is the exclusive committee of 19 highly distinguished scientists in the field of Heat Pipes. The membership is given by merit and looking at the international stand and it is only by invitation. There is one member for each country which has given a substantial contribution in the field. The membership is permanent. Since 1973 the IHPCC members met once per year to analyse the research outlook and to organise the International Heat Pipe Conference and Heat Pipe Symposium (to be held every two or three years). The IHPC&HPS is the most important venue in the field of passive two-phase systems in the world.
Dec 2015- May 2018 Member of the Space Environment Working Group - UK Space Agency. This membership is important, since the 9 members of SEWG are advising the UK Space Agency Director about the National Strategies of the Physical and Life Sciences experiments in Space and Human Exploration. The members are coming from important UK Universities (UCL, Cranfield), Laboratories such as NPL, and primary UK space companies.
July 2014-presentMember of the ELIPS-4 project SELENE (SELf-rewetting fluids for thermal ENErgy management in space)
Oct 2013-present Scientific Coordinator of the International Pulsating Heat Pipe Scientific Team for the Thermal Platform on the International Space Station, European Space Agency, The Netherlands. This is an important appointment, since this kind of opportunities are happening once in the whole academic life, due to the very long journey of building up the team, obtaining good results and being finally selected for the ISS. From the first idea (2007) to the actual experiment on the ISS, I and my team will spend 14 years in the preparation, the experimental design, the final delivery from the scientific team to the ESA Engineering Team and the rocket launch to the ISS. The Scientific Team is made up of 11 partners around the world.
2009 - present Scientific Committee member of European Microfluidics Conference
2009- presentScientific Committee member of WSEAS int. Conf. On Heat Transfer, Thermal Engineering and Environment
2008 – 2013Member of European Low Gravity Research Association
2006 - present Scientific Committee member of ICLASS International Conferences
2005 - present Member of the Board of the European Institute of Liquid Atomization and Spray Systems
2005- present Scientific Committee member of ILASS Europe Conference

In the professional environment, among other commitments, I was the Scientific manager of the Sustainability and Energy action plan, City Council of Bergamo, Bergamo, Italy, 01.04.2010 – 31.10.2011, and the Commissioner of the assignation board of the international Tender for the Construction of Broadening of Orio al Serio Airport, Bergamo.