

# CURRICULUM VITAE

## Professor Hussam Jouhara, BSc (First), PhD, CEng, FIMechE, FIEI, M.Inst.R, SFHEA

**DOB:** 1<sup>st</sup> October 1974, **Nationality:** British, **Address:** 087f, Elliott Jaques Building, College of Engineering, Design and Physical Sciences, Brunel University, Uxbridge, UB8 3PH, UK, **Email:** [hussam.jouhara@brunel.ac.uk](mailto:hussam.jouhara@brunel.ac.uk), **Tel:** +441895 2 67805, **Mobile:** +44 7818448094

### EXPERTISE SUMMARY

- A Professor of Thermal Engineering at Brunel University London.
- Fellow and a chartered Engineering in both the UK (IMechE) and Ireland (Engineers Ireland).
- Senior Fellow of the Higher Education Academy (SFHEA), UK.
- A former technical director (executive) of a world-leading British heat pipe heat exchangers manufacturing company.
- A visiting Professor at the University of South Wales, UK.
- An invited professor at Icam University, Lille, France.
- A visiting professor at Wroclaw University of Technology, Poland.
- Inventor of many Energy systems that are already in the market.
- A co-author of two books published by Routledge (Taylor & Francis) and the IAEA in addition to many open-university style books.
- Managing and Guest Editor of many special issues in leading International Journals
- Proven track record in attracting both industrial and government funding.
- Extensive background in experimental heat transfer and fluid dynamics including the design and commissioning of several thermal-fluids experimental test facilities.
- The developer of many novel thermal and performance design/sizing tools for heat pipe based heat exchangers (Recuperators, Steam generators, Steam condensers and regenerators), for low, medium and high temperature applications.
- Expert in the fields of heat transfer, two-phase systems and electronics thermal management methodologies, and analytical and computational heat transfer and fluid dynamics.
- Expert in the field of building heat transfer and air conditioning systems.
- Extensive international industrial collaboration including technical and forensic consulting activities.
- Extensive university-level teaching experience.
- Supervision experience at both the undergraduate, MSc and PhD levels in British, Irish, Polish, Italian and French Universities.
- External and internal examiner of PhD, EngD, MPhil and MSc (research) Vivas in the UK, Norway, Ireland and Australia.
- Expertise in running, chairing and organising international scientific conferences.

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## EDUCATION

**Ph. D. (Mechanical Engineering)**, 2004, University of Manchester, Manchester, M13 9PL, UK.

**B.Sc. (Mechanical Engineering)** (5-year degree, Ranked first), 1992-1997, The Faculty of Mechanical and Electrical Engineering (power and thermal engineering division.), Damascus University.

## TEACHING CREDENTIALS

**P. G. Cert. in Higher Education**, 2010, Brunel University, Uxbridge, UB8 3PH, UK

**Senior Fellow of the Higher Education Academy (SFHEA)**, 2017, UK

## ACTIVE PROFESSIONAL CREDENTIALS

**Engineering Council (UK)**: Registered Chartered Engineer (CEng). Reg. No. 579867

**Institution of Mechanical Engineers (UK)**: Chartered Member & Fellow (CEng FIMechE) Reg. No. 80109076

**Institute of Refrigeration (UK)**: Member (M.Inst.R) Reg. No. 5207

**Engineers Ireland (Ireland)**: Chartered Engineer & Fellow (CEng FIEI) Reg. No. 063790

**Engineers Ireland (Ireland)**: International Professional Engineer (IntPE) Reg. No. 063790

**Senior Fellow of the Higher Education Academy (SFHEA)**, UK Reg. No. PR076254.

## ACTIVE PROFESSIONAL ROLES

**Chairman of the IMechE Greater London Region NW Area Committee**

## EMPLOYMENT RECORD

### EMPLOYMENT

#### ***Professor - 2018 to date***

Department of Mechanical Engineering, Institute of Energy Futures, College of Engineering, Design and Physical Sciences, Brunel University, Uxbridge, UB8 3PH, UK.

#### ***Reader (Associate Professor) 2016 to 2018***

Department of Mechanical Engineering, Institute of Energy Futures, College of Engineering, Design and Physical Sciences, Brunel University, Uxbridge, UB8 3PH, UK.

#### ***Senior Lecturer 2014 – 2016***

Department of Mechanical Engineering, Institute of Energy Futures, College of Engineering, Design and Physical Sciences, Brunel University, Uxbridge, UB8 3PH, UK.

#### ***Executive Technical Director 2012 – 2014***

Econotherm (UK) Ltd, Unit F4, Bridgend, CF31 3YY, UK.

#### ***Consultant 2011 – 2012***

- Various projects for the International Atomic Energy Agency (IAEA), **Austria** working on novel designs for water management and energy systems through a CRP programme.
- Design and optimisation of HVAC systems for S&P Coil Products limited, **UK**.
- Design and optimisation of industrial waste heat recovery systems, Econotherm (UK) Limited, **UK**
- Design and optimisation of Desalination and solar systems, **Syria**.

#### ***Lecturer & MSc Course Director 2008 – 2011***

Mechanical Engineering, School of Engineering and Design, Brunel University, Uxbridge, UB8 3PH, UK

#### ***Senior Research Fellow 2007 – 2008***

Department of Mechanical Engineering, Trinity College Dublin, Dublin, **Ireland**

#### ***Research Fellow 2005 – 2007***

Department of Mechanical Engineering, Trinity College Dublin, Dublin, **Ireland**

#### ***Researcher 2004 – 2005***

School of Mechanical, Aerospace and Civil Engineering, University of Manchester, Manchester, M13 9PL, **UK**

### HONORARY POSITIONS

***Invited Professor and Honorary Consul 2014 to date,***

Wroclaw University of Science and Technology, Wroclaw, **Poland**.

**Industrial Adviser 2013 – 2014**

University of South Wales, Pontypridd, Cardiff, **UK**

**Invited Professor 2008 to date**

Institut Catholique d'Arts et Métiers (ICAM), Lille, Cedex, **France**, (Département Energétique)

**Director, Thermal Division 2006 – 2008**

SOLAS Technology, Dublin, **Ireland**

## AWARDS

The [IMEchE Energy, Environment and Sustainability Group Prize](#). Awarded by the Institution of Mechanical Engineers (IMEchE), 2017, **UK**.

[Brunel University London's Research Supervisor of the Year](#). Awarded by Brunel University on the 2<sup>nd</sup> of July 2018.

**SIRACH Start-up fund (2009)**, Awarded by the Institute of Refrigeration, **UK**.

**The INuce Prize (2002)**, Awarded by the Institution of British Nuclear Engineers, **UK**.

## RESEARCH ACTIVITIES

### RESEARCH FUNDING

Total to September 2017: **£6.5M (£3.63M as a PI)**

Project	Funding	Project Title	Duration	Role
<b>EU Horizon 2020</b>	€11.5M (Brunel's income: €815k)	Prefabrication, Recyclability and Modularity for cost reductions in Smart BIPV systems	2018-2023	Principal Investigator & Scientific Coordinator
<b>Innovate UK</b>	£107k	Conceptual Feasibility of a Heat Pipe as a Structural and Thermal Member in an Automotive Battery Pack Design	2018-2019	Principal Investigator
<b>Innovate UK</b>	£85k	<b>IMproving Power bAttery Cooling Technologies (IMPACT)</b>	2018-2019	Principal Investigator
<b>EU Horizon 2020</b>	€4.6M (Brunel's income: €700k)	<a href="#">Heat Pipe Technology for Thermal Energy Recovery in Industrial Applications (ETEKINA)</a>	2017-2021	Principal Investigator & Scientific Coordinator
<b>Innovate UK</b>	93k	Room Temperature Passive Heat Recovery with Heat Pipe	2017-2018	Principal Investigator
<b>Air Products &amp; Chemicals</b>	£66k	The Hybrids Heat Pipe Cryofreezer	2017-2020	Principal Investigator
<b>Manik Ventures Limited</b>	£32k	<a href="#">Design Optimisation of the HERU Waste treatment system</a>	2017-2018	Principal Investigator
<b>EU Horizon 2020</b>	€4M (Brunel's income: €540k)	<a href="#">Design for Resource and Energy efficiency in cerAMic kilns (DREAM)</a>	2016-2019	Principal Investigator
<b>Knowledge Transfer Programme (KTP)</b>	£162k	Controllable bidirectional heat recovery device	2016-2018	Principal Investigator
<b>Innovate UK</b>	£120k	<a href="#">Erva Mate Drying</a>	2016-2019	Principal Investigator
<b>EPSRC</b>	£858k	<a href="#">Optimising Energy Management in Industry - 'OPTEMIN'</a>	2016-2019	Co-Investigator
<b>EPSRC</b>	£406k	<a href="#">Low Temperature Waste Heat to Power</a>	2016-2020	Co-

		<u>Generation</u>		Investigator
<b>EU Horizon 2020</b>	€4M (Brunel's income: €795.7k)	<a href="#">Industrial Thermal Energy Recovery Conversion and Management (i-Therm)</a>	2015-2019	Co- Investigator
<b>Manik Ventures Limited</b>	£32k	<a href="#">The HERU waste treatment chamber</a>	2016-2017	Principal Investigator
<b>Royal Academy of Engineers</b>	£30k	<a href="#">Visiting professorship</a>	2016-2019	Principal Investigator
<b>Air Products PLC</b>	£96.2k	<a href="#">Cryogenic freezing and storage of materials using cryogenically cooled eutectic heat exchange</a>	2015-2018	Principal Investigator
<b>Air Products PLC</b>	£53.8k	<a href="#">Thermo storage of biomedical materials and products under low temperature cryogenic conditions</a>	2015-2018	Principal Investigator
<b>Innovate UK</b>	£165k	Active refrigeration shelf with thermal storage	2015-2016	Principal Investigator
<b>Manik Ventures Limited</b>	£26k	<a href="#">Thermal design characterization of the HERU waste treatment chamber</a>	2015-2016	Principal Investigator
<b>Flint Engineering Limited</b>	£45k	Refrigerated Heat-pipe Shelf	2015	Principal Investigator
<b>The department for Energy and Climate Change, DECC</b>	£675k	<a href="#">The heat pipe solar roof, contract number EEF371</a>	2012-2014	Principal Investigator
<b>Royal Dutch Shell</b>	£100k	Solar roof using the flat heat pipe technology	2012	Principal Investigator
<b>Norsun Limited – Norway (with Econotherm)</b>	£212k	Speeding up silicon crystal growth through targeted cooling.	2014	Principal Investigator
<b>Spirax Sarco Italy</b>	£40k	R&D projects in steam generators innovative designs	2013-2014	Principal Investigator
<b>GoodTech limited – Norway (with Econotherm)</b>	£190k	Heat pipe based cell wall cooling system for aluminium smelting plants.	2012-2014	Principal Investigator
<b>IAEA CRP Project</b>	€25k	Heat pipe based systems for safer nuclear desalination systems	2010-2013	Principal Investigator
<b>Knowledge Transfer Programme (KTP)</b>	£124k	Water heat pipes with application in energy efficient HVAC systems	2010-2012	Principal Investigator
<b>Department for Environment, Food and rural affairs (DEFRA)</b>	£396k	Integrated thermal energy storage in food refrigeration equipment for energy and CO <sub>2</sub> emissions reduction	2010-2013	Co- investigator
<b>EPSRC</b>	£322k	Optimising thermal energy recovery, utilisation and management in the process industries-OPTITHERM	2009-2012	Co- investigator
<b>Enterprise Ireland: Commercialisation Fund, Technology Development</b>	€351,248	Variable Conductance Heat Pipe for Space Heating	2007-2009	Co- investigator
<b>SOLAS Technology:</b>	€80,000	Heat transfer devices for domestic and electronics thermal management	2006- 2007	Principal Investigator

<b>Industry Funded Research</b>
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**CONSULTANCIES**

Company	Project	Year
<b>Altek Europe Ltd</b> , Lakeside House, Burley Close, Chesterfield, Derbyshire S40 2UB, UK	Energy efficiency in Aluminium recycling	2018-2019
<b>Spirax Sarco PLC</b> , Runnings Road, Kingsditch Industrial Estate, Cheltenham, Gloucester, GL51 9NQ, UK	The heat tracer	2015
<b>Econotherm (UK) ltd</b>	Heat pipe based heat exchangers, design and optimisation (Consultancy agreement with Brunel)	2014-2018
Spirax Sarco PLC, Runnings Road, Kingsditch Industrial Estate, Cheltenham, Gloucester, GL51 9NQ, UK	The micro steam condenser	2014
Spirax Sarco PLC Spirax-Sarco Srl - via per Cinisello, 18 - 20834 Nova Milanese (MB), Italy	The micro steam generator	2014
Consultancies for companies in the <b>UK, Ireland, Norway, Italy, Austria, Spain, Malaysia, India, New Zealand, Canada,</b> and the <b>US</b>	Steam generators/condenser, waste heat recovery solutions and heat pipe based heat exchangers	2012- 2014
S & P Coils Products Limited, UK	A bidirectional wickless heat pipe heat exchanger for efficient AHUs	2012
S & P Coils Products Limited, UK	A controllable heat pipe heat exchanger	2010-2012
S & P Coils Products Limited, UK	Research and Development work in the area of energy efficient heat pipe based systems	2007-2010
<i>The Polish Bakery Ltd</i> , London, UK	Design and manufacture of novel heat exchanger system for application in industrial bakery ventilation systems	2009-2010
<i>International Atomic Energy Agency</i> , Vienna, Austria	Consultant to the IAEA. "Creating the IAEA Toolkit on Nuclear Desalination"	2009
<i>International Atomic Energy Agency</i> , Vienna, Austria	Consultant to the IAEA. "Upgrading the Desalination Economic Evaluation Program (DEEP) software package to Version 3.2"	2008
<i>International Atomic Energy Agency</i> , Vienna, Austria	Consultant to the IAEA. "Heat Pipes: Their Concept & Potential Applications in Water Desalination Systems"	2008
<i>LUMAS Technology LTD</i> , Cork, Ireland	Thermal management of high-Power density Ultra Violate LEDs placed in a confined space  <u>System Designed, Built and Tested</u>	2007
<i>SOLAS Technology Ltd</i> , Dublin, Ireland	Two-phase heat transfer solution for data centres thermal management  <u>System Designed, and approved</u>	2007
<i>SOLAS Technology LTD</i> , Dublin, Ireland	R&D in Novel Data Centre Cooling Solutions	2007
<i>SOLAS Technology Ltd</i> , Dublin, Ireland	The SOLAS HP Thermal Rail  <u>System Designed, Built and Tested</u>	2006-2007

## PATENTS

### Filed/published:

- [1]. Jouhara, H., (2018), “Thermal Transfer Loop”, Status: **Filed**. UK Patent. Application Number: GB1809208.0.
- [2]. Jouhara, H., Spencer, N. (2017) , “*Pyrolysis Chamber and Method of Disposal of Refuse*”, Status: **Filed**. International Patent no. **PCT/GB2017/050031**. Link: <https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2017137716>
- [3]. Jouhara, H. , Spencer, N. (2017), “*Disposal of Refuse*”, Status: **Filed**. International Patent no. **PCT/GB2017/050031**.
- [4]. Jouhara, H. , Spencer, N. (2017), “*Water Screen Filter WSF*”, Status: **Filed**. National Patent no. **GB1706489.0**.
- [5]. Jouhara, H. , Spencer, N. (2017), “*Multi purpose piston*”, Status: **Filed**. National Patent no. **GB1706486.6**.
- [6]. Jouhara, H. , Spencer, N. and Gibbon, M. (2016), “*A pyrolysis chamber for treating domestic refuse and dwelling equipped with such a chamber*”, Status: **Published**. International Patent no. **WO/2015/104400**. Link: <https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2015104400>
- [7]. Jouhara, H. and Tassou, S. (2016), “*Heat Transfer Apparatus*”. International Patent no **WO2016102937**. Status: **Granted**. Link: <https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2016102937>
- [8]. Jouhara, H. and Lester, S. (2015), “*Heat Transfer Apparatus*”, International Patent no **WO2015193683**. Status: **Granted**. Link: <https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2015193683>
- [9]. Jouhara, H. and Meskimmon, R. (2011), “*A method and an apparatus for constructing a heat pipe*”. International Patent no. **WO2011124890**. Link: <https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2011124890>
- [10]. Jouhara, H. (2014), “*Radiator*”, Status: National phase. National Patent no **GB1410933.4**. Link: <https://www.ipo.gov.uk/p-ipsum/Case/ApplicationNumber/GB1410933.4>
- [11]. Jouhara, H. and Robinson, A. (2009), “*Heat exchanger*”. Status: **Filed**. International Patent no WO/2010/034726. Link: <https://patentscope.wipo.int/search/en/detail.jsf?docId=WO2010034726>

## PUBLICATIONS

### Book chapters

- [12]. Jouhara, H. (2018) 'Heat Pipes', in Kucuk, H. (ed.) [Comprehensive Energy Systems](#). Elsevier, Vol 4, PP 70-97. <https://doi.org/10.1016/B978-0-12-809597-3.00403-X>

### BOOKS

- [1]. Hussam Jouhara & Savvas Tassou, (2015), “Building Air Conditioning”, Paperback, Published by **Brunel University London**.
- [2]. Jouhara, H., (2014), “New Technologies for Seawater Desalination using Nuclear Energy”, published by the **International Atomic Energy Agency (IAEA)**, Vienna, Austria.
- [3]. Paul Tymkow, Savvas Tassou Maria Kolokotroni, Hussam Jouhara, (2013), “[Building Services Design for Energy Efficient Buildings](#)”, **Spon Press, Taylor & Francis Group**.
- [4]. Ian Wood, Hussam Jouhara, Maria Kolokotroni (2009), Management for Building Services Engineer, Paperback, Published by **Brunel University London**.

### INVITED KEYNOTES

- [1]. Jouhara, H. (2018) “Heat pipe based systems in Brazil”, Invited Keynote, **11th World Bioenergy Symposium - WBS 2018 - COPPE/UFRJ, Rio De Janiro, Brazil**, 16-22 June 2018.
- [2]. Jouhara, H. (2018) “Energy Efficiency in Process Industries”, Keynote paper, **11<sup>th</sup> International Conference on Sustainable Energy and Environmental Protection**, 8<sup>th</sup>-12<sup>th</sup> of May, Glasgow, UK.
- [3]. Jouhara, H., (2016), “Innovative Heat Pipe based Systems for Renewable and Industrial Applications”. **HEXAG**, 15<sup>th</sup> May 2018, Newcastle, UK.
- [4]. Jouhara, H., (2017), Heat pipe based waste treatment system for biomass production from municipal waste. **2<sup>nd</sup> Global Summit and Expo on Biomass and Bio-Energy**, 12-13 October 2017, London, UK.

- [5]. Jouhara, H., (2017), Opening Keynote, 1<sup>st</sup> International Conference on Advances in Energy Systems and Environmental Engineering ASEE17, 2-5 July, 2017, Wroclaw, Poland.
- [6]. Jouhara, H., (2017), Energy from Waste. Plenary Keynote, 1<sup>st</sup> International Conference on Advances in Energy Systems and Environmental Engineering ASEE17, 2-5 July, 2017, Wroclaw, Poland.
- [7]. Jouhara, H., (2017), Home Energy Recovery Unit. Keynote paper, Energy from Waste Conference, Royal College of Physicians, London, UK.
- [8]. Jouhara, H., (2017), Energy from Waste. Opening Plenary Keynote, International Conference on Advances in Energy Systems and Environmental Engineering, Wroclaw, Poland.
- [9]. Jouhara, H., (2016), Heat Pipe based steam generators. HEXAG, 20<sup>th</sup> June 2016, Newcastle, UK.
- [10]. Jouhara, H., (2015), Heat Pipe heat exchangers for efficient industrial waste heat recovery. Keynote paper, HEXAG, 22<sup>th</sup> June 2015, Newcastle, UK.
- [11]. Jouhara, H., (2014), Innovative heat exchangers for efficient industrial waste heat recovery solutions, Keynote paper, XIV **International Conference Air, Heat & Energy 2014**, 26<sup>th</sup> – 29<sup>th</sup> June 2014, Karkonosze, Poland
- [12]. Jouhara, H. (2014), “Heat pipe based solutions for challenging industrial waste heat recovery scenarios”, **Heat powered cycles conference**, organized by Spirax Sarco (UK), 21<sup>st</sup> May 2014. Charlton House, Cheltenham, Gloucestershire, UK
- [13]. Jouhara, H. (2013) “Heat pipe based cooling solutions for data centres”, Keynote paper, **6<sup>th</sup> International Conference on Sustainable Energy and Environmental Protection**, 20<sup>th</sup>-23<sup>rd</sup> of August, 2013. Maribor, Slovenia.
- [14]. Jouhara, H., (2012), Advances in Heat Exchangers for Power Plants, **The international Atomic Energy Agency’s Meeting on the Management for Efficient Water Use and Consumption in Nuclear Power Plants**, 12<sup>th</sup> – 16<sup>th</sup> November 2012, Vienna, Austria
- [15]. Jouhara, H. (2009), “Heat pipes and their applications to HVAC systems”, **Heat powered cycles conference**, organized by the SIRACH network, Brunel University, 2009.

#### **INVITED EDITORIALS**

- [1]. Jouhara, H. (2018) “*Energy Efficient HVAC Systems*”, Special Issue in the Energy and Buildings Journal – Elsevier,
- [2]. Jouhara, H. (2018) “*Energy Efficient Thermal Systems and Processes*”, Special Issue in the Thermal Science and Engineering Progress Journal – Elsevier
- [3]. Jouhara, H. (2017) “*Industrial Waste Heat Recovery*”, Special Issue in the Energy Journal – Elsevier
- [4]. Jouhara, H. (2011) “*Using social networking tools for distant learning engineering students*”, Express Magazine, Brunel University publications, Issue 11.
- [5]. Jouhara, H. (2010) “Heat exchangers in nuclear power plants”, UK Power & Process Engineering, Issue 1

#### **THESES**

- [1]. Jouhara, H. (2010), “Online social networks as an e-learning tool”, **PGCert in Higher Education Thesis, Brunel University, UK.**
- [2]. Jouhara, H. (2004), “Film boiling heat transfer on spherical, cylindrical and plane specimens”, **Ph.D. Thesis, University of Manchester, UK.**

#### **JOURNAL PAPERS**

- [1]. Jouhara, H. and Olabi, A. (2018) 'Industrial waste heat recovery'. *Energy*, 160. pp. 1 - 2. ISSN: 0360-5442
- [2]. Delpech, B., Milani, M., Montorsi, L., Boscardin, D., Chauhan, A., Almahmoud, S., . . . Jouhara, H. (2018). Energy efficiency enhancement and waste heat recovery in industrial processes by means of the Heat Pipe technology: case of the ceramic industry. *Energy*. doi:10.1016/j.energy.2018.06.041
- [3]. Jouhara, H., & Meskimmon, R. (2018). An investigation into the use of water as a working fluid in wraparound loop heat pipe heat exchanger for applications in energy efficient HVAC systems. *Energy*, 156, 597-605. doi:10.1016/j.energy.2018.05.134



- [4]. Hoslett, J., Massara, T. M., Malamis, S., Ahmad, D., van den Boogaert, I., Katsou, E., . . . Jouhara, H. (2018). Surface water filtration using granular media and membranes: A review. *Science of the Total Environment*, 639, 1268-1282. doi:10.1016/j.scitotenv.2018.05.247
- [5]. Obeid, O., Alfano, G., Bahai, H., & Jouhara, H. (2018). Experimental and numerical thermo-mechanical analysis of welding in a lined pipe. *Journal of Manufacturing Processes*, 32, 857-872. doi:10.1016/j.jmapro.2018.04.009
- [6]. Obeid, O., Alfano, G., Bahai, H., & Jouhara, H. (2018). Mechanical response of a lined pipe under dynamic impact. *Engineering Failure Analysis*, 88, 35-53. doi:10.1016/j.engfailanal.2018.02.013
- [7]. Jouhara, H., Ahmad, D., Czajczyńska, D., Ghazal, H., Anguilano, L., Reynolds, A., . . . Spencer, N. (2018). Experimental investigation on the chemical characterisation of pyrolytic products of discarded food at temperatures up to 300°C. **Thermal Science and Engineering Progress**. doi:[10.1016/j.tsep.2018.02.010](https://doi.org/10.1016/j.tsep.2018.02.010)
- [8]. Bianchi, G., Tassou, S., & Jouhara, H. (n.d.) (2018) Numerical modelling of a two-phase twin-screw expander for Trilateral Flash Cycle applications. **International Journal of Refrigeration**. doi:[10.1016/j.ijrefrig.2018.02.001](https://doi.org/10.1016/j.ijrefrig.2018.02.001)
- [9]. Sayegh, M. A., Jadwiszczak, P., Axcell, B. P., Niemierka, E., Bryś, K., & Jouhara, H. (2018). Heat pump placement, connection and operational modes in European district heating. *Energy and Buildings*, 166, 122-144. doi:[10.1016/j.enbuild.2018.02.006](https://doi.org/10.1016/j.enbuild.2018.02.006)
- [10]. Hussam Jouhara, Darem Ahmad, Inge van den Boogaert, Evina Katsou, Stefaan Simons, Nik Spencer, (2018). Pyrolysis of domestic based feedstock at temperatures up to 300°C, **Thermal Science and Engineering Progress**, Vol. 5, 117-143. <https://doi.org/10.1016/j.tsep.2017.11.007>.
- [11]. Poškas, R., Sirvydas, A., Poškas, P.; Jouhara, H., Striūgas, N., Pedišius, N., Valinčius, V. (2018). Investigation of warm gas clean-up of biofuel flue and producer gas using electrostatic precipitator. *Energy*, Vol 143, 943-949. <https://doi.org/10.1016/j.energy.2017.11.120>.
- [12]. Obeid, O., Alfano, G., Bahai, H., & Jouhara, H. (2017). A parametric study of thermal and residual stress fields in lined pipe welding. *Thermal Science and Engineering Progress*, 4, 205-218. doi:[10.1016/j.tsep.2017.10.011](https://doi.org/10.1016/j.tsep.2017.10.011)
- [13]. Obeid, O., Alfano, G., Bahai, H., & Jouhara, H. (2018). Numerical simulation of thermal and residual stress fields induced by lined pipe welding. **Thermal Science and Engineering Progress**. Vol. 5, Pages 1-14.
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- 1) The 5<sup>th</sup> International Conference on Material Science & Smart Materials, 7-10 August 2018, Glasgow, UK. (**Organising Committee**).
- 2) The 9<sup>th</sup> International Conference on Sustainable, Energy & Environmental Protection (SEEP2018), 2018, Glasgow. (**Organising, Steering and scientific committees member**)
- 3) 1<sup>st</sup> International Conference on Advances in Energy Systems and Environmental Engineering ASEE17 – **Organiser and Chairman**.
- 4) The 5<sup>th</sup> International Conference on Sustainable Solid Waste Management, Athens, 21–24 June 2017, Greece (**Scientific committee member**)
- 5) The 8<sup>th</sup> International Conference on Sustainable, Energy & Environmental Protection (SEEP2017), 2017, Slovenia. (**Steering committee and scientific committee member**)
- 6) The 9<sup>th</sup> International Conference on Sustainable, Energy & Environmental Protection (SEEP2016), 2016, Turkey. (**Steering committee and scientific committee member**)

- 7) The 1<sup>st</sup> International Conference on Sustainable Energy and resource use in Food chains 'ICSEF 2017'- Brunel University London, 28-30 June 2016 (**member of the organising committee**).
- 8) The 8th International Conference on Sustainable, Energy & Environmental Protection (SEEP2015), **2015, Glasgow, UK. (Steering committee and scientific committee member)**
- 9) The 7th International Conference on Sustainable, Energy & Environmental Protection (SEEP2014), **2014, Dubai, UAE. (Steering committee and scientific committee member)**
- 10) The XIV **International Conference Air, Heat & Energy 2014**, 26<sup>th</sup> – 29<sup>th</sup> June 2014, **Karkonosze, Poland. (Opening keynote and scientific committee member)**
- 11) The 6th International Conference on Sustainable, Energy & Environmental Protection (SEEP2013), **2013, Maribor - Slovenia. (Steering committee and scientific committee member)**
- 12) The 5th International Conference on Sustainable, Energy & Environmental Protection (SEEP2012), 2012, **Dublin-Ireland. (Organising committee and steering/scientific committee member)**
- 13) The 4th International Conference on Sustainable, Energy & Environmental Protection (SEEP2010), 2010, **Italy. (Steering committee and scientific committee member)**
- 14) Workshop & International Conference on Smart Materials September 22-24, 2010 **Dublin-Ireland (Organising committee and scientific committee member)**
- 15) The 3rd International Conference on Sustainable, Energy & Environmental Protection (SEEP2009), 12th of August 2009, Dublin, **Ireland. (member of the scientific committee)**
- 16) The 9th UK National Heat Transfer Conference, Manchester, UK. (member of the organising committee).

### EXTERNAL PhD EXAMINER APPOINTMENTS

- 1) External examiner of Mr Geir Hansen's PhD viva –2016 – Norwegian University of Science and Technology (NTNU). **Noway**
- 2) External examiner of Mr Itimad Azzawi's PhD viva –2016 – The University of Leeds, **UK**
- 3) External examiner of Mr Ahmed Al Makky's PhD viva –2016 –University of West Scotland. **UK**
- 4) External examiner of Mr Imad Taher Ali's PhD viva –2015 – MACE, University of Manchester. **UK**
- 5) External examiner of Mr Alan O'Donovan's PhD viva –2015 - Mechanical, Aeronautical and Biomedical Engineering Department, University of Limerick, **Ireland**.
- 6) External examiner of Mr H. Allam's thesis –2014- Faculty of Architecture, Design and Planning, University of Sydney, **Australia**.
- 7) External examiner of Mr Andrew Clarke's PhD Thesis –2009 - Dublin City University, **Ireland**.

### ACADEMIC ACTIVITIES

#### 2014 to date:

- A **supervisor** of 8 **PhD** students (7 funded by my funded projects and 1 self-funded).
- **3 PhD completions:** Topics:
  - CFD modelling of heat transfer modes in heat pipes.
  - Heat pipe based heat exchangers for waste heat recovery applications
  - Numerical and experimental investigation of a multi-pass thermosyphon-based heat exchanger
- A **Line manager** of 6 member of staff (employed to work on my funded projects)
- Supervised 21 **MSc** students' projects
- Internal examiner of 4 PhD students.
- **Module leader** of ME5520, ME5046, ME5513, ME3606.
- **Chair** of the Industrial advisory panel
- **Member** of the following Brunel university's committees:
  - *Researcher Development Task & Finish Group*
  - *Postgraduate Research Degrees Committee*
- **Lecturing**
  - ME3306- **HVAC Systems**, (IMEchE, through accreditation of Mechanical Engineering and Mechanical Engineering with Building Services MEng/BEng degree programmes). *Level-3 undergraduate mechanical engineering students.*
  - ME5508- **Building heat transfer and air conditioning**, (Energy Institute, CIBSE, through accreditation of the Building Services Engineering programme). *Postgraduate MSc Course.*



- ME5513- **Building services design and management**, (Energy Institute, CIBSE, through accreditation of the Building Services Engineering programme). *Postgraduate MSc Course*.
- ME5520/ME5046- **Sustainable built environment**, (Energy Institute, CIBSE, through accreditation of the Building Services Engineering programme). *L5*.
- ME5512- **Fluid services and heat transfer equipment**, (Energy Institute, CIBSE, through accreditation of the Building Services Engineering programme). *Postgraduate MSc Course*.
- **Graduation Project supervisor** for 8 Mechanical Engineering students.

*Since 2011-2017:*

- **A co-supervisor** of 2 **PhD** student in **Brunel University London** in the area of heat pipes and heat exchangers, **UK**
- **An industrial supervisor** of a **PhD** student from the **University of South Wales**. Topic: CFD modelling and design optimisation of multi-pass heat pipe heat exchangers, **UK**
- **A co-supervisor** of two **PhD** students from the Wroclaw University of Technology, Topic: Distant heating and solar collectors. Wroclaw, **Poland**.
- **External examiner** for a **PhD** students from **Sydney University, Australia**
- **Graduation Projects' supervisor** for 14 Mechanical Engineering students (5-year degree) in the **Institut Catholique d'Arts et Métiers, France**.

**In Brunel University, United Kingdom (2008 to 2017)**

*Administration & Management*

- **Director of Distance Learning** for the Department of Mechanical Engineering
- **Course Director** of the Building Services Engineering with Sustainable Energy (BSESE) MSc Programme
- **Course Director**, of the Building Services Engineering (BSE) MSc Programme
- **Ph. D. Supervisor** of 2 PhD students in the area of two-phase heat transfer and heat exchangers
- **External Examiner** for 1 PhD and 2 MSc (by research) candidates
- **Internal Examiner** for 1 EngD candidate
- **M. Sc. Project supervisor** for 18 Advanced Mechanical Engineering and Building Services Engineering MSc students
- **Graduation Project supervisor** for 15 Mechanical Engineering MEng & BEng students
- **Module Leader**, 2008 to 2010: Building Service Design and Management (ME5513)
- **Personal tutor** for 12 level 1 and 2 Mechanical Engineering students

*Lecturing*

- ME3306- **HVAC Systems**, (IMechE, through accreditation of Mechanical Engineering and Mechanical Engineering with Building Services MEng/BEng degree programmes). *Level-3 undergraduate mechanical engineering students*.
- ME1304- **Communication, Management and Practical Skills**, (IMechE, through accreditation of Mechanical Engineering and Mechanical Engineering with Aero/Auto/Building degree programmes, Aerospace Eng, Motorsport Eng, Aviation Eng programmes). *Level 1 undergraduate mechanical engineering students*.
- ME5508- **Building heat transfer and air conditioning**, (Energy Institute, CIBSE, through accreditation of the Building Services Engineering programme). *Postgraduate MSc Course*.
- ME5513- **Building services design and management**, (Energy Institute, CIBSE, through accreditation of the Building Services Engineering programme). *Postgraduate MSc Course*.

- ME5520- **Sustainable built environment**, (Energy Institute, CIBSE, through accreditation of the Building Services Engineering programme). *Postgraduate MSc Course*.
- ME5512- **Fluid services and heat transfer equipment**, (Energy Institute, CIBSE, through accreditation of the Building Services Engineering programme). *Postgraduate MSc Course*.

#### In the Institut Catholique d'Arts et Métiers, France (2008 to 2014)

- **Graduation Project supervisor** for 16 Mechanical Engineering students (5-year degree)
- “**Heat Exchangers**” module for the final year mechanical engineering students.

#### In Trinity College Dublin, Ireland (2005-2008)

##### *Administration & Management*

- Supervised 5 MSc students (by research).
- Co-Supervised an Italian research MSc Student (in collaboration with the University of Pisa, **Italy**).

##### *Lecturing*

- Bio-Heat Transfer, level 3 Bio-Engineering students. Department of Mechanical & Manufacturing Engineering.
- Heat Transfer, level 3 Mechanical Engineering students. Department of Mechanical & Manufacturing Engineering.
- Applied Mathematics, level 1 engineering students. School of Engineering.

#### University of Manchester, United Kingdom (2005)

##### *Administration & Management*

- **Module Leader**, 2005: Powerful bubbles PPL programme for 2<sup>nd</sup> level Mechanical Engineering Students

##### *Lecturing*

- Thermal-Fluids, 1<sup>st</sup> and 2<sup>nd</sup> year Mechanical and Aerodynamics students.
- Problem Based Learning (PBL) course: Powerful Bubbles: analysis of hydraulic systems and cavitation damage in hydro-machinery. For 2<sup>nd</sup> year Mechanical Engineering students.
- Heat Transfer. 2<sup>nd</sup> year Mechanical and Aerodynamics students.