

AMIR KESHMIRI

PERSONAL AND CONTACT DETAILS

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EDUCATION

- **Executive Degree in ‘Entrepreneurship and Innovation’** – London School of Economics and Political Science (LSE) *2016 – 2016*
- **PGC in ‘Academic Practice’** – Centre for Learning and Teaching – Manchester Metropolitan University (part-time) – awarded ‘Distinction’ in Academic Portfolio *2011 – 2013*
- **PhD in ‘Computational Fluid Dynamics’** – School of Mechanical, Aerospace and Civil Engineering (MACE) – University of Manchester *2006 – 2010*
[PhD Thesis: ‘Thermal-Hydraulic Analysis of Gas-cooled Reactor Core Flows’]
- **MSc in ‘Thermal Power and Fluids Engineering’** – School of Mechanical, Aerospace & Civil Engineering (MACE) – University of Manchester – awarded ‘Distinction’ *2005 – 2006*
[MSc Dissertation: ‘Modelling of Conjugate Heat Transfer in Near-Wall Turbulence’]
- **BEng (Hons) in ‘Mechanical Engineering’** – Department of Mechanical, Aerospace & Manufacturing Engineering – University of Manchester Institute of Science and Technology (UMIST) *2002 – 2005*
[Final Year Dissertation: ‘The Automatic Optimisation of Cutting Conditions in Turning’]

CURRENT EMPLOYMENT

- **Head of Business Engagement (Innovative Healthcare)** – Faculty of Science & Engineering – University of Manchester *Nov 2019 – present*
- **Reader/Associate Professor** in Computational Fluid Dynamics – Dep. of Mechanical, Aerospace and Civil Engineering (MACE) – University of Manchester *Jul 2016 – present*
- **Professor of Academic Surgery** – Wythenshawe Hospital, UK *Jun 2019 – present*

ENTERPRISE ACTIVITIES

- **Co-founder/Technical Director** – Thermocill Limited (www.thermocill.com) *Jun 2020 – present*
- **Co-founder** – Nanoparticle Synthesis (www.nano-syn.tech) *Jun 2019 – present*
- **Co-founder** – CASP Technologies Limited (www.thecasp.com) *Mar 2019 – present*
- **Founder** – Helical Ridge Graft (www.HeliRidgeGraft.com) *May 2015 – present*
- **Founder** – Couette Limited (www.couette.co.uk) *Jan 2015 – present*
- **Founder/Director** – ManchesterCFD Group (www.ManchesterCFD.co.uk) *Mar 2012 – present*

PREVIOUS EMPLOYMENT/ROLES

- **Director of Business Engagement** – Department of MACE – University of Manchester (<http://www.mace.manchester.ac.uk/industry/>) Oct 2016 – Nov 2019
- **Lecturer/Senior Lecturer** in Computational Fluid Dynamics – School of Engineering – Manchester Metropolitan University Jul 2011 – Jul 2016
- **Deputy Director** of the ‘Engineering and Materials Research Centre’ – Manchester Metropolitan University – www.mmu.ac.uk/research/our-research/science-and-engineering/ Sep 2015 – Jul 2016
- **CFD Lead Engineer** – Advanced Design & Sustainability Group – AECOM Jan 2011 – Jul 2011
- **EPSRC Research Fellow** – School of MACE – University of Manchester Feb 2010 – Dec 2010
- **Member of the Code_Saturne Development Team** – EdF R&D (part-time) Sep 2007 – Dec 2009
- **Teaching Assistant** – University of Manchester (part-time) Sep 2006 – Jun 2010

LEADERSHIP EXPERIENCE

- **Head of Business Engagement – Faculty of Sci&Eng – Uni of Manchester** Nov 2019 – present
After successfully serving as the Director of BE within MACE, I was appointed as one of the Heads of BE for the whole Faculty of S&E. This is a strategic leadership role, in which, I develop and implement the Faculty/University strategy for business engagement. My work is aligned with the university priorities and KPIs to ensure that FSE/UoM strategies in Innovative Healthcare are embedded in our industrial activities. Since my appointment, through working closely with funding organisations, research centres, companies, NHS trusts and hospitals, etc, I have achieving several noteworthy accomplishments including developing a new Faculty ‘BE&I Strategic Delivery Plan’, contributing to the recently formed ‘Faculty Strategic Oversight Group’, contributing to several research bids by brining onboard industrial partners, helping several academics with preparing/securing industry-focused grants (KTP, IAA, prosperity, CDT etc), organising various internal/external events, launching a new website for BE, helping academics with obtaining CEng/Fellow status, etc
- **Director of Business Engagement – Dep. of MACE – Uni of Manchester** Oct 2016 – Nov 2019
As the first official Director of BE in MACE, I worked directly with the school leadership to define the role and terms of reference and I established the strategic BE priorities to align with the FSE/UoM vision. In this role, I managed all consultancy/business engagement enquiries and enhance industry-led funding within the School through liaising with companies and supporting research grants e.g Prosperity, CDT, IAA, KTP, etc. I was also a member of MACE Senior Leadership Team and worked with different teams across UoM. An example of my work included raising the highest donation in the history of MACE (£240k) in 2018 and led the recruitment process of a new Research Fellow within MACE. In this role, I launched the ‘MACE Industry Hub’ which was a dedicated webpage for industrial visitors and led to an increase in the number of industrial contacts. In addition, I provided regular mentoring, training and sponsorship to MACE academics and research staff to obtain professional registration with Professional Engineering Institutes.
- **Deputy Director of ‘Engineering and Materials Research Centre’ – MMU** Oct 2015 – Jul 2016
 - Deputy Director of one of the largest research centres at MMU with over 70 academic staff members and several Post-Docs and PhD students.
 - Responsible for facilitating and allocating resources to members, organising biweekly research seminars, supporting early-career researchers and representing the centre externally.
 - Budget holder of the Centre’s research budget (e.g. approx. £1.2 million in 2015-2016).
- **Founder/Director of ‘Advanced Design and Simulation’ Group – MMU** May 2013 – Jul 2016
 - Founder and director of a research group which consisted of over 20 academic staff and several postgraduate students specialising in different aspects of design, modelling and simulation.
 - Coordinating the research and enterprise activities of the group and reviewing all external bids.

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

- **Associate Editor** – Research on Biomed. Eng. Journal (Springer-Nature) 2019 – present
- **IMechE** – Council Member (Elected in 2017 Annual Election for 3 years) 2017 – 2020
- **EPSRC** – Full College Member (rated as 2019’s top reviewer) 2016 – present
- **IMechE** – Fellow (FIMechE) 2016 – present
- **IMechE** – Chartered Engineer (CEng) 2012 – present
- **Higher Education Academy** – Fellow (FHEA) 2013 – present
- **British Council** – Newton Fund Review Panel Member 2015 – present
- **External Examiner/Advisor** – University of Chichester 2016 – present
- **Regular Reviewer** – Int J. Heat Mass Transfer; J. Numerical Heat Transfer; J. Nuclear Eng. Design; ASME Int Conference On Nuclear Engineering (ICONE); Flow, Turb. Combust.; J. Biomechanics; Artificial Organs; CIRP Procedia.

RESEARCH PLACEMENTS & SECONDMENTS

- **Wythenshawe Hospital, Manchester, UK** – Secondment (Visiting Professor) Jun 2019-Feb 2020
- **Polytechnic University of Catalonia, Barcelona, Spain** – Visiting Professor Jun-Jul 2018
- **ICCC Cardiovascular Research Inst., Barcelona, Spain** – Visiting Researcher Mar-May 2015
- **Thermal Hydraulics Group, British Energy, UK** – Visiting Researcher Jul-Aug 2010
- **Dep. of Fluid Mechanics, EdF R&D, Paris, France** – Visiting Researcher Jul-Sep 2007

HONOURS AND AWARDS

- Recognised as ‘**Top Reviewer**’ by EPSRC’s Executive Chair – EPSRC Apr 2019
- Winner of ‘**Making A Difference**’ Award – University of Manchester Mar 2019
- Winner of ‘**Frontiers of Development**’ Award – Royal Academy of Engineering Dec 2018
- Winner of ‘**Collaborate to Innovate**’ Award – The Engineer/EPSRC Sep 2017
- Winner of ‘**Best Supervisor of 2015**’ Award – MMU Teaching Awards Jun 2015
- Winner of ‘**Young Mechanical Engineer of the Year**’ – IMechE Apr 2015
- Winner of ‘**Rising Star**’ Award – MMU Staff Awards Jun 2014
- Winner of ‘**Thomas Andrew Common Award**’ – IMechE May 2013
- Winner of ‘**Top Research Paper**’ at CMFF’12 Conference – Hungary Aug 2012
- Winner of ‘**EPSRC Doctoral Prize**’ – University of Manchester Feb 2010
- Winner of ‘**The Best Research Image**’ competition – University of Manchester Jun 2009
- Awarded ‘**Full Scholarship**’ by EPSRC for PhD studies – University of Manchester Aug 2006
- Awarded ‘**Distinction**’ in MSc Dissertation – University of Manchester Sep 2006

RESEARCH INTERESTS

- Computational Fluid Dynamics
- Heat Transfer
- Biofluid Mechanics and Bioengineering
- Turbulence Modelling
- Nuclear Reactor Fuel
- Porous Media

TEACHING EXPERIENCE

- **Teaching responsibilities at the University of Manchester** *Jul 2016 – present*
 - Engineering Thermodynamics – 1st year (350+ students) – Unit Leader/Lecturer
 - Advanced Thermodynamics – MSc in TPE (25 students) – Unit Leader/Lecturer
- **Teaching responsibilities at Manchester Metropolitan University** *Jul 2011 – Jul 2016*
 - Thermofluids and Thermodynamics – 2nd year BEng (150+ students) – Unit Leader/Lecturer
 - Fluid Mechanics – 3rd year BEng (90+ students) – Unit Leader/Lecturer
 - Computational Fluid Dynamics – MSc/4th year MEng (15+ students) – Unit Leader/Lecturer
 - Bioengineering – MSc/4th year MEng (15+ students) – Lecturer
- **Teaching responsibilities at the University of Manchester** *Sep 2006 – Jun 2010*
 - Heat Transfer, Thermodynamics, Fluids, Modelling&Simulation – Tutor
 - Several undergraduate and postgraduate laboratories – Developer/Demonstrator

POSTGRADUATE STUDENT SUPERVISION

- Principal supervisor of 3 completed PhD students: Michael McElroy (2017), Andres Ruiz-Soler (2017), Amin Deyranlou (2020)
- Co-supervisor of 2 completed PhD student: Imad Maher Natsheh (2014), Amirhossein Hassani (2020)
- Currently supervisor of 6 PhD and 3 MSc students
- Supervised, co-supervised and assessed over 40 MSc, MPhil and PhD students

LANGUAGES

- **English:** Fluent
- **Farsi (Persian):** Fluent
- **Spanish:** Advanced

PERSONAL INTERESTS

- **Sport:** Football, Swimming and Tennis
- **Music:** Piano
- **Leisure:** Travelling and flying with single-engine aeroplanes

LIST OF PUBLICATIONS

Book Chapters:

1. Elliot, W., **Keshmiri, A.** & Tan, W., 'Chapter 22: Cardiovascular Mechanobiology', in 'Mechanobiology: Exploitation for Medical Benefit', Wiley, 2017 (ISBN: 978-1-118-96614-3).
2. **Keshmiri, A.** & Andrews K., 'Chapter 27: Vascular Flow Modelling using Computational Fluid Dynamics', in 'Handbook of Vascular Biology Techniques', Slevin, M. and McDowell, G. (Eds.), Springer, 2015, pp. 343-361 (ISBN 978-94-017-9715-3).

- Andrews K. & **Keshmiri, A.**, 'Chapter 25: Enhancing Endothelialization of Engineered Blood Vessels Using Structural Cues', in 'Handbook of Vascular Biology Techniques', Slevin, M. and McDowell, G. (Eds.), Springer, 2015, pp. 309-324 (ISBN 978-94-017-9715-3).

Journals:

- Satta, P., McElroy, M., **Keshmiri, A.**, and S. White et al, '*OSGIN1 and OSGIN2 mediate Nrf2-dependent endothelial detachment – implications for plaque erosion*', JACC Imaging (under-review).
- Hosseini, S.E. & **Keshmiri, A.**, '*Experimental and numerical investigation of different geometrical parameters in a centrifugal blood pump*', Research on Biomedical Eng., 2022, DOI : 10.1007/s42600-021-00195-8.
- Xenakis, A., Ruiz-Soler, A. & **Keshmiri, A.**, '*Multi-Objective Optimisation of A Novel Bypass Graft with a Spiral Ridge*', Int. Numerical Methods in Biomedical Engineering (under-review).
- Lopez-Santana, G.B., Kennaugh, A., & **Keshmiri, A.** '*Experimental techniques against RANS method in a fully-developed turbulent pipe flow*', engrXiv, 19, 2021, <https://doi.org/10.31224/osf.io/rqzp5>.
- McElroy, M., Kim, Y., ... Gijssen, F, Johnson, T., **Keshmiri, A.**, White, S., '*Identification of the haemodynamic environment permissive for plaque erosion*', Nature (Scientific Reports), 11:7253, 2021.
- Shahbazi, F., Souri, M., Jabbari, M. & **Keshmiri, A.** '*Flow Control Techniques for Enhancing the Bio-Recognition Performance of Microfluidic-Integrated Biosensors*', Applied Sciences, 11, 2021.
- Arasteh, H., Rahbari, A., Mashayekhi, R., **Keshmiri, A.**, Mahani, R., Talebizadehsardari, P., '*Effect of pitch distance of rotational twisted tape on the heat transfer and fluid flow characteristics*', Int. Journal of Thermal Sciences, Vol. 170, 2021, 106966.
- Hosseinzadeh, A. & **Keshmiri, A.**, '*The Role of Turbulence Models in Simulating Urban Microclimate*', Advances in Heat Transfer and Thermal Engineering, 2021, 675-680.
- Deyranlou, A., Revell, A. & **Keshmiri, A.**, '*A Coupled Flow-Thermoregulation Lumped Model to Investigate Cardiac Function*', bioRxiv, 2021 (doi: <https://doi.org/10.1101/2021.05.02.442367>).
- Hosseinzadeh, A. & **Keshmiri, A.**, '*Computational Simulation of Wind Microclimate in Complex Urban Models and Mitigation using Trees*', Buildings, Vol. 11 (112), 2021.
- Deyranlou, A., Miller, C.A., Revell, A. & **Keshmiri, A.**, '*Effects of Ageing on Aortic Circulation During Atrial Fibrillation; a Numerical Study on Different Aortic Morphologies*', Annals of Biomedical Eng., 2021, <https://doi.org/10.1007/s10439-021-02744-9>.
- Shahbazi, F., Jabbari, M., Nasr Esfahani, M., **Keshmiri, A.** '*Numerical framework for simulating bio-species transport in microfluidic channels with application to antibody biosensors*', MethodsX, 7, 2021, 101132.
- Shahbazi, F., Jabbari, M., Nasr Esfahani, M., **Keshmiri, A.** '*A Computational Simulation Platform for Designing Real-Time Monitoring Systems with Application to COVID-19*', Biosens. Bioelectron. 171, 2021, 112716.
- Swanson, L., Owen, B., **Keshmiri, A.** ..., Revell, A., '*A Patient-Specific CFD Pipeline Using Doppler Echocardiography for Application in Coarctation of the Aorta in a Limited Resource Clinical Context*', Front. Bioeng. Biotechnol., Vol. 8 (409), 2020.
- McElroy, M., Xenakis, A. & **Keshmiri, A.**, '*Impact of Heart Failure Severity on Optimal Ventricular Assist Device Configurations: A Computational Study*', Research on Biomedical Eng., Vol. 36, 2020, 489–500.
- Shamsabadi, H., Rashidi, S., Esfahani, J.A. & **Keshmiri, A.**, '*Condensation in the presence of non-condensable gases in a convergent 3D channel*', Int Journal of Heat and Mass Transfer, 152, 119511.

17. Hassani, A., Azapagic, A., D'Odorico, P., **Keshmiri, A.** & Shokri, N. '*Desiccation crisis of saline lakes: A new decision-support framework for building resilience to climate change*', *Science of the Total Environment*, 703, 2020, 134718.
18. Darbari, B., Rashidi, S. & **Keshmiri, A.**, '*Nanofluid heat transfer and entropy generation inside a triangular duct equipped with delta winglet vortex generators*', *Journal of Thermal Analysis and Calorimetry*, 140, 2020, 1045-1055.
19. Akbarzadeh, M., Rashidi, S., **Keshmiri, A.** & Shokri, N., '*The Optimum Position of Porous Insert for a Double-Pipe Heat Exchanger Based on Entropy Generation and Thermal Analysis*', *Journal of Thermal Analysis and Calorimetry*, 139, 2020, 411-426.
20. Deyranlou, A., Naish, J.H., Miller, C.A., Revell, A. & **Keshmiri, A.**, '*Numerical Study of Atrial Fibrillation Effects on Flow Distribution in Aortic Circulation*', *Annals of Biomedical Eng.*, 48 (4), 2020, 1291-1308.
21. Mashayekhi, R., Arasteh, H., Toghraie, D., Motaharpour, S.H., **Keshmiri, A.** & Afrand, M., '*Heat transfer enhancement of Water-Al₂O₃ nanofluid in an oval channel equipped with two rows of twisted conical strip inserts in various directions: A two-phase approach*', *Computers & Mathematics with Applications*, 79 (8), 2020, 2203-2215.
22. Satta, S., McElroy, M., Langford-Smith, A.W., **Keshmiri, A.**, et al. '*High-Level Nrf2 Activation Promotes Endothelial Detachment-Implications for Acute Coronary Syndromes Triggered by Endothelial Erosion of Plaques*', *Journal of Vascular Surgery*, Vol. 56, 2019, 1-71.
23. Satta, S., McElroy, **Keshmiri, A.**, et al. '*A pivotal role for Nrf2 in endothelial detachment-implications for endothelial erosion of stenotic plaques*', *bioRxiv*, 2019, 537852. (<https://doi.org/10.1101/537852>).
24. McElroy, M. & **Keshmiri, A.**, '*Impact of Using Conventional Inlet/Outlet Boundary Conditions on Haemodynamic Metrics in a Subject-Specific Rabbit Aorta*', *Journal of Engineering in Medicine*, Vol. 232(2), 2018, 103-113.
25. Ruiz-Soler, A., Kabinejadian, F., Slevin, M.A., Bartolo, P.J. & **Keshmiri, A.** '*Optimisation of a Novel Spiral-Inducing Bypass Graft Using Computational Fluid Dynamics*', *Nature (Scientific Reports)*, 7:1865, 2017.
26. Kabinejadian, F., Ruiz-Soler, A., McElroy, M., Leo, H.L., Slevin, M., Badimon, L. & **Keshmiri, A.**, '*Numerical Assessment of Helical/Spiral Grafts to Improve the Hemodynamics of Distal Graft Anastomoses*', *Plos One*, Vol. 11 (11), 2016, 1-22.
27. **Keshmiri, A.**, Osman, K., Benhamadouche, S. & Shokri, N., '*Assessment of Refined RANS Models against Large Eddy Simulation and Experimental Data in the Investigation of Ribbed Passages with Passive Heat*', *Int. J. Numerical Heat Transfer; Part B*, Vol. 69(2), 2016, 96-110.
28. McElroy, M., Ruiz-Soler, A. & **Keshmiri, A.**, '*Left Ventricular Assist Devices: Impact of Flow Ratios on The Localisation of Cardiovascular Diseases Using Computational Fluid Dynamics*', *J. Procedia CIRP*, Vol. 49, 2016, 163-169.
29. **Keshmiri, A.**, Ruiz-Soler, A., McElroy, M. & Kabinejadian, F., '*Numerical Investigation on The Geometrical Effects of Novel Graft Designs for Peripheral Artery Bypass Surgery*', *J. Procedia CIRP*, Vol. 49, 2016, 147-152.
30. Dehghan, M., Shokri, N., **Keshmiri, A.**, Valipour M.S. and Saedodin, S., '*On the Thermally Developing Force Convection Through A Porous Material Under the Local Thermal Non-Equilibrium Condition: An Analytical Study*', *Int. J. Heat and Mass Transfer*, Vol. 92, 2016, 815-823.
31. **Keshmiri, A.**, Revell, A. & Darabkhani, '*Assessment of a Common Non-Linear Eddy-Viscosity Turbulence Model in Capturing Laminarization in Mixed Convection Flows*', *Int. J. Numerical Heat Transfer; Part A*, Vol. 69(2), 2016, 146-165.

32. Norouzi Rad, M., Shokri, N., **Keshmiri, A.** & Withers, P., '*Effects of Grain and Pore Size on Salt Precipitation during Evaporation from Porous Media: A Pore-Scale Investigation*', Petroleum Abstracts, Vol. 56(7), 2016, 101.
33. **Keshmiri, A.**, Uribe, J. & Shokri, N., '*Benchmarking of Three Different CFD Codes in Simulating Natural, Forced and Mixed Convection Flows*', Int. J. Numerical Heat Transfer; Part A, Vol. 67(12), 2015, 1324-1351.
34. Rad, M.N., Shokri, N., **Keshmiri, A.** & Withers, P., '*Effects of Grain and Pore Size on Salt Precipitation During Evaporation from Porous Media: A Pore-Scale Investigation*', J. Transport in Porous Media, Vol. 110(2), 2015, 281-294.
35. Shokri, N., Zhou, P. & **Keshmiri, A.**, '*Patterns of Desiccation Cracks in Saline Bentonite Layers*', J. Transport in Porous Media, 2015, Vol. 110(2), 2015, 333-344.
36. **Keshmiri, A.**, Darabkhani, H.G., & Erfani, R., '*An Investigation into the Failure of a Non-Linear Eddy-Viscosity Model in Capturing the Laminarization Phenomenon*', AIAA Journals; Computational Fluid Dynamics Series, 2013, 1-13, DOI: 10.2514/6.2013-2427.
37. Erfani, R., **Keshmiri, A.**, Erfani, T. & Kontis, K., '*Multiple Encapsulated Electrode Plasma Actuators Effect on Aerofoil-Wake Interaction*', AIAA Journals; Plasmadynamics and Lasers Series, 2013, 1-9, DOI: 10.2514/6.2013-2884.
38. Darabkhani, H.G., Oakey, J., Zhang, Y. & **Keshmiri, A.**, '*Study of the Flame Structure and Dynamics Using Non-intrusive Combustion Diagnostic Techniques*', AIAA Journals; Fluid Dynamics Series, 2013, 1-8, DOI: 10.2514/6.2013-2605.
39. **Keshmiri, A.**, '*Numerical Sensitivity Analysis of 3- and 2-Dimensional Rib-Roughened Channels*', J. Heat and Mass Transfer, Vol. 48, 2012, 1257-1271.
40. **Keshmiri, A.**, Cotton, M.A., Addad, Y. & Laurence, D.R., '*Turbulence Models and Large Eddy Simulation in Application to Ascending Mixed Convection Flows*', Flow, Turbulence and Combustion, Vol. 89, 2012, 407-434.
41. **Keshmiri, A.** & Gotts, J., '*Thermal-Hydraulic Analysis of Four Geometrical Design Parameters on Fuel Pins in AGR Core Flows*', Int. J. Numerical Heat Transfer; Part A, Vol. 60, 2011, 305-327.
42. **Keshmiri, A.**, '*Effects of Various Physical and Numerical Parameters on Heat Transfer in Vertical Passages at Relatively Low Heat Loading*', ASME J. Heat Transfer, Vol. 133, 2011, p. 092502-1.
43. **Keshmiri, A.**, '*Three-Dimensional Simulation of a Simplified Advanced Gas-cooled Reactor Fuel Element*', J. Nuclear Engineering and Design, Vol. 241, 2011, 4122-4135.
44. **Keshmiri, A.**, Cotton, M.A., Addad, Y., Rolfo, S. & Billard, F., '*RANS and LES Investigations of Vertical Flows in the Fuel Passages of Gas-Cooled Nuclear Reactors*', ASME Journal of ICONE, Vol. 2, 2008, 297-306, DOI:10.1115/ICONE16-48372.

Peer-Reviewed Conference Proceedings:

1. Shahbazi, F., Jabbari, M., Nasr Esfahani, M., **Keshmiri, A.**, '*Numerical Modelling of Convective-Diffusive-Langmuir Transport of Biospecies inside a Microfluidic Integrated Biosensor*', 42nd Annual Int. Conferences of the IEEE Engineering in Medicine and Biology Society in conjunction with the 43rd Annual Conference of the Canadian Medical and Biological Engineering Society (EMBC2020) , Montréal, Québec, Canada, 20-24 July 2020.
2. Shahbazi, F., Jabbari, M., Nasr Esfahani, M., **Keshmiri, A.**, '*Numerical Simulation of Langmuir-Hinshelwood Mechanism for Heterogeneous Biosensors in Microfluidic Channel*', 8th European Medical and Biological Engineering Conference (EMBEC2020), Portorož, Slovenia, 14-16 June 2020.
3. Hosseinzadeh, A., Shokri, N. & **Keshmiri, A.**, '*The Role of Turbulence Models in Simulating Urban Microclimate*', Proceedings of the 16th UK Heat Transfer Conference (UKHTC2019), 8-10 Sep 2019, Nottingham, UK

4. Swanson, L., Owen, B., Ngoepe, M., **Keshmiri, A.**, et al., 'The Development of An Open Source CFD Pipeline for the Study of Coarctation of the Aorta and Tetralogy of Fallot in a Developing World Context', 6th Int. Conference on Computational and Mathematical Biomedical Engineering (CMBE2019), Sendai City, Japan, 10-12 June 2019.
5. Deyranlou, A., Naish, J., Miller, C., Revell, A., **Keshmiri, A.**, '4D Flow Phase Contrast Magnetic Resonance Imaging Versus Computational Fluid Dynamics, Boundary Condition Considerations', 6th Int. Conference on Computational and Mathematical Biomedical Engineering (CMBE2019), Sendai City, Japan, 10-12 June 2019.
6. Owen, B., O'Connor, J., Harwood, A., **Keshmiri, A.** & Revell, A. 'A Discrete fluid-structure interaction model for cardiovascular applications with GPU acceleration', 6th Int. Conference on Computational and Mathematical Biomedical Engineering (CMBE2019), Sendai City, Japan, 10-12 June 2019.
7. McElroy, M., White, S., Johnson, T., Gijzen, F & **Keshmiri, A.**, 'Blood Flow Conditions That Cause A Third Of Heart Attacks', 6th Int. Conference on Computational and Mathematical Biomedical Engineering (CMBE2019), Sendai City, Japan, 10-12 June 2019.
8. McElroy, M., White, S., Johnson, T., Gijzen, F. & **Keshmiri, A.**, '*Haemodynamic Risk Factors of Endothelial Erosion for Patient-Specific Treatment of Coronary Heart Disease*', Proc. 17th Conference on Modelling Fluid Flow, 'CMFF'18', Budapest, Hungary, 4-7 Sep 2018.
9. Ruiz-Soler, A. & **Keshmiri, A.**, 'Hemodynamic Performance of Spiral Grafts Using Eulerian and Lagrangian Frameworks', 5th Int. Conference on Computational and Mathematical Biomedical Engineering (CMBE2017), Pittsburgh, USA, 10-12 April 2017.
10. McElroy, M., Xenakis, A., & **Keshmiri, A.**, 'Impact of Heart Failure Severity on Preoperative Planning of Ventricular Assist Device Configurations', 5th Int. Conference on Computational and Mathematical Biomedical Engineering (CMBE2017), Pittsburgh, USA, 10-12 April 2017.
11. Thompson, A., Zhai, T., Palazzolo, A. & **Keshmiri, A.**, '*Coupling Guard Temperature and Windage Power Loss: CFD Analysis and Experiments*', Proc. 45th Turbomachinery and 32nd Pump Symposia, Houston, Texas, 12-15 Sep 2016.
12. McElroy, M., **Keshmiri, A.**, Revell, A., '*Effects of Different Outlet Boundary Conditions on the Accuracy of the CFD Simulations in a Rabbit Aorta Configuration*', Proc. CFD in Medicine and Biology II, Portugal, 1-4 Sep 2015.
13. Ruiz-Soler, A., **Keshmiri, A.** & Slevin, M., '*Numerical Investigation of Design Parameter Effects on Hemodynamics in a Novel Spiral-Inducing Bypass Graft*', Proc. 25th Congress of the International Society of Biomechanics, Glasgow, UK, 12-16 Jul 2015.
14. **Keshmiri, A.**, '*Verification and Validation of three Different CFD Codes in Simulating Natural and Mixed Convection Flows using Two Advanced Eddy-Viscosity Models*', Proc. 15th Int. Heat Transfer Conference, 'IHTC-15', Kyoto, Japan, 10-15 Aug 2014, pp. 1-14.
15. Ashton, N., **Keshmiri, A.** & Revell, A., '*Uncertainty Quantification of Boundary Conditions for the CFD Simulation of a Rabbit Aorta*', Proc. 7th World Congress of Biomechanics, Boston, USA, 6-11 Jul 2014.
16. Andrews, K., Ashton, N. & **Keshmiri, A.**, '*Use of Fluid-Structure Coupling to Investigate the True Physiological Hemodynamics Experienced by Endothelial Cells in Synthetic Grafts*', Proc. 7th World Congress of Biomechanics, Boston, USA, 6-11 Jul 2014.
17. **Keshmiri, A.**, Osman, K. & Benhamadouche, S, '*Comparison of Advanced RANS Models against Large Eddy Simulation and Experimental Data in Investigation of Ribbed Passages with Heat Transfer*', Proc. 15th Conference on Modelling Fluid Flow, 'CMFF'12', Budapest, Hungary, 4-7 Sep 2012, pp. 486-493.
18. **Keshmiri, A.**, Cotton, M.A., Addad, Y. & Laurence, D.R., '*Thermal-Hydraulic Analysis of Rib-Roughened Fuel Pin Performance in Gas-Cooled Nuclear Reactors*', Proc. 6th International

Symposium on Turbulence, Heat and Mass Transfer, 'THMT09', Rome, Italy, 14-18 Sep 2009, pp. 1011-1014.

19. **Keshmiri, A.**, Cotton, M.A. & Addad, Y., '*Numerical Simulations of Flow and Heat Transfer over Rib-Roughened Surfaces*', 17th Annual conference of CFD society of Canada, Ottawa, Canada, 3-5 May 2009, pp. 1-8.
20. Cotton, M.A. & **Keshmiri, A.**, '*Turbulent Mixed Convection Flows Computed Using Low-Reynolds-Number and Strain Parameter Eddy Viscosity Schemes*', Proc. 7th Int. ERCOFTAC Symp. On Engineering Turbulence Modelling and Measurements 'ETMM7', Vol. 1, Limassol, Cyprus, 4-6 Jun 2008, pp. 274-279.
21. **Keshmiri, A.**, Cotton, M.A., Addad, Y., Laurence, D.R. & Billard, F., '*Refined Eddy Viscosity Schemes and LES for Ascending Mixed Convection Flows*', 4th Int. Symp. On Advances in Computational Heat Transfer, 'CHT-08', Marrakech, Morocco, 11-16 May 2008, pp.1-22.

Keynote Speaker:

1. 'Spiral-Inducing Bypass Graft – Winner of C2I Award 2017', **Collaborate to Innovate Conference**, Advanced Manufacturing Training Centre, Coventry, 7 Dec 2017.
2. 'Can Computers Help to Save Lives?', **Sant Pau Hospital Cardiovascular Surgery Research Conference**, Barcelona, Spain, 5 May 2015
3. 'Using Fluid-Structure Interaction in Complex Biomedical Problems', Barcelona Supercomputing Centre (BSC), Spain, 24 Jul 2014

Contribution to Technical Magazines:

1. Goddard, A.J.H., Pain, C.C., Laurence, D.R., et al. 2007. '*Safety and Performance for Innovative Reactors*', J. Nuclear Future, Vol. 3, pp. 257-268.
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TV/Radio Appearances

1. **BBC Radio Manchester** – Interview in 'Phil Trow Show' @ 15:00-18:00 – 14/01/2015
2. **Manoto TV Network** – 30 minutes Interview in 'Manoto+ Show' – London Studio – 04/03/2015

Press Releases

1. **University of Manchester News** – 'Laboratory-on-a-chip devices could dramatically reduce COVID-19 detection times' – 28/10/2020
<https://www.manchester.ac.uk/discover/news/laboratory-on-a-chip-devices-could-dramatically-reduce-covid-19-detection-times>
2. **Newsbeezer** – Lab on a Chip for COVID-19 – 'Laboratory-on-a-chip devices could dramatically reduce COVID-19 detection times' – 28/10/2020
<https://newsbeezer.com/singapore/lab-on-a-chip-devices-could-significantly-reduce-covid-19-detection-times/>
3. **Technology.org** – 'Laboratory-on-a-chip devices could dramatically reduce COVID-19 detection times' – 29/10/2020
<https://www.technology.org/2020/10/29/laboratory-on-a-chip-devices-could-dramatically-reduce-covid-19-detection-times/>
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<http://www.manchestereveningnews.co.uk/news/greater-manchester-news/manchester-scientists-heart-surgery-breakthrough-8544430>
5. **Guernsey Press** – 'New hope in 'gun barrel' arteries' – 14/01/2015
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9. **New Zealand Herald** – ‘Artificial arteries a game changer for heart surgery; research’ – 15/01/2014 http://www.nzherald.co.nz/lifestyle/news/article.cfm?c_id=6&objectid=11386795
10. **The Australian News** – ‘New hope in ‘gun barrel’ arteries’ – 15/01/2015
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<https://uk.news.yahoo.com/hope-gun-barrel-arteries-134449142.html#65kJES7>
13. **British Telecommunication News** – ‘New hope in ‘gun barrel’ arteries’ – 14/01/2015
<http://home.bt.com/news/science-news/new-hope-for-gun-barrel-arteries-11363954673751>
14. **Research Matters** – ‘Fluid Notion’ in ‘Issue 03’ printed the Faculty of Science and Engineering, MMU – Spring 2013
http://www.sci-eng.mmu.ac.uk/research_matters/spring_2013/rm_spring_2013.pdf