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List of publications

Refereed journal papers

11. K.H. Ardron, **G. Giustini**, *On the wetting behavior of surfaces in boiling*, Physics of Fluids, 33(11) (2021) 111302. https://doi.org/10.1063/5.0069686

10. **G. Giustini**, R. I. Issa, *A method for simulating interfacial mass transfer on arbitrary meshes*, *Physics of Fluids*, 33(8) (2021) https://doi.org/10.1063/5.0058987

9. **G. Giustini**, H. Kim, R. I. Issa, M. J. Bluck, *Modelling Microlayer Formation in Boiling Sodium*, *Fluids* (2020), *5*; https://doi.org/10.3390/fluids5040213

8. **G. Giustini**, *Modelling of Boiling Flows for Nuclear Thermal Hydraulics Applications—A Brief Review*, Inventions (2020), 5(3), 47; https://doi.org/10.3390/inventions5030047

7. **G. Giustini**, I. Kim, H. Kim, *Comparison between modelled and measured heat transfer rates during the departure of a steam bubble from a solid surface*, International Journal of Heat and Mass Transfer 148 (2020), https://doi.org/10.1016/j.ijheatmasstransfer.2019.119092

6. **G. Giustini**, S. Jung, H. Kim, K H Ardron, S P Walker, *Microlayer evaporation during steam bubble growth,* International Journal of Thermal Sciences 137C (2019) pp. 45-54, http://doi.org/10.1016/j.ijthermalsci.2018.11.012

5. **G. Giustini**, K H Ardron, S P Walker, *Modelling of bubble departure in flow boiling using equilibrium thermodynamics,* International Journal of Heat and Mass Transfer, 122C (2018), http://dx.doi.org/10.1016/j.ijheatmasstransfer.2018.02.057

4. **G. Giustini**, Y. Sato, B. Niceno, S P Walker, *Computational Fluid Dynamics analysis of the transient cooling of the boiling surface at bubble departure*, ASME Journal of Heat Transfer, 2017, doi: http://dx.doi.org/10.1115/1.4036572

3. K.H. Ardron, **G. Giustini**, S.P. Walker, *Prediction of dynamic contact angles and bubble departure diameters in pool boiling using equilibrium thermodynamics*, International Journal of Heat and Mass Transfer, 114 (2017) 1274-1294, doi: https://doi.org/10.1016/j.ijheatmasstransfer.2017.07.013

2. J.S. Murallidharan, **G. Giustini**, Y. Sato, B. Niceno, V.E. Badalassi, S.P. Walker, *Computational Fluid Dynamic Simulation of Single Bubble Growth under High-Pressure Pool Boiling Conditions*, Nuclear Engineering and Technology, 48(4) (2016) 859-869, doi: http://dx.doi.org/10.1016/j.net.2016.06.004

1. **G. Giustini**, S. Jung, H. Kim, S. Walker, *Evaporative thermal resistance and its influence on microscopic bubble growth*, International Journal of Heat and Mass Transfer (2016), doi: http://dx.doi.org/10.1016/j.ijheatmasstransfer.2016.05.081

Book chapter

1. K. Nandi, **G. Giustini**, *Numerical Modeling of Boiling*, in: K. Saha, A. Kumar Agarwal, K. Ghosh, S. Som (Eds.) Two-Phase Flow for Automotive and Power Generation Sectors, Springer Singapore, Singapore, 2019, pp. 381-398. https://dx.doi.org/10.1007/978-981-13-3256-2_15

Refereed conference papers

7. **G. Giustini**, H. Kim, R. I. Issa, *Numerical and experimental study of the shape of microlayers near the contact line beneath vapour bubbles growing on heated substrates,* The 19th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-19), Brussels, Belgium, March 6 - 11, 2022.

6. **G. Giustini**, K H Ardron, S P, Walker, *A semi-analytical model of bubble growth and detachment during nucleate boiling,* The 16th International Heat Transfer Conference, Chinese National Convention Center, Beijing, China, August 10-15, 2018.

5. **G. Giustini**, V. Badalassi, S. P. Walker, *Analysis of the Liquid Film Formed Beneath a Vapour Bubble Growing at a Heated Wall Without Neglect of Evaporative Thermal Resistance*, 2016 International Congress on Advances in Nuclear Power Plants (ICAPP 2016), April 17-20, 2016**,** Hyatt Regency San Francisco, San Francisco, CA.

4. **G. Giustini**, S. Walker, *Evaporative thermal resistance and its influence on microlayer evaporation,* International Topical Meeting on Advances in Thermal Hydraulics 2016 (ATH 16), Hyatt Regency, New Orleans, 2016.

3. **G. Giustini**, J.S. Murallidharan, Y. Sato, B. Niceno, V.E. Badalassi, S.P. Walker, *Numerical study of heat diffusion controlled bubble growth in a pressurized liquid*, 16th International Topical Meeting on Nuclear Reactor Thermal-Hydraulics (NURETH), Hyatt Regency, Chicago, 2015.

2. J.S. Murallidharan, **G. Giustini**, Y. Sato, B. Niceno, V.E. Badalassi, S.P. Walker, *Interface tracking based evaluation of bubble growth rates in high pressure pool boiling conditions*, 16th International Topical Meeting on Nuclear Reactor Thermal-Hydraulics (NURETH), Hyatt Regency, Chicago, 2015.

1. S. Haensch, C. Narayanan, S. Reboux, **G. Giustini**, S.P. Walker, *Microlayer models for nucleate boiling simualtions: the importance of conjugate heat transfer*, 16th International Topical Meeting on Nuclear Reactor Thermal-Hydraulics (NURETH), Hyatt Regency, Chicago, 2015.

Invited talks

6. Rolls-Royce Nuclear University Technology Centre (UTC) Seminar, *Modelling Surface Effects in Boiling,* Rolls-Royce UTC, Department of Mechanical Engineering, **Imperial College London**, 14 July 2020.

5. Industrial & Applied Maths seminar at **Nottingham University**, *Microscopic modelling of boiling for nuclear thermal hydraulics applications*, School of Mathematical Sciences, University of Nottingham, 05 March 2020.

4. 'Thermofluids Week' seminar at the **University of Applied Sciences and Arts of Southern Switzerland (SUPSI)**, *Aspects of two phase flow modelling for boiling and power generation applications: fundamental 'microscopic' investigations and their upscaling to the analysis of heat transfer equipment,* Institute for Mechanical Engineering and Materials Technology, SUPSI, 12 November 2019.

3. Annual Engineering and Physical Sciences Research Council (EPSRC) Indo-UK Civil Nuclear Network & Collaboration Conference at the **University of Sheffield**, *Computational Fluid Dynamics for nuclear thermal hydraulics: application to reactor passive cooling*, Department of Materials Science and Engineering, University of Sheffield, 30 October 2019.

2. UK Science and Innovation Network 'Science Policy Public Italy (SPP-Italy)' conference, **Cambridge University**, selected presentation *Towards an Italian nuclear Renaissance: a roadmap of challenges and opportunities,* Old Divinity School, St John's College, Cambridge, 26 October 2019.

1. Inaugural Aeronautical and Mechanical Engineering Seminar (AMES), *Computational Fluid Dynamics for nuclear thermal hydraulics: application to microscopic modelling of boiling*, Department of Aeronautics, **Imperial College London**, 29 March 2019.

Recent talks

2. **G. Giustini**, R. I. Issa, *Simulations of free bubble growth with a mechanistic interfacial mass transfer model*, 74th Annual Meeting of the APS Division of Fluid Dynamics, November 21–23, 2021; Phoenix Convention Center, Phoenix, Arizona, and online.
https://meetings.aps.org/Meeting/DFD21/Session/P21.11

1. **G. Giustini**, *Modelling interfacial mass transfer on arbitrary meshes*, 18th HZDR (Helmholtz Zentrum Dresden Rossendorf) Multiphase Flow Conference and Short Course. Simulation, Experiment and Application. November 8—10, 2021; online.