

Publications

Articles in Preparation

- F. Bierbrauer, N. Kapur, M. Wilson, Critical Pinch-Off in Drop Formation at Capillaries, to be submitted to *Physical Review Letters*, 2013.
- F. Bierbrauer, C.F. Osbourne, J. Chen, The Role of Surface Profile in the Spectral Variation of Steel Surface Emissivity, to be submitted to *IEEE Transactions on Antennas and Propagation*, 2013.
- F. Bierbrauer, Advection-Diffusion Models for Controlled Drug Release from Hydrogels, to be submitted to *Journal of Engineering Mathematics*, 2013.
- F. Bierbrauer, Impingement-Jet Cooling in the Steel Industry, to be submitted to *ASME Journal of Heat Transfer*, 2013.

Articles in Refereed Journals

- F. Bierbrauer, N. Kapur, M.C.T. Wilson, Drop Pinch-Off for Discrete Flows from a Capillary, *ESAIM Proc.*, 2013 (accepted).
- F. Bierbrauer, P.C. Bollada, T.N. Phillips, A Consistent Reflected Image Particle Approach for the Treatment of Boundary Conditions in Smoothed Particle Hydrodynamics, *Computer Methods in Applied Mechanics and Engineering*, **198** (2009), 3400-3410.
- F. Bierbrauer, T.N. Phillips, The Numerical Prediction of Droplet Deformation and Break-Up Using the Godunov Marker-Particle Projection Scheme, *International Journal for Numerical Methods in Fluids*, **56** (2008), 1155-1160.
- F. Bierbrauer, S.-P. Zhu, A Numerical Model for Multiphase Flow Based on the GMPPS Formulation, Part II: Dynamics, *Engineering Applications of Computational Fluid Mechanics*, **2** (2008), 284-298.
- F. Bierbrauer, S.-P. Zhu, A Numerical Model for Multiphase Flow Based on the GMPPS Formulation, Part I: Kinematics, *Computers and Fluids*, **36** (2007), 1199-1212.
- F. Bierbrauer, S.-P. Zhu, A Solenoidal Initial Condition for the Numerical Solution of the Navier-Stokes Equations for Two-Phase Incompressible Flow, *Computer Modelling in Engineering & Sciences*, **19** (2007), 1-22.
- F. Bierbrauer, W.-K. Soh and W.Y.D. Yuen, An Eulerian-Lagrangian Method for Convective Heat Transfer at a Stagnation Point, *Computational Fluid Dynamics Journal*, **10** (2002), 446-453.
- F. Bierbrauer, W.-K. Soh and W.Y.D. Yuen, On Some Developments and Evaluation of an Eulerian-Lagrangian Method for the Transport Equation, *ANZIAM Journal (E)*, **42** (2000), C238-C262.

Articles in Conference Proceedings

- F. Bierbrauer, T.N. Phillips, Modelling Spray Impingement onto Flat, Rigid Walls Using an Eulerian-Lagrangian Method, *ILASS 2008 Proceedings of the European Conference on Liquid Atomization and Spray Systems, September 8-10 2008, Como, Italy*.
- F. Bierbrauer, T.N. Phillips, Secondary Atomisation: Simulation of Droplet Break-Up in Disturbed Flow Fields, *ILASS 2008 Proceedings of the European Conference on Liquid Atomization and Spray Systems, September 8-10 2008, Como, Italy*.
- F. Bierbrauer, T.N. Phillips, The Numerical Prediction of Droplet Deformation and Break-Up Using the Godunov Marker-Particle Projection Scheme, *Proceedings of the Ninth International ICFD Conference on Numerical Methods for Fluid Dynamics*, March 26-29, 2007, Reading, UK.
- B. Wright, P. Zulli, F. Bierbrauer, V. Panjkovic, Assessment of Refractory Condition in a Blast Furnace Hearth Using Computational Fluid Dynamics, *Third International Conference on CFD in the Minerals and Process Industries*, CSIRO, Melbourne, Australia, December 10-12, 2003.

- F. Bierbrauer, W.-K. Soh and W.Y.D. Yuen, Application of the Eulerian-Lagrangian Method to Water-Jet Cooling of a Hot Moving Strip, CHT'01 – Advances in Computational Heat Transfer II, *Proceedings of a Second Symposium - Palm Cove, Queensland, Australia, May 20-25, 2001*.
- F. Bierbrauer, J. Chen, An Analytic Solution of the Beckmann Scattering Integral with Application to Temperature Measurement in Industry, *Proceedings of the 1994 Asia Pacific Microwave Conference, Dec 6-9, Tokyo, Japan*, Vol. III, pp 1209-1212, 1994.
- F. Bierbrauer, J. Chen, A Study on the Surface Emissivity of Oxidised Steel Using a Three-Layer Model, *Proceedings of the 1993 Asia Pacific Microwave Conference, Oct 18-21, Hsinchu, Taiwan*, Vol. II, pp 11:11-11:14, 1993.

Articles in Workshop Proceedings

- F. Bierbrauer, Water Drop Impact on Hot Galvanised Steel Surfaces, *Proceedings of the Splash and Free Surface Flow Workshop, June 26, University of Melbourne, Australia*, pp 11, 1995.

Laboratory Reports

- F. Bierbrauer, Realising the Potential of the Next Generation of Printed Pharmaceuticals, Part III – Computational Modelling of Drop Formation in the LDT Process, *internal report*, School of Mechanical Engineering, University of Leeds, 2011.
- F. Bierbrauer, Hydrogel Drug Delivery: diffusion models, *internal report*, School of Mathematics & Applied Statistics, University of Wollongong, 2005.
- F. Bierbrauer, Improvements to the CRFM Model: The Taphole Pedestal, *BlueScope Steel Research Laboratories (BSR/R/2004/004)*, Port Kembla, Australia, 2004.
- F. Bierbrauer, P. Zulli, Evaluation of Coke-Free Layer Geometries on Hearth Flow Dynamics Using a Coupled Flow and Refractory Model (CFRM), *BlueScope Steel Research Laboratories (SRL/R/2003/004)*, Port Kembla, Australia, 2003.
- F. Bierbrauer, W.-K. Soh, D. Yuen, A Mathematical Investigation of Heat Conduction in a Moving Steel Sheet, *internal report*, Department of Mechanical Engineering, University of Wollongong, Australia, 2001.
- F. Bierbrauer, The Surface Emissivity of Oxidised Steel, *BHP Research Laboratories, internal report*, Melbourne, Victoria, Australia, 1992.

Posters Presented

- F. Bierbrauer, A Proposed Resolution of the Spurious Slip Velocity in Projection Methods for Incompressible Flows, Poster at the *British Applied Mathematics Colloquium*, University of Leeds, Leeds, UK, April 9-12, 2013.
- F. Bierbrauer, Critical Drop Ejection in Discrete Flows. School of Computing, Mathematics & Digital Technology, Manchester Metropolitan University, 2012.
- F. Bierbrauer, O. Harlen, T. Sabey, M. Wilson, N. Kapur, Modelling the Drop Formation Process, *GSK Process Modelling Conference, June 8-9, Ware, UK, 2010*.
- F. Bierbrauer, T. Phillips, Droplet Dynamics: multiphase flow modelling, *University Open Day, February 24, 2009, Cardiff, UK*.