

Name: Dr Philip A. Hobson (Phil)

Position: Principal Research Fellow

PhD, Applied Energy, Cranfield Inst Tech (UK),
1988;

Qualifications: MSc, Energy Conservation & Built Environment,
Cranfield Inst Tech (UK), 1985;
BSc (Hons), Mathematics/ Physics, Lanchester
Poly. (UK), 1980

**Organisational
Area:** Sugar Research and Innovation

Research Area: Centre for Tropical Crops and Biocommodities

Phone: +61 7 3138 1240

Fax: +61 7 3138 4132

Email: p.hobson@qut.edu.au

Postal Address: Centre for Tropical Crops and Biocommodities
Queensland University of Technology (QUT)
GPO Box 2434
Brisbane Qld 4001



Biography

Phil Hobson has over 20 years experience in engineering project management, research and consulting in the commercial, academic and public sectors. This has been primarily in the areas of energy and fluid flow analysis relating to the optimization of factory operations and factory integration of thermal co-processes such as advanced cycle biomass (BIG/CC and direct combustion) electrical power generation and biofuels. Core skills include: process modelling of practical thermal systems and CFD modelling of complex multiphase (fluidized bed) thermochemical reaction processes. Other analytical skills include environmental modelling related to the atmospheric dispersion of smokes and aerosols, supply/ value chain modelling and financial analysis.

Professional Experience

- **2005 to Present** Principal Research Fellow, Sugar Research and Innovation, Queensland University of Technology.
- **2002 to 2005** Principal Engineer, Sugar Research Institute, Mackay, Queensland.
- **1993 to 2002** Senior Engineer, Sugar Research Institute, Mackay, Queensland
- **1991 to 1993** Senior Research Fellow (Director of Research), Energy Laboratory, The University of Queensland
- **1988 to 1991** Higher Scientific Officer, Silsoe Research Institute, Ministry of Agriculture Fisheries and Food, Bedfordshire, UK.

- **1985 to 1988** Research Associate, Applied Energy Group, Cranfield Institute of Technology, UK.
- **1980 to 1983** Teacher (physics/ mathematics), Greensteds School, Nakuru, Kenya.

Recent focus: Gasifier process and reactor modelling; pyrolysis for furfural production from bagasse; modelling of bagasse stockpile and spontaneous combustion; sugar industry supply chain analysis; bagasse torrefaction as a pre-process for gasification; comparative diversification studies for the sugar industry; pneumatic separation technology for recovery of cane harvest residues.

Affiliations/ Awards

- Member – Australian Society of Sugar Cane Technologists
- Member – International Society of Sugar Cane Technologists

Publications–Top 20

Phil Hobson has authored over 25 commercial research and consulting reports and over 30 reviewed publications. A selection of papers in the public domain include:

- **Hobson, P.A.** and Joyce, J.A. (2007). Simulation and design of a bagasse gasifier. Proc. Int. Soc. Sugar Cane Technol., Vol. 26, pp 1093 – 1102.
- **Hobson, P.A.** (2007). An overview of bagasse gasification R&D activities at Sugar Research and Innovation. Proc. Int. Soc. Sugar Cane Technol., Vol. 26, pp 1103 – 1113.
- Thorburn, P.J., Archer, A.A., **Hobson, P.A.**, Higgins, A.J., Sandell, G.R., Prestwich, D.B., Andrew, B., Antony, G., McDonnald, L.M., Downs, P. and Juffs, R. (2006). Value chain analysis of whole crop harvesting to maximize co-generation. Proc. Aust. Soc. Sugar Cane Technol. Vol 28, pp 37 – 48.
- Edey, L.A., Lavarack, B. P., **Hobson, P.A.**, Blinco, J.A., Hodgson, J.J., Doherty W.O.S and Bullock, G.E. (2004). Ethanol Production by the ZeaChem Process: An Element of a Sugarcane Biorefinery Proceedings of the Conference on Sugar Processing Research. New Developments, Atlanta, Georgia, USA. pp 27 – 36
- Dixon, T.F., Mann, A.P., **Hobson, P.A.**, Plaza, F. Pennisi, S. and Steindl, R.J. (2003) Applications of CFD in the sugar industry. 3rd International conference on CFD in the Minerals and Process Industries, CSIRO, Melbourne.
- Downing, C.M., **Hobson, P.A.**, Kent, G.A. and Burbidge, D. (2002). Is investment in a bagasse dewatering mill economically justifiable for co-generation? Proc. Aust. Soc. Sugar Cane Technol. pp 347 – 351.

- Schembri, M.G., **Hobson, P.A.** and Paddock, R. (2002). The development of a prototype factory-based trash separation plant, Proc. Aust. Soc. Sugar Cane Technol. pp 12 – 18.
- **Hobson, P.A.** and Dixon, T.F. (1998) Gasification technology – prospects for large-scale high-efficiency cogeneration in the Australian sugar industry. Proc. Aust. Soc. Sugar Cane Technol. pp 1–16.
- **Hobson, P.A.** (1997) The use of a computer model to investigate improved cane cleaning systems. Proc. Aust. Soc. Sugar Cane Technol. pp 162–169.
- **Hobson, P.A.**, Joyce, K.N. and Edwards, B.P. (1996). Developments in the modelling of cane particle trajectories during pneumatic cane cleaning. Proc. Internat. Soc. Sugar Cane Technol., 22: 283287.
- **Hobson, P.A.** (1996) Wind tunnel validation of a model for high pour rate pneumatic cane cleaning systems. Proc. Aust. Soc. Sugar Cane Technol. pp 286–291.
- **Hobson, P.A.** (1995) Modelling interaction between cane particles during high pour rate pneumatic cane cleaning. Proc. Aust. Soc. Sugar Cane Technol. pp 61–69.
- **Hobson, P.A.** and Miller, P. (1990) Spray Drift from Hydraulic Nozzles; the use of a Computer Simulation Model to Examine Factors Influencing Drift, presented at the AGENG '90 International Conference, Berlin, October
- **Hobson, P.A.** and Norton, B. (1988) The Development of a Design Algorithm for Direct Thermosyphon Solar Energy Water Heaters, proc of the ASME Winter Annual Meeting, Chicago, USA, November/December.
- **Hobson, P.A.**, Norton, B. and Probert, S.D. (1987) Improved Performance Simulation for Thermosyphon Solar Water Heaters, proc of the International Symposium on Natural Circulation, ASME Winter Annual Meeting, Boston, USA, December 1987, 167–176.
- **Hobson, P.A.**, Lo, S.N.G., Norton, B. and Probert, S.D. Correlating the Daily Performance of Indirect Thermosyphon Solar Energy Water Heaters, proc of the ISES Solar World Congress, Hamburg, W. Germany, September.
- **Hobson, P.A.** (1997). A few words about cane cleaning. International Cane Energy News, July.
- **Hobson, P.A.** (1997). Investigating improved cane cleaning systems. Australian Sugar Cane, October/November.
- **Hobson, P.A.** and Miller, P. (1993) Spray Drift from Boom Mounted Hydraulic Nozzles; the use of a Computer Simulation Model to Examine Factors Influencing Drift, Journal of Agricultural Engineering Research, 54, 293 – 302.
- **Hobson, P.A.** and Norton, B. (1989) A Design Nomogram for Direct Thermosyphon Solar Energy Water Heaters, Solar Energy, 43, 2, 85–96.

- **Hobson, P.A.** and Norton, B. (1988) Verified Accurate Performance Simulation Model of Direct Thermosyphon Solar Energy Water Heaters, ASME Journal of Solar Energy Engineering, November, 110, 4, 282–292.