

NiTech Publications List

1. F. Navarro Fuentes, M. Keane and X. Ni, "A comparative evaluation of hydrogenation of 3-butyn-2-ol over Pd/Al₂O₃ in an oscillatory baffled reactor and a commercial PARR reactor", submitted to Organic Process Research & Development, Oct. 2018.
2. A. McLaughlin, J. Robertson and X. Ni, "Investigation of dissolution rates of acetylsalicylic acid, benzoic acid, nicotinic acid and paracetamol in a stirred tank vessel and a twin screw extruder", submitted to Organic Process Research & Development, Oct. 2018.
3. G. Jimeno, Y.C. Lee and X. Ni, "SPH On the evaluation of power density models for oscillatory baffled crystallisers using CFD", submitted to Chemical Engineering and Computer, July 2018.
4. M. Jiang and X. Ni, "Effects of solvents and impurity on crystallisation kinetics and crystal properties in a reactive crystallisation of paracetamol", submitted to Industrial & Engineering Chemistry Research, Oct. 2018.
5. A. McLaughlin, J. Robertson and X. Ni, "On the use of a twin screw extruder as a continuous solid dosing feeder", accepted by Organic Process Research & Development, 2018.
6. G. Jimeno, Y.C. Lee and X. Ni, "On the evaluation of power density models for oscillatory baffled crystallisers using CFD", submitted to the Journal of Chemical Engineering and Processing – Process Intensification, July 2018.
7. A. Oliva, Joesph & Pal, Kanjakha & Barton, Alastair & Firth, Paul & K. Nagy, Zoltan, "Experimental investigation of the effect of scale-up on mixing efficiency in oscillatory flow baffled reactors (OFBR) using principal component based image analysis as a novel non-invasive residence time distribution measurement approach." (2018) Chemical Engineering Journal.
8. Onyemelukwe, I. I.; Benyahia, B.; Reis, N. M.; Nagy, Z. K.; Rielly, C. D., The heat transfer characteristics of a mesoscale continuous oscillatory flow crystalliser with smooth periodic constrictions. *International Journal of Heat and Mass Transfer* **2018**, *123*, 1109-1119.
9. Law R, Ahmed S, Tang N, Phan AN, Harvey A. "Development of a more robust correlation for predicting heat transfer performance in oscillatory baffled reactors." *Chemical Engineering & Processing: Process Intensification* 2018, *125*, 133-138.
10. R. Macleod and X. Ni, "Effect of surface scraping on chiral symmetry in seeded cooling crystallisation of sodium chlorate", *Crystal Engineering Communications*, Vol. 20, 2018, p3696 – 3701.
11. X. Ni, R. Shepherd, J. Whitehead, T. Liu, "Chiral symmetry breaking due to impeller size in cooling crystallisation of sodium chlorate", accepted by *Crystal Engineering Communications*, 2018.
12. M. Jiang and X. Ni, "Effects of water and temperature on reaction mechanism and crystal properties in a reactive crystallisation of paracetamol", *Chemical Engineering and Processing: Process Intensification*, Vol. 131, 2018, p20-26.
13. A. McLaughlin, J. Robertson and X. Ni, "Material characterisation and parameter effects on bulk solid dissolution rate of paracetamol in a stirred tank vessel using an in situ UV-ATR probe", the *International Journal of Engineering Research and Science*, Vol. 4, 2018, p10-20.

14. Y. Huo, G. Liu, X. Wang, C. Ma and X. Ni, "On-line detection of particle agglomeration during solution crystallization by microscopic double-view image analysis", *Industrial & Engineering Chemistry Research*, Vol. 56, No. 39, 2017, p11257-11269.
15. Peña, Ramon & A. Oliva, Joseph & Burcham, Christopher & Jarmer, Daniel & K Nagy, Zoltan, "Process Intensification through Continuous Spherical Crystallization Using an Oscillatory Flow Baffled Crystallizer (OFBC)". 2017. *Crystal Growth & Design*.
16. J. A. Adalakun and X. Ni, "On the kinetics of palm oil crystallisation", *the International Journal of Engineering Research and Science*, Vol. 2, No. 10, 2016, p1-12.
17. H.R. McLachlan and X. Ni, "On the effect of added impurity on crystal purity of urea in the oscillatory baffled crystallizer and stirred tank crystallizer", *Journal of Crystal Growth*, Volume 442, 2016, 81-88.
18. H.R. McLachlan and X. Ni, "An investigation into parameters affecting crystal purity of urea in a stirred tank and an oscillatory baffled crystallizer", *Chemical Engineering Communications*, Volume 203, 2016, 1189-1197.
19. Yang, Huaiyu, Yu, Xi, Raval, Vishal, Makkawi, Yassir, & Florence, Alastair. (2016). Effect of Oscillatory Flow on Nucleation Kinetics of Butyl Paraben. *Crystal Growth & Design*, 16(2), 875-886.
20. McDonough J. R., Phan A. N., Reay D. A., Harvey A. P. "Passive isothermalisation of an exothermic reaction in flow using a novel "Heat Pipe Oscillatory Baffled Reactor (HPOBR)"." *Chemical Engineering and Processing: Process Intensification* 2016, 110, 201-213.
21. C.J. Brown, J. A. Adalakun and X. Ni, "Characterization and modelling of antisolvent crystallization of salicylic acid in a continuous oscillatory baffled crystallizer", *Chemical Engineering and Processing*, Volume 97, 2015, 180-186.
22. Briggs, Naomi E. B., Schacht, Ulrich, Raval, Vishal, McGlone, Thomas, Sefcik, Jan, & Florence, Alastair J. (2015). Seeded Crystallization of β -l-Glutamic Acid in a Continuous Oscillatory Baffled Crystallizer. *Organic Process Research & Development*, 19(12), 1903-1911
23. McGlone, Thomas, Briggs, Naomi, Clark, Catriona, Brown, Cameron, Sefcik, Jan, & Florence, Alastair J. (2015). Oscillatory flow reactors (OFRs) for continuous manufacturing and crystallization. *Organic Process Research & Development*.
24. Ikwebe J., Harvey A. P. "Enzymatic saccharification of cellulose: a study of mixing and agitation in an oscillatory baffled reactor and a stirred tank reactor." *Biofuels* 2015, 6(3-4), 203-208.
25. Siddique, Humera, Brown, Cameron J., Houson, Ian, & Florence, Alastair J. (2015). Establishment of a Continuous Sonocrystallization Process for Lactose in an Oscillatory Baffled Crystallizer. *Organic Process Research & Development*, 19(12), 1871-1881.
26. C.J. Brown, Y.C. Lee, Z. Nagy and X. Ni, "Evaluation of crystallisation kinetics of adipic acid in an oscillatory baffled crystalliser", *Crystal Engineering Communications*, Vol. 16, 2014, 8008-8014.
27. C.J. Callahan and X. Ni, "An investigation into the effect of mixing on the secondary nucleation of sodium chlorate in a moving fluid and moving baffled crystallizer", *Canadian Journal of Chemical Engineering*, Vol. 92, 2014, 1920-1925.

28. C.J. Callahan and X. Ni, "An investigation into the effect of mixing on the secondary nucleation of sodium chlorate in a stirred tank and oscillatory baffled crystallizer", *Crystal Engineering Communications*, Vol. 16, No. 4, 2014, 690-697.
29. Al-Abduly A, Christensen P, Harvey A, Zahng K. "Characterization and optimization of an oscillatory baffled reactor (OBR) for ozone-water mass transfer." *Chemical Engineering and Processing: Process Intensification* 2014, 84, 82-89.
30. Abbott MSR, Harvey AP, Morrison MI. "Rapid Determination of the Residence Time Distribution (RTD) Function in an Oscillatory Baffled Reactor (OBR) Using a Design of Experiments (DoE) Approach." *International Journal of Chemical Reactor Engineering* 2014, 12(1), 575-586.
31. Abbott MSR, Perez GV, Harvey AP, Theodorou MK. "Reduced power consumption compared to a traditional stirred tank reactor (STR) for enzymatic saccharification of alpha-cellulose using oscillatory baffled reactor (OBR) technology." *Chemical Engineering Research and Design* 2014, 92(10), 1969-1975.
32. E. Jambi, X. Ni, B. McNeil, A. Basaleh and L. Harvey, "Comparative study of the power consumption on the production of xanthan using the traditional industrial stirred tank reactor and a novel oscillatory baffled reactor", *Life Science Journal*, Vol. 10, No. 4, 2013, 2241-2249.
33. M. Manninen, E. Gorshkova, K. Immonen and X. Ni, "Evaluation of axial dispersion and mixing performance in oscillatory baffled reactors using CFD", *Journal of Chemical Technology and Biotechnology*, Vol. 88, No. 4, 2013, 553-562.
34. Abbott MSR, Harvey AP, Perez GV, Theodorou MK. "Biological processing in oscillatory baffled reactors: operation, advantages and potential." *Interface Focus* 2013, 3(1), 20120036.
35. Eze VC, Phan AN, Pirez C, Harvey AP, Lee AF, Wilson K. "Heterogeneous catalysis in an oscillatory baffled flow reactor." *Catalysis Science and Technology* 2013, 3(9), 2373-2379.
36. Abernethy RA, Phan AN, Harvey AP. "L-glutamic acid crystallization in a mesoscale oscillatory baffled crystallizer." In: *Process Development Division 2013 - Core Programming Area at the 2013 AIChE Annual Meeting: Global Challenges for Engineering a Sustainable Future*. 2013, San Francisco, CA, USA: AIChE.
37. Rasdi FRM, Phan AN, Harvey AP. "Rapid determination of reaction order and rate constants of an imine synthesis reaction using a mesoscale oscillatory baffled reactor." *Chemical Engineering Journal* 2013, 222, 282-291.
38. X Nogueira , B. J. Taylor, H. Gomeza, I. Colominas, M. R. Mackley, "Experimental and computational modelling of oscillatory flow within a baffled tube containing periodic tri-orifice baffle geometries", *Computers and Chemical Engineering* 49, 11 1-17 (2013)
39. X. Ni, "Editorial on the 3rd European Process Intensification Conference", *Chemical Engineering Research and Design*, Vol. 90, 2012, 713.
40. C.J. Callahan and X. Ni, "Probing into nucleation mechanisms of cooling crystallization of sodium chlorate in a stirred tank crystallizer and an oscillatory baffled crystallizer", *Crystal Growth & Design*, Vol. 12 (5), 2012, 2525–2532.
41. Phan AN, Harvey AP. "Characterisation of mesoscale oscillatory helical baffled reactor-Experimental approach." *Chemical Engineering Journal* 2012, 180(2012), 229-236.

42. Solano JP, Herrero R, Espin S, Phan AN, Harvey AP. "Numerical study of the flow pattern and heat transfer enhancement in oscillatory baffled reactors with helical coil inserts." In: 3rd European Process Intensification Conference (EPIC). 2012, Manchester, UK: Elsevier Ltd.
43. C.J. Brown and X. Ni, "Determination of metastable zone width, mean particle size and detectable number density using video imaging in an oscillatory baffled crystallizer", *Crystal Engineering Communications*, Vol. 14 (8), 2012, 2944-2949.
44. Phan AN, Harvey AP, Eze V. "Rapid Production of Biodiesel in Mesoscale Oscillatory Baffled Reactors." *Chemical Engineering & Technology* 2012, 35(7), 1214-1220.
45. C.J. Brown and X. Ni, "Evaluation of growth kinetics of antisolvent crystallisation of paracetamol in an oscillatory baffled crystalliser utilizing video imaging", *Crystal Growth & Design*, Vol. 11(9), 2011, 3994-4000.
46. C.J. Brown and X. Ni, "Online evaluation of antisolvent crystallisation growth rate using video imaging in an oscillatory baffled crystalliser", *Crystal Growth & Design*, Vol. 11, 2011, 719-725.
47. Phan AN, Harvey A, Lavender J. "Characterisation of fluid mixing in novel designs of mesoscale oscillatory baffled reactors operating at low flow rates (0.3-0.6 ml/min)." *Chemical Engineering and Processing* 2011, 50(3), 254-263.
48. Phan AN, Harvey AP, Rawcliffe M. "Continuous screening of base-catalysed biodiesel production using New designs of mesoscale oscillatory baffled reactors." *Fuel Processing Technology* 2011, 92(8), 1560-1567.
49. Phan AN, Harvey AP. "Effect of geometrical parameters on fluid mixing in novel mesoscale oscillatory helical baffled designs." *Chemical Engineering Journal* 2011, 169(1-3), 339-347.
50. Herrero R, Solano JP, Harvey AP, Phan AN. "Flow field and heat transfer characteristics in oscillatory flow reactors with helical coil inserts." In: *European Process Intensification Conference (EPIC)*. 2011, Manchester, UK.
51. Phan AN, Harvey AP. "Novel mesoscale oscillatory baffled reactors- Development and characterisation." In: *European Process Intensification Conference (EPIC)*. 2011, Manchester, UK.
52. X. Ni and A. Liao, "Effects of Mixing, Seeding, Material and Final Temperature on Solution Crystallisation of L-glutamic Acid in an Oscillatory Baffled Crystalliser", *the Chemical Engineering Journal*, Vol. 156, 2010, 226-233.
53. C.J. Brown and X. Ni, "Evaluating the rate of cyclopentane hydrate formation in an oscillatory baffled column using laser induced fluorescence and energy balance", *the Chemical Engineering Journal*, Vol. 157, 2010, 131-139.
54. Phan AN, Harvey A. "Development and evaluation of novel designs of continuous mesoscale oscillatory baffled reactors." *Chemical Engineering Journal* 2010, 159(1-3), 212-219.
55. Harvey AP, Masngut N, Ikwebe J. "Potential uses of Oscillatory Baffled Reactors for Biofuel Production." *Biofuels* 2010, 1(4), 605-619.
56. S. Lawson, G. Steele, P. Shering, I. Laird, L. Zhao and X. Ni, "Continuous crystallisation of pharmaceuticals using a continuous oscillatory baffled crystalliser", *Organic Process Research & Development*, Vol. 13, 2009, 1357-1363.

57. Harvey AP, Troeger CN. "The Production of Polyhydroxyalkanoates using an Oscillatory Baffled Bioreactor." *Chemical Product and Process Modeling* 2009, 4(5), article 5.
58. R. Calderia and X. Ni, "Evaluation and establishment of a cleaning protocol for the Production of Vanisal Sodium and Aspirin using a Continuous Oscillatory Baffled Reactor", *Organic Process Research & Development*, Vol. 13, 2009, 1080-1087.
59. X. Ni and A. Liao, "Effects of cooling rate and solution concentration on solution crystallisation of L-glutamic acid in an oscillatory baffled crystalliser", *Journal of Crystal Growth and Design*, Vol. 8, No. 8, 2008, 2875-2881.
60. L. Ismail, R.E. Westacott and X. Ni, "On the effect of wax concentration on paraffin wax deposition in a batch oscillatory baffled tube apparatus", *the Chemical Engineering Journal*, Vol. 137, No. 2, 2008, 205-213.
61. D. Mignard, L.P. Amin and X. Ni, "Determination of breakage rates of oil droplets in a continuous oscillatory baffled tube", *Chemical Engineering Science*, Vol. 61, 2006, 6902-6917.
62. L. Ismail, R.E. Westacott and X. Ni, "A Study on the Formation of Paraffin Wax Deposit from Paraffin-Diesel System in a Batch Oscillatory Baffled Column", *Journal of Chemical Technology and Biotechnology*, Vol. 81, 2006, 1905-1914.
63. X. Ni, "Continuous oscillatory baffled reactor technology", *Innovations in Pharmaceutical Technology*, Issue 20, Autumn 2006, 90-96.
64. K.B.Smith and M.R.Mackley An experimental investigation into the scale up of oscillatory flow mixing in baffled tubes. *Trans IChemE, Part A*, Nov 84(A11): 1001–1011(2006)
65. B. Wilson, D.C. Sherrington and X. Ni, "On the butylation of phenylacetonitrile in an oscillatory baffled reactor", *Industrial & Engineering Chemistry Research*, Vol. 44 (23), 2005, 8663-8670.
66. A.W. Fitch, H. Jian and X. Ni, "An investigation of the effect of viscous fluids on mixing in an oscillatory baffled column using digital particle image velocimetry and computational fluid dynamics simulation", *the Chemical Engineering Journal*, Vol. 112, 2005, 197-210.
67. Reis N, Harvey AP, Mackley MR, Vicente AA, Teixeira JA. "Fluid mechanics and design aspects of a novel oscillatory flow screening mesoreactor." *Chemical Engineering Research and Design* 2005, 83(4 A), 357-371.
68. X. Ni and H. Jian, "A numerical study on the scale up behaviour in oscillatory baffled columns", *Chemical Engineering Research and Design*, Vol. 83(A10), 2005, 1163-1170.
69. H.K. Gaidhani, B. McNeil and X. Ni, "Fermentation of pullulan using an oscillatory baffled bioreactor", *the Chemical Engineering Research and Design*, Vol. 83(A6), 2005, 640-645.
70. N. Reis, A. P. Harvey, M. R. Mackley, A. A. Vicente and J. A. Teixeira, "Fluid Mechanics and design aspects of a novel oscillatory flow screening mesoreactor", *Trans IChemE A* 83(A4) 357-371 (2005)
71. X. Ni, A. Valentine, A. Liao, S.B.C. Sermage, G.B. Thomson and K.J. Roberts, "On the crystal polymorphic forms of L-glutamic acid following temperature programmed crystallisation in a batch oscillatory baffled crystalliser", *Crystal Growth and Design*, Vol. 4 (6), 2004, 1129-1135.

72. H. Jian, A.W. Fitch and X. Ni, "Numerical and experimental investigations into the effect of gap between baffle and wall on mixing in an oscillatory baffled column", the International Journal of Chemical Reactor Engineering, Vol. 2, 2004, A27, 1-16.
73. M.S.N. Oliveira and X. Ni, "Characterisation of a gas-liquid oscillatory baffled column: bubble size and gas holdup", the American Institute of Chemical Engineering Journal, Vol. 50, No. 11, 2004, 3019-3033.
74. M.S.N. Oliveira and X. Ni, "Effect of hydrodynamics on mass transfer in a gas-liquid oscillatory baffled column", the Chemical Engineering Journal, Vol. 99, 2004, 59-68.
75. D. Mignard, L. Amin and X. Ni, "Modelling of droplet breakage probabilities in an oscillatory baffled reactor", Chemical Engineering Science, Vol. 59, 2004, 2189-2200.
76. M.J. Hounslow and X. Ni, "Population balance modelling of droplet coalescence and break-up in an oscillatory baffled reactor", Chemical Engineering Science, Vol. 59, 2004, 819-828.
77. N. Reis, A.A. Vicente, J.A. Teixeira, M.R. Mackley, "Residence times and mixing of a novel continuous oscillatory flow screening reactor", Chemical Engineering Science 59. 4967 – 4974 (2004)
78. X. Ni, H. Jian and A.W. Fitch, "Evaluation of turbulent integral length scale in an oscillatory baffled column using large eddy simulation and digital particle image velocimetry", the Trans IChemE, Vol. 81, No. A8, 2003, 842-853.
79. X. Ni, A.W. Fitch, S. Higgins and P. Webster, "From maximum to most efficient manufacturing using a continuous oscillatory baffled reactor", Process Worldwide, Vol. 6, 2003, 30-31.
80. X. Ni, M.R. Mackley, A.P. Harvey, P. Stonestreet, M.H.I. Baird and N.V.Rama Rao, "Mixing through oscillation and pulsations -- a guide to achieving process enhancements in the chemicals and process industries", Trans IChemE, Vol. 81, Part A, 2003, 373-383.
81. H.K. Gaidhani, B. McNeil and X. Ni, "Production of pullulan using an oscillatory baffled bioreactor", Journal of Chemical Technology and Biotechnology, Vol. 78, 2003, 260-264.
82. H. Jian and X. Ni, "On modelling turbulent flow in an oscillatory baffled column --- RANS model or large eddy simulation", Journal of Chemical Technology and Biotechnology, Vol. 78, 2003, 321-325.
83. M.S.N. Oliveira, A.W. Fitch and X. Ni, "A study of velocity and residence time of single bubbles in a gassed oscillatory baffled column: Effect of oscillation amplitude", Journal of Chemical Technology and Biotechnology, Vol. 78, 2003, 220-226.
84. D. Mignard, L. Amin and X. Ni, "Population balance modelling droplets in an oscillatory baffled reactor – using direct measurement of breakage rate constants", Journal of Chemical Technology and Biotechnology, Vol. 78, 2003, 364-369.
85. A.W. Fitch and X. Ni, "Using non-intrusive laser induced fluorescence in characterisation of mixing in an oscillatory baffled column", Journal of Chemical Technology and Biotechnology, Vol. 78, 2003, 326-331.
86. M.S.N. Oliveira, A.W. Fitch and X. Ni, "Bubble velocity and bubble residence time in a gassed oscillatory baffled column: Effect of oscillation frequency", Transactions of Institution of Chemical Engineers, Vol. 81, Part A, 2003, 233-242.

87. A.W. Fitch and X. Ni, "On the determination of axial dispersion coefficient in a batch oscillatory baffled column using laser induced fluorescence", the Chemical Engineering Journal, Vol. 92, 2003, 243-253.
88. Harvey AP, Mackley MR and Seliger T, "Process intensification of biodiesel production using a continuous oscillatory flow reactor." J Chem Technol & Biotechnol 78, 338-341, 2003.
89. Harvey AP, Mackley MR, Seliger T. "Process intensification of biodiesel production using a continuous oscillatory flow reactor." Journal of Chemical Technology and Biotechnology 2003, 78(2-3), 338-341.
90. Stonestreet P, Harvey AP. "A mixing-based design methodology for continuous oscillatory flow reactors." Chemical Engineering Research and Design 2002, 80(1), 31-44.
91. D.C. Sherrington, A. Lanver, H. Schmalz, B. Wilson, X. Ni and S. Yuan, "Gram-scale synthesis of suspension polymerised styrene – divinylbenzene based resins using an oscillatory baffled reactor", Angewandte Chemie, Vol. 114, No. 19, 2002, 3808-3811.
92. D.C. Sherrington, A. Lanver, H. Schmalz, B. Wilson, X. Ni and S. Yuan, "Gram-scale synthesis of suspension polymerised styrene – divinylbenzene based resins using an oscillatory baffled reactor", Angewandte Chemie International Edition, Vol. 41, No. 19, 2002, 3656-3659.
93. X. Ni, D. Mignard, B. Saye, J.C. Johnstone and N. Pereira, "On the evaluation of droplet breakage and coalescence rates in an oscillatory baffled reactor", Chemical Engineering Science, 57, No. 11, 2002, 2101-2114.
94. X. Ni, H. Jian and A.W. Fitch, "CFD modelling of flow patterns in an oscillatory baffled column", Chemical Engineering Science, Vol. 57, No. 14, 2002, 2849-2862.
95. X. Ni, K.R. Murray, Y. Zhang, D.C. Bennett and T. Howes, "Polymer product-engineering utilising oscillatory baffled reactors", Powder Technology, Vol. 124, No. 3, 2002, 281-286.
96. X. Ni, Y. Sommer de Gélécourt, J. Neil and T. Howes, "On the effect of tracer density on axial dispersion in a batch oscillatory baffled column", the Chemical Engineering Journal, Vol. 85, No.1, 2002, 17-25.
97. G. Stephens, and M. R. Mackley, "Heat Transfer Performance for Batch Oscillatory Flow Mixing", Journal of Experimental Thermal and Fluid Science, 25 (8), 583-594, (2002)
98. M.S.N. Oliveira and X. Ni, "Gas holdup and bubble diameters in a gassed oscillatory baffled column", Chemical Engineering Science, Vol. 56, No.21-22, 2001, 6143-6148.
99. C. T. Lee, M. R. Mackley, P. Stonestreet, and A. P. J. Middelburg, "Protein refolding in an oscillatory flow reactor", Biotechnology letters 23 1899, 1901 (2001)
100. B. Wilson, X. Ni and D.C. Sherrington, "On the investigation of a phase transfer catalytic reaction in an oscillatory baffled reactor", Journal of Industrial and Engineering Chemistry Research, Vol. 40, No. 23, 2001, 5300-5304.
101. A. P. Harvey, M. R. Mackley and P. Stonestreet. "Operation and optimisation of an oscillatory flow continuous reactor." Ind.Eng.Chem.Res. 40 5371-5377 (2001)
102. A.W. Fitch, X. Ni and J. Stewart, "Characterisation of flexible baffles in an oscillatory baffled column", Journal of Chemical Technology and Biotechnology, Vol. 76, 2001, 1074-1079.

103. X. Ni, Y. Sommer de Gélécourt, M.H.I. Baird and N.V.Rama Rao, "Scale-up of single phase axial dispersion in batch and continuous oscillatory baffled tubes", the Canadian Journal of Chemical Engineering, Vol. 79, No. 3, 2001, 444-448.
104. X. Ni, J.C. Johnstone, K.C. Symes, B.D. Grey and D.C. Bennett, "Suspension polymerisation of acrylamide in an oscillatory baffled reactor: from drops to particles", the American Institute of Chemical Engineering Journal, Vol. 47, No. 8, 2001, 1746-1757.
105. M. Erbedinger, X. Ni and P.J. Halling, "Kinetics of enzymatic solid-to-solid peptide synthesis: synthesis of Z-aspartame and control of acid-base conditions by using inorganic salts", Journal of Biotechnology and Bioengineering, Vol. 72, No.1, 2001, 69-76.
106. B. Wilson, X. Ni and D.C. Sherrington, "A study of a phase transfer catalytic reaction between N-Butyl bromide and sodium phenolate in an oscillatory baffled reactor", Studies in Surface Science and Catalysis 133, 2001, 481-487.
107. N.E. Pereira and X. Ni, "Droplet size distribution in a continuous oscillatory baffled reactor", Chemical Engineering Science, Vol. 56, No. 3, 2001, 735-739.
108. J.C. Johnstone, B. Saye and X. Ni, "On the droplet breakage and coalescence rates in an oscillatory baffled reactor", Chemie Ingenieur Technik (73), 6, 2001, 744-746.
109. M. Erbedinger, P.J. Halling and X. Ni, "Scale up of enzymatic solid-to-solid peptide synthesis and enzyme recovery", the American Institute of Chemical Engineering Journal, Vol. 47, No. 2, 2001, 500-508.
110. X. Ni, J.A. Cosgrove, R.H. Cumming, C.A. Greated, K.R. Murray and P. Norman, "Experimental study of flocculation of bentonite and *Alcaligenes eutrophus* in a batch oscillatory baffled flocculator", Transactions of Institution of Chemical Engineers, Vol. 79, Part A, 2001, 33-40.
111. Harvey AP, Mackley MR, Stonestreet P. "Operation and Optimization of an Oscillatory Flow Continuous Reactor." *Industrial & Engineering Chemistry Research* 2001, 40(23), 5371-5377.
112. Harvey AP, Stonestreet P. "Oscillatory Flow: a Technology Ready to Deliver." *The Chemical Engineer* 2001, 720, 41.
113. X. Ni, D.C. Bennett, K.C. Symes and B.D. Grey, "On the inverse phase suspension polymerisation of acrylamide in a batch oscillatory baffled reactor", *Journal of Applied Polymer Science*, Vol. 76, 2000, 1669-1676.
114. X. Ni, G. Nelson and I. Mustafa, "Flow patterns and oil-water dispersion in a 0.38 m diameter oscillatory baffled column", the Canadian Journal of Chemical Engineering, Vol. 78, No. 1, 2000, 211-220.
115. X. Ni and N. Pereira, "Parameters affecting fluid dispersion in a continuous oscillatory baffled tube". *American Institute of Chemical Engineering Journal*, Vol. 46, No. 1, 2000, 37-45.
116. X. Ni, J.A. Cosgrove, A.D. Arnott, C.A. Greated and R.H. Cumming, "On the measurement of strain rate in an oscillatory baffled column using particle image velocimetry". *Chemical Engineering Science*, Vol. 55, No.16, 2000, 3195-3208.
117. G. Nelson, X. Ni, J. Johnstone and T. Howes, "Droplet breakage behaviour in a pilot oscillatory baffled column", *Proceedings of Chemeca 2000, Perth, Australia, 2000*, 419-423.

118. G. Nelson and X. Ni, "Experimental measurement of droplet size distribution of a MMA suspension in a batch oscillatory baffled column of 0.21m diameter", Proceedings of the 10th European Conference on Mixing, Delft, Netherlands, 2000, 509-516.
119. N.E. Pereira, X. Ni and J.C. Johnstone, "Droplet size distribution in a continuous oscillatory baffled reactor", 16th International Symposium on Chemical Reaction Engineering, Cracow, Poland, 2000, 114-115.
120. X. Ni and C.C. Stevenson, "On the effect of gas size between baffle outer diameter and tube diameter on mixing in an oscillatory baffled column". Journal of Chemical Technology and Biotechnology, Vol. 74, No. 6, 1999, 587-593.
121. X. Ni, Y. Zhang and I. Mustafa, "Correction of polymer particle size with droplet size in suspension polymerisation of methylmethacrylate in a batch oscillatory baffled reactor". Chemical Engineering Science, Vol. 54, 1999, 841-850.
122. M. Erbedinger, X. Ni and P. J. Halling, "Kinetics of enzymatic solid-to-solid peptide synthesis: inter-substrate compound, substrate ratio and mixing effects". Journal of Biotechnology and Bioengineering, Vol. 63, No. 3, 1999, 316-321.
123. X. Ni, Y. Zhang and I. Mustafa, "An investigation of droplet size and size distribution in methylmethacrylate suspensions in a batch oscillatory baffled reactor". Chemical Engineering Science, Vol. 53, No. 16, 1998, 2903-2919.
124. X. Ni, G. Brogan, A. Struthers, D.C. Bennett and S.F. Wilson, "A systematic study of the effect of geometrical parameters on mixing time in oscillatory baffled columns". Transactions of Institution of Chemical Engineers, Vol. 76, Part A, 1998, 635-642.
125. M. Erbedinger, X. Ni and P. J. Halling, "Enzymatic synthesis with mainly undissolved substrates at very high concentrations". Enzyme and Microbial Technology, Vol. 23, 1998, 141-148.
126. S. Gao, X. Ni, R.H. Cumming, C.A. Greated and P.I. Norman, "Experimental investigation of particle flocculation in a batch oscillatory baffled reactor". Separation Science and Technology, Vol. 33, No. 14, 1998, 2143-2157.
127. M. Erbedinger, X. Ni and P. J. Halling, "Effect of water and enzyme concentration on thermolysin-catalysed solid-solid peptide synthesis". Journal of Biotechnology and Bioengineering, Vol. 59, No. 1, 1998, 68-72.
128. X. Ni, Y. Zhang and I. Mustafa, "Suspension polymerisation of styrene in a batch oscillatory-baffled reactor". 6th International Workshop on Polymer Reaction Engineering, Vol. 134, Berlin, 1998, 273-283.
129. S.J. Wright and M.R. Mackley. "Oscillatory flow mixers: a novel design for reactors with plug flow behaviour and the ability to suspend particles", Proceedings of Chemeca '98, Port Douglas, Australia (1998).
130. X. Ni and P. Gough, "On the discussion of the dimensionless groups governing oscillatory flow in a baffled tube". Chemical Engineering Science, Vol. 52, No. 18, 1997, 3209-3212.
131. P Stonestreet and M. R. Mackley. "Evaluation of oscillatory flow mixing in tubular reactors for continuous processing." Process Intensification in Practice. Ed BHR Group 247-263 (1997).
132. P. Gough, X. Ni and K.C. Symes, "Experimental flow visualisation in a modified pulsed baffled reactor". Journal of Chemical Technology and Biotechnology, Vol. 69, No. 3, 1997, 321-328.

133. X. Ni, S.Gao and L. Santangeli, "On the effect of surfactant on mass transfer to water-glycerol solutions in a pulsed baffled reactor". *Journal of Chemical Technology and Biotechnology*, Vol. 69, No. 2, 1997, 247-253.
134. X. Ni, Y. Zhang and I. Mustafa, "Experimental heat transfer measurements in a batch oscillatory-baffled reactor". *Associazione Italiana di Ingegneria Chimica series*, Vol. 2, 1997, 271-278.
135. X. Ni, R. Cousins, P. Neilson and I. Airdie, "A study of pulsed-baffled membrane oxygenation". *1st European Congress on Chemical Engineering, Florence*, Vol. 2, 1997, 1249-1252.
136. X. Ni, Y. Zhang and I. Mustafa, "Experimental heat transfer measurements in a batch pulsed baffled reactor". *1st European Congress on Chemical Engineering, Florence*, Vol. 3, 1997, 1685-1688.
137. S. Liu, D. J. Mason, X. Ni and C. A. Greated, "Particle image velocimetry study of oscillatory flow in baffled tubes", *Sensors and Their Applications VIII*, Ed. A. T. Augousti, and N. M. White, Institute of Physics Publishing, Bristol and Philadelphia, 1997, 335-340.
138. X. Ni and S. Gao, "Scale up correlation for mass transfer coefficients in pulsed baffled reactors". *The Chemical Engineering Journal*, Vol. 63, No. 3, 1996, 157-166.
139. M.R. Mackley, P. Stonestreet, E.P.L. Roberts and X. Ni, "Residence time distribution enhancement in reactors using oscillatory flow". *Transactions of Institution of Chemical Engineers*, Vol. 74, Part A, 1996, 541-545.
140. E. P. L. Roberts and M. R. Mackley. "The development of asymmetry and period doubling for oscillatory flow in baffled channels." *Journal of Fluid Mechanics*. 328, 19-48 (1996).
141. Y. Zhang, X. Ni and I. Mustafa, "A study of oil-water dispersion in a pulsed baffled reactor". *Journal of Chemical Technology and Biotechnology*, Vol. 66, 1996, 305-311.
142. X. Ni and S.Gao, "Mass transfer characteristics in a pilot pulsed baffled reactor". *Journal of Chemical Technology and Biotechnology*, Vol. 65, 1996, 65-71.
143. Y. Zhang, X. Ni and I. Mustafa, "Experimental investigation on liquid-liquid dispersion in a pulsed baffled reactor". *Institution of Chemical Engineers Research Event*, Vol. 2, 1996, 760-762.
144. S. Gao and X. Ni, "Mass transfer in yeast culture in a pulsed baffled reactor and a stirred tank fermenter". *Institution of Chemical Engineers Research Event*, Vol. 2, 1996, 712-714.
145. X. Ni, S. Gao and D.W. Pritchard, "A study of mass transfer in yeast in a pulsed baffled bioreactor". *Journal of Biotechnology and Bioengineering*, Vol. 45, No. 2, 1995, 165-175.
146. X. Ni, S. Liu, M.J. Joye, P. Grewal and C.A. Greated, "A study of velocity vector profiles and strain rate distributions for laminar and oscillatory flows in a baffled tube using particle image velocimetry". *Journal of Flow Visualisation and Image Processing*, Vol. 2, No. 2, 1995, 135-147.
147. X. Ni, S. Gao, R.H. Cumming and D.W. Pritchard, "A comparative study of mass transfer in yeast for a batch pulsed baffled bioreactor and a stirred tank fermentor". *Chemical Engineering Science*, Vol. 50, No. 13, 1995, 2127-2136.
148. S. Liu, X. Ni, C.A. Greated and P.J. Fryer, "Measurements of velocities of single particles for steady and oscillatory flows in plain and baffled tubes". *Transactions of Institution of Chemical Engineers*, Vol. 73, Part A, 1995, 727-732.

149. X. Ni, "A study of fluid dispersion in oscillatory flow through a baffled tube". *Journal of Chemical Technology and Biotechnology*, Vol. 64, 1995, 165-174.
150. X. Ni, S. Gao and R.H. Cumming, "Mixing and dispersion of polymer solution in a pulsed baffled reactor". *Institution of Chemical Engineers Research Event*, Vol. 1, 1995, 526-528.
151. X. Ni, S. Liu and C.A. Greated, "Measurement of velocity profiles for oscillatory flow in a baffled tube using particle image velocimetry". *Institution of Chemical Engineers Research Event*, Vol. 2, 1995, 734-736.
152. M.R. Mackley, P. Stonestreet, E.P.L. Roberts and X. Ni, "Process and product enhancement using oscillatory flow in baffled tubes". *1st International Conference on Science, Engineering and Technology of Intensive Processing*, Nottingham, 1995, 15-18.
153. M. R. Mackley and P. Stonestreet, "Heat transfer and associated energy dissipation for oscillatory flow in baffled tubes." *Chem Eng Sci.* 50,14,2211-224 (1995).
154. X. Ni, "Residence time distribution measurements in a pulsed baffled tube bundle". *Journal of Chemical Technology and Biotechnology*, Vol. 59, 1994, 213-221.
155. X. Ni and M.R. Mackley, "Chemical reaction in batch pulsatile flow and stirred tank reactors". *The Chemical Engineering Journal*, Vol. 52, 1993, 107-114.
156. M.R. Mackley and X. Ni, "Experimental fluid dispersion measurements in periodic baffled tube arrays". *Chemical Engineering Science*, Vol. 48, No. 18, 1993, 3293-3305.
157. X. Ni, J. A. McGeough and C.A. Greated, "A high speed photographic study of enhanced electrochemical arc machining". *Journal of Electrochemical Society*, Vol. 40, No. 12, 1993, 3505-3512.
158. X. Ni, "Fluid mechanics, power consumption and chemical reaction in a pulsed baffled reactor". *3rd Symposium of Experimental and Numerical Flow Visualisation*, American Society of Mechanical Engineers, New Orleans, Vol. 172, 1993, 1-9.
159. M. R. Mackley, K. B. Smith and N. P. Wise. "The mixing and separation of particle suspensions using oscillatory flow in baffled tubes." *Trans IChem E*, 71A, 649-656 (1993).
160. M. J. Hewgill, M.R. Mackley, A.B. Pandit and S.S. Pannu. "Enhancement of gas liquid mass transfer using oscillatory flow in a baffled tube." *Chem. Eng. Sci.* 48, 4, 799 -809 (1993).
161. M.R. Mackley and X. Ni, "Mixing and dispersion in a baffled tube for steady laminar and pulsatile flow". *Chemical Engineering Science*, Vol. 46, No. 12, 1991, 3139-3151.
162. M. R. Mackley. "Process innovation using oscillatory flow within baffled tubes." *Trans I.Chem.E.* 69A, 198-199 (1991).
163. T. Howes and M.R. Mackley. "Experimental axial dispersion for oscillatory flow through a baffled tube." *Chem. Eng. Sci.* 45, 5, 1349-1358 (1990).
164. M. R. Mackley, G.M. Tweddle and I.D. Wyatt. "Experimental heat transfer measurements for pulsatile flow in baffled tubes." *Chem. Eng. Sci.* 45, 5, 1237-1242 (1990).
165. H. W. Dickens, M. R. Mackley and H. R. Williams. "Residence time distributions of oscillatory flows in baffled tubes". *Chem. Eng. Sci.* 44, 7, 1471-1479, (1989).

166. C. R. Brunold, J. C. B. Hunns, M. R. Mackley and J.W. Thompson. "Experimental observations on flow patterns and energy losses for oscillatory flow in ducts containing sharp edges." Chem. Eng. Sci.,44, 5, 1227-1244 (1989).