

# Richard A Bourne

## List of Publications by Year in descending order

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88  
papers

3,575  
citations

136950

32  
h-index

149698

56  
g-index

95  
all docs

95  
docs citations

95  
times ranked

3543  
citing authors

#	ARTICLE	IF	CITATIONS
1	Machine learning meets continuous flow chemistry: Automated optimization towards the Pareto front of multiple objectives. <i>Chemical Engineering Journal</i> , 2018, 352, 277-282.	12.7	221
2	The 24 Principles of Green Engineering and Green Chemistry: <i>Green Chemistry</i> , 2008, 10, 268.	9.0	205
3	Maximising opportunities in supercritical chemistry: the continuous conversion of levulinic acid to $\beta$ -valerolactone in CO <sub>2</sub> . <i>Chemical Communications</i> , 2007, , 4632.	4.1	176
4	Making electrochemistry easily accessible to the synthetic chemist. <i>Green Chemistry</i> , 2020, 22, 3358-3375.	9.0	176
5	Real-time Product Switching Using a Twin Catalyst System for the Hydrogenation of Furfural in Supercritical CO <sub>2</sub> . <i>Angewandte Chemie - International Edition</i> , 2010, 49, 8856-8859.	13.8	134
6	Self-Optimizing Continuous Reactions in Supercritical Carbon Dioxide. <i>Angewandte Chemie - International Edition</i> , 2011, 50, 3788-3792.	13.8	113
7	Inducing fractures and increasing cleat apertures in a bituminous coal under isotropic stress via application of microwave energy. <i>International Journal of Coal Geology</i> , 2011, 88, 75-82.	5.0	111
8	Online quantitative mass spectrometry for the rapid adaptive optimisation of automated flow reactors. <i>Reaction Chemistry and Engineering</i> , 2016, 1, 96-100.	3.7	101
9	Automated self-optimisation of multi-step reaction and separation processes using machine learning. <i>Chemical Engineering Journal</i> , 2020, 384, 123340.	12.7	97
10	Remote-controlled experiments with cloud chemistry. <i>Nature Chemistry</i> , 2015, 7, 1-5.	13.6	96
11	Algorithms for the self-optimisation of chemical reactions. <i>Reaction Chemistry and Engineering</i> , 2019, 4, 1545-1554.	3.7	92
12	Self-optimisation of the final stage in the synthesis of EGFR kinase inhibitor AZD9291 using an automated flow reactor. <i>Reaction Chemistry and Engineering</i> , 2016, 1, 366-371.	3.7	89
13	Cleaner Continuous Photo-oxidation Using Singlet Oxygen in Supercritical Carbon Dioxide. <i>Angewandte Chemie - International Edition</i> , 2009, 48, 5322-5325.	13.8	86
14	Highly Selective and Solvent-Dependent Reduction of Nitrobenzene to <i>N</i> -Phenylhydroxylamine, Azoxybenzene, and Aniline Catalyzed by Phosphino-Modified Polymer Immobilized Ionic Liquid-Stabilized AuNPs. <i>ACS Catalysis</i> , 2019, 9, 4777-4791.	11.2	77
15	Continuous catalytic upgrading of ethanol to n-butanol and $C_4$ products over Cu/CeO <sub>2</sub> catalysts in supercritical CO <sub>2</sub> . <i>Green Chemistry</i> , 2015, 17, 3018-3025.	9.0	72
16	Rapid multistep kinetic model generation from transient flow data. <i>Reaction Chemistry and Engineering</i> , 2017, 2, 103-108.	3.7	71
17	Immobilised photosensitisers for continuous flow reactions of singlet oxygen in supercritical carbon dioxide. <i>Chemical Science</i> , 2011, 2, 1059.	7.4	65
18	Highly efficient aqueous phase reduction of nitroarenes catalyzed by phosphine-decorated polymer immobilized ionic liquid stabilized PdNPs. <i>Catalysis Science and Technology</i> , 2018, 8, 1454-1467.	4.1	63

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19	Real-Time Feedback Control Using Online Attenuated Total Reflection Fourier Transform Infrared (ATR) Tj ETQq1 1 2013, 67, 1127-1131.	0.784314 2.2	62
20	Adaptive Process Optimization for Continuous Methylation of Alcohols in Supercritical Carbon Dioxide. Organic Process Research and Development, 2011, 15, 932-938.	2.7	58
21	Continuous Acid-Catalyzed Methylations in Supercritical Carbon Dioxide: Comparison of Methanol, Dimethyl Ether and Dimethyl Carbonate as Methylating Agents. Organic Process Research and Development, 2010, 14, 411-416.	2.7	49
22	The continuous self aldol condensation of propionaldehyde in supercritical carbon dioxide: a highly selective catalytic route to 2-methylpentenal. Green Chemistry, 2009, 11, 409.	9.0	47
23	Maximising the efficiency of continuous photo-oxidation with singlet oxygen in supercritical CO <sub>2</sub> by use of fluoros biphasic catalysis. Chemical Communications, 2012, 48, 3073.	4.1	46
24	Kinetic Treatments for Catalyst Activation and Deactivation Processes based on Variable Time Normalization Analysis. Angewandte Chemie - International Edition, 2019, 58, 10189-10193.	13.8	46
25	Homogeneous photochemical oxidation via singlet O <sub>2</sub> in supercritical CO <sub>2</sub> . Chemical Communications, 2008, , 4457.	4.1	45
26	The Effect of Self-Optimisation Targets on the Methylation of Alcohols Using Dimethyl Carbonate in Supercritical CO <sub>2</sub> . Journal of Flow Chemistry, 2012, 2, 24-27.	1.9	41
27	Highly efficient aqueous phase chemoselective hydrogenation of $\alpha,\beta$ -unsaturated aldehydes catalysed by phosphine-decorated polymer immobilized IL-stabilized PdNPs. Green Chemistry, 2017, 19, 1635-1641.	9.0	39
28	Alternating polarity for enhanced electrochemical synthesis. Reaction Chemistry and Engineering, 2021, 6, 147-151.	3.7	37
29	Adsorption of Pd(hfac) <sub>2</sub> on mesoporous silica SBA-15 using supercritical CO <sub>2</sub> and its role in the performance of Pd-SiO <sub>2</sub> catalyst. Journal of Supercritical Fluids, 2012, 69, 21-28.	3.2	36
30	Synthesis of antimalarial trioxanes via continuous photo-oxidation with $^{1}O_2$ in supercritical CO <sub>2</sub> . Green Chemistry, 2013, 15, 177-180.	9.0	36
31	Strategies for cleaner oxidations using photochemically generated singlet oxygen in supercritical carbon dioxide. Green Chemistry, 2009, 11, 1787.	9.0	34
32	Enhanced process development using automated continuous reactors by self-optimisation algorithms and statistical empirical modelling. Tetrahedron, 2018, 74, 3158-3164.	1.9	34
33	All-aqueous continuous-flow RAFT dispersion polymerisation for efficient preparation of diblock copolymer spheres, worms and vesicles. Reaction Chemistry and Engineering, 2019, 4, 852-861.	3.7	34
34	Mixing performance and continuous production of nanomaterials in an advanced-flow reactor. Chemical Engineering Journal, 2021, 412, 128565.	12.7	34
35	Rapid, automated determination of reaction models and kinetic parameters. Chemical Engineering Journal, 2021, 413, 127017.	12.7	33
36	Heteroatom Donor-Decorated Polymer-Immobilized Ionic Liquid Stabilized Palladium Nanoparticles: Efficient Catalysts for Room-Temperature Suzuki-Miyaura Cross-Coupling in Aqueous Media. Advanced Synthesis and Catalysis, 2018, 360, 3716-3731.	4.3	32

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37	Flow chemistry for process optimisation using design of experiments. <i>Journal of Flow Chemistry</i> , 2021, 11, 75-86.	1.9	32
38	Autonomous polymer synthesis delivered by multi-objective closed-loop optimisation. <i>Polymer Chemistry</i> , 2022, 13, 1576-1585.	3.9	32
39	Salt enhanced solvent relaxation and particle surface area determination via rapid spin-lattice NMR. <i>Powder Technology</i> , 2018, 333, 458-467.	4.2	28
40	Catalytic nanoreactors in continuous flow: hydrogenation inside single-walled carbon nanotubes using supercritical CO <sub>2</sub> . <i>Chemical Communications</i> , 2014, 50, 5200-5202.	4.1	27
41	Efficient and selective oxidation of sulfides in batch and continuous flow using styrene-based polymer immobilised ionic liquid phase supported peroxotungstates. <i>RSC Advances</i> , 2016, 6, 73118-73131.	3.6	27
42	Could the energy cost of using supercritical fluids be mitigated by using CO <sub>2</sub> from carbon capture and storage (CCS)? <i>Green Chemistry</i> , 2011, 13, 2727.	9.0	26
43	Supercritical CO <sub>2</sub> Mediated Incorporation of Pd onto Templated Carbons: A Route to Optimizing the Pd Particle Size and Hydrogen Uptake Density. <i>ACS Applied Materials &amp; Interfaces</i> , 2013, 5, 5639-5647.	8.0	24
44	Experimental validation of calculated atomic charges in ionic liquids. <i>Journal of Chemical Physics</i> , 2018, 148, 193817.	3.0	24
45	A one-pot-one-reactant synthesis of platinum compounds at the nanoscale. <i>Nanoscale</i> , 2017, 9, 14385-14394.	5.6	22
46	Rapid production of block copolymer nano-objects <i>via</i> continuous-flow ultrafast RAFT dispersion polymerisation. <i>Polymer Chemistry</i> , 2020, 11, 3465-3474.	3.9	22
47	Data fusion strategies to combine sensor and multivariate model outputs for multivariate statistical process control. <i>Analytical and Bioanalytical Chemistry</i> , 2020, 412, 2151-2163.	3.7	22
48	The Continuous Acid-Catalysed Etherification of Aliphatic Alcohols Using Stoichiometric Quantities of Dialkyl Carbonates. <i>Organic Process Research and Development</i> , 2010, 14, 1420-1426.	2.7	21
49	Automated multi-objective reaction optimisation: which algorithm should I use?. <i>Reaction Chemistry and Engineering</i> , 2022, 7, 987-993.	3.7	21
50	2DCOR-GC: An Application of the Generalized Two-Dimensional Correlation Analysis as a Route To Optimization of Continuous Flow Supercritical Fluid Reactions. <i>Analytical Chemistry</i> , 2004, 76, 6197-6206.	6.5	20
51	Green chemistry: what is the way forward?. <i>Mendeleev Communications</i> , 2011, 21, 235-238.	1.6	20
52	Atomic charges of sulfur in ionic liquids: experiments and calculations. <i>Faraday Discussions</i> , 2017, 206, 183-201.	3.2	20
53	Self-optimising reactive extractions: towards the efficient development of multi-step continuous flow processes. <i>Journal of Flow Chemistry</i> , 2020, 10, 199-206.	1.9	20
54	X-ray spectroscopy for chemistry in the 2-4 keV energy regime at the XMaS beamline: ionic liquids, Rh and Pd catalysts in gas and liquid environments, and Cl contamination in $\beta\text{-Al}_2\text{O}_3$ . <i>Journal of Synchrotron Radiation</i> , 2015, 22, 1426-1439.	2.4	19

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55	Activation and Deactivation of a Robust Immobilized Cp*Ir-Transfer Hydrogenation Catalyst: A Multielement <i>in Situ</i> X-ray Absorption Spectroscopy Study. <i>Journal of the American Chemical Society</i> , 2015, 137, 4151-4157.	13.7	19
56	Process Monitoring of Moisture Content and Mass Transfer Rate in a Fluidised Bed with a Low Cost Inline MEMS NIR Sensor. <i>Pharmaceutical Research</i> , 2020, 37, 84.	3.5	19
57	NEXAFS spectroscopy of ionic liquids: experiments versus calculations. <i>Physical Chemistry Chemical Physics</i> , 2017, 19, 31156-31167.	2.8	16
58	Thermal stability of dialkylimidazolium tetrafluoroborate and hexafluorophosphate ionic liquids: <i>ex situ</i> bulk heating to complement <i>in situ</i> mass spectrometry. <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 16786-16800.	2.8	16
59	Definitive screening designs for multistep kinetic models in flow. <i>Reaction Chemistry and Engineering</i> , 2019, 4, 1565-1570.	3.7	16
60	Autonomous optimisation of a nanoparticle catalysed reduction reaction in continuous flow. <i>Chemical Communications</i> , 2021, 57, 4926-4929.	4.1	16
61	An automated computational approach to kinetic model discrimination and parameter estimation. <i>Reaction Chemistry and Engineering</i> , 2021, 6, 1404-1411.	3.7	16
62	MVMOO: Mixed variable multi-objective optimisation. <i>Journal of Global Optimization</i> , 2021, 80, 865-886.	1.8	16
63	Modern advancements in continuous-flow aided kinetic analysis. <i>Reaction Chemistry and Engineering</i> , 2022, 7, 1037-1046.	3.7	16
64	Kinetic Treatments for Catalyst Activation and Deactivation Processes based on Variable Time Normalization Analysis. <i>Angewandte Chemie</i> , 2019, 131, 10295-10299.	2.0	15
65	Electrochemical Generation of <i>N</i> -Heterocyclic Carbenes for Use in Synthesis and Catalysis. <i>Advanced Synthesis and Catalysis</i> , 2021, 363, 3189-3200.	4.3	15
66	A Hybridised Optimisation of an Automated Photochemical Continuous Flow Reactor. <i>Chimia</i> , 2019, 73, 817.	0.6	11
67	Efficient Hydrolytic Hydrogen Evolution from Sodium Borohydride Catalyzed by Polymer Immobilized Ionic Liquid-Stabilized Platinum Nanoparticles. <i>ChemCatChem</i> , 2022, 14, .	3.7	11
68	Direct Synthesis of Multiplexed Metal-Nanowire-Based Devices by Using Carbon Nanotubes as Vector Templates. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 9928-9932.	13.8	10
69	A Versatile Electrochemical Batch Reactor for Synthetic Organic and Inorganic Transformations and Analytical Electrochemistry. <i>Organic Process Research and Development</i> , 2020, 24, 1084-1089.	2.7	10
70	Chapter 12. The Growing Impact of Continuous Flow Methods on the Twelve Principles of Green Chemistry. <i>RSC Green Chemistry</i> , 2016, , 140-155.	0.1	10
71	Electron spectroscopy of ionic liquids: experimental identification of atomic orbital contributions to valence electronic structure. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 18893-18910.	2.8	9
72	Introduction to Synthesis 4.0: towards an internet of chemistry. <i>Reaction Chemistry and Engineering</i> , 2019, 4, 1504-1505.	3.7	8

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73	On-Demand Electrochemical Synthesis of Tetrakisacetonitrile Copper(I) Triflate and Its Application in the Aerobic Oxidation of Alcohols. <i>Inorganic Chemistry</i> , 2021, 60, 6976-6980.	4.0	6
74	Highly efficient and selective aqueous phase hydrogenation of aryl ketones, aldehydes, furfural and levulinic acid and its ethyl ester catalyzed by phosphine oxide-decorated polymer immobilized ionic liquid-stabilized ruthenium nanoparticles. <i>Catalysis Science and Technology</i> , 0, , .	4.1	6
75	Characterisation of polyphosphate coated aluminium-doped titania nanoparticles during milling. <i>Journal of Colloid and Interface Science</i> , 2019, 548, 110-122.	9.4	5
76	Statistical quantification of sub-sampling representativeness and uncertainty for waste-derived solid recovered fuel (SRF): Comparison with theory of sampling (ToS). <i>Journal of Hazardous Materials</i> , 2020, 388, 122013.	12.4	5
77	Direct Synthesis of Multiplexed Metal-Nanowire-Based Devices by Using Carbon Nanotubes as Vector Templates. <i>Angewandte Chemie</i> , 2019, 131, 10033-10037.	2.0	4
78	Computational fluid dynamic enabled design optimisation of miniaturised continuous oscillatory baffled reactors in chemical processing. <i>International Journal of Computational Fluid Dynamics</i> , 2019, 33, 317-331.	1.2	4
79	Decoupling the relative rate of hydrogen uptake via convection and mass transfer by a single catalytic pellet in a scaled down trickle bed reactor. <i>Chemical Engineering Journal</i> , 2020, 394, 124290.	12.7	4
80	Selective separation of amines from continuous processes using automated pH controlled extraction. <i>Reaction Chemistry and Engineering</i> , 2021, 6, 1806-1810.	3.7	4
81	Acid number, viscosity and end-point detection in a multiphase high temperature polymerisation process using an online miniaturised MEMS Fabry-Pérot interferometer. <i>Talanta</i> , 2021, 224, 121735.	5.5	4
82	MEMS Fabry-Perot Interferometer Based Spectral Sensors for Industrial Applications. , 2017, , .		4
83	Improved conversion of residual MSW biomass waste to sugars using online process monitoring and integrated contamination control. <i>Bioresource Technology Reports</i> , 2021, 13, 100612.	2.7	3
84	Development of a multistep, electrochemical flow platform for automated catalyst screening. <i>Catalysis Science and Technology</i> , 2022, 12, 4266-4272.	4.1	3
85	Resonant Electron Spectroscopy: Identification of Atomic Contributions to Valence States. <i>Faraday Discussions</i> , 2022, , .	3.2	2
86	Steps, hops and turns: examining the effects of channel shapes on mass transfer in continuous electrochemical reactors. <i>Reaction Chemistry and Engineering</i> , 2022, 7, 264-268.	3.7	1
87	Heteroatom modified polymer immobilized ionic liquid stabilized ruthenium nanoparticles: Efficient catalysts for the hydrolytic evolution of hydrogen from sodium borohydride. <i>Molecular Catalysis</i> , 2022, 528, 112476.	2.0	1
88	Conference Report: Bridging chemistry and engineering. <i>Green Chemistry</i> , 2008, 10, 1247.	9.0	0