Flow Chemistry Publications

The following (non exhaustive) list of 170 papers shows peer reviewed work that has been published using the Vapourtec R-Series and E-Series flow chemistry system. As new work is continually published, please check on our website for updates.

Two-stage Flow Synthesis of Coumarinvia O-acetylation of Salicylaldehyde
Xin Li†,Anbang Chen†,Yangzhi Zhou†, Lingling Huang‡, Zheng Fang‡, HaifengGan† and KaiGuo†,§*
†College of Biotechnology and Pharmaceutical Engineering, Nanjing Tech University,30 Puzhu Rd S., Nanjing 211816, PR China
‡School of Pharmaceutical Sciences, Nanjing Tech University, 30 Puzhu Rd S., Nanjing 211816, PR China
§State Key Laboratory of Materials-Oriented Chemical Engineering, Nanjing Tech University,30 Puzhu Rd S., Nanjing 211816, PR China http://www.jflowchemistry.com

Generation and Trapping of Ketenes in Flow
Cyril Henry[1], David Bolien[1], Bogdan Ibanescu[1], Sally Bloodworth[1], David C. Harrowven[1], Xunli Zhang[2], Andy Craven[3], Helen F. Sneddon[3] Richard J. Whitby[1,*]
[1]Chemistry, University of Southampton, Southampton, HANTS, SO17 1BJ, UK,
[2] Bioengineering Group, Faculty of Engineering and the Environment, University of Southampton, Southampton, HANTS, SO17 1BJ, UK
[3]GlaxoSmithKline R&D Ltd., Medicines Research Centre, Gunnels Wood Road, Stevenage, HERTS, SG1 2NY, UK
http://onlinelibrary.wiley.com/doi/10.1002/ejoc.201403603/full

A Concise Flow Synthesis of Efavirenz‡
Dr. Camille A. Correia[1], Dr. Kerry Gilmore[1], Prof. Dr. D. Tyler McQuade[3] andProf. Dr. Peter H. Seeberger[1,2,*]
[1]Department of Biomolecular Systems, Max Planck Institute of Colloids and Interfaces, Am Mühlenberg 1, 14476 Potsdam (Germany)
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[3]Department of Chemistry and Biochemistry, Florida State University, Tallahassee, FL 32306 (USA)

http://onlinelibrary.wiley.com/doi/10.1002/anie.201411728/abstract

A monolith immobilised iridium Cp* catalyst for hydrogen transfer reactions under flow conditions
Maria Victoria Rojo,*[1] Lucie Guetzoyan[1] Ian. R. Baxendale[1,2]
[1] Department of Chemistry, University of Cambridge, Lensfield Road, Cambridge, UK
[2] Department of Chemistry, University of Durham, South Road, Durham, UK

http://pubs.rsc.org/en/content/articlelanding/2015/ob/c4ob02376e#!divAbstract

Development of a flow method for the hydroboration/oxidation of olefins
José A. Souto,*[1,2] Robert A. Stockman[3] Steven V. Ley[1]
[1] Department of Chemistry, University of Cambridge, Lensfield Road, Cambridge CB2 1EW, UK
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[3] School of Chemistry, University of Nottingham, Nottingham, UK
http://pubs.rsc.org/en/Content/ArticleLanding/2015/OB/c5ob00170f#!divAbstract

Reevaluation of the 2-nitrobenzyl protecting group for nitrogen containing compounds: an application of flow photochemistry
Chloe I. Wendell, Michael J. Boyd·
Vertex Pharmaceuticals Inc., 50 Northern Avenue, Boston, MA, United States
http://www.sciencedirect.com/science/article/pii/S0040403915000106

Flow synthesis of ethyl isocyanoacetate enabling the telescoped synthesis of 1,2,4-triazoles and pyrrolo-[1,2-*c*]pyrimidines
Marcus Baumann,[1] Antonio M. Rodriguez Garcia[1,2] Ian R. Baxendale*[1]
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[2] *Universidad de Castilla-La Mancha, Departamento de Química Orgánica, Facultad de Ciencias y Tecnologías* Químicas, Avd. Camilo José Cela, 10, 13071 Ciudad Real, Spain

http://pubs.rsc.org/en/Content/ArticleLanding/2015/OB/c5ob00245a#!divAbstract

Heterogenization of Pd–NHC complexes onto a silica support and their application in Suzuki–Miyaura coupling under batch and continuous flow conditions

Alberto Martínez,[1] Jamin L. Krinsky,[1] Itziar Peñafiel,[1] Sergio Castillón,[2] Konstantin Loponov,[3] Alexei Lapkin,[3] Cyril Godard*[1] Carmen Claver*[1]
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http://pubs.rsc.org/en/content/articlelanding/2014/cy/c4cy00829d/unauth%20-%20!divAbstract#!divAbstract

The direct α-C(sp^3)–H functionalisation of N-aryl tetrahydroisoquinolines via an iron-catalysed aerobic nitro-Mannich reaction and continuous flow processing

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CSIRO Manufacturing Flagship, Bayview Avenue, Clayton 3168, Australia

http://pubs.rsc.org/en/Content/ArticleLanding/2015/CC/c4cc07913b#!divAbstract

A Flow-based Synthesis of Telmisartan

Alex Martin, Ali Siamaki, Kathrine Belecki, Frank B. Gupton
Department of Chemistry and Department of Chemical and Life Science Engineering
Virginia Commonwealth University, 601 W. Main St., Richmond, Virginia 23284, United States

http://www.akademiai.com/doi/abs/10.1556/JFC-D-15-00002

Efficient Continuous-Flow Synthesis of Macrocyclic Triazoles

Anne-Catherine Bédard Jeffrey Santandrea Shawn Collins
Department of Chemistry and Centre for Green Chemistry and Catalysis, University of Montreal

http://www.akademiai.com/doi/suppl/10.1556/JFC-D-14-00042

***A Pr*actical Deca-gram Scale Ring Expansion of (R)-(–)-carvone to (R)-(+)-3-methyl-6-isopropenyl-cyclohept-3-enone-1**

Leandro de Carvalho Alves, André Luiz Desiderá, Kleber Thiago de Oliveira, Sean Newton, Steven V Ley and Timothy John Brocksom

http://pubs.rsc.org/en/content/articlelanding/2015/ob/c5ob00525f#!divCitation

Factors Influencing the Regioselectivity of the Oxidation of Asymmetric Secondary Amines with Singlet Oxygen

Dr. Dmitry B. Ushakov [1,†], Matthew B. Plutschack [1,†], Dr. Kerry Gilmore[1,*] and Prof. Dr. Peter H. Seeberger [1,]
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http://onlinelibrary.wiley.com/doi/10.1002/chem.201500121/abstract?deniedAccessCustomisedMessage=&userIsAuthenticated=false

ucuronidation of bile acids under flow conditions: design of experiments and Koenigs–Knorr reaction optimization

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http://pubs.rsc.org/en/content/articlelanding/2014/ob/c4ob01911c#!divAbstract

Electroactive and Photoactive Poly[Isoindigo-alt-EDOT] Synthesized Using Direct (Hetero)Arylation Polymerization in Batch and in Continuous Flow

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http://pubs.acs.org/doi/abs/10.1021/acs.chemmater.5b00083

Chemical Assembly Systems: Layered Control for Divergent, Continuous, Multistep Syntheses of Active Pharmaceutical Ingredients‡
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http://dx.doi.org/10.1002/anie.201409765

Continuous Reductions and Reductive Aminations Using Solid $NaBH_4$
Kerry Gilmore †, Stella Vukelić ‡, D. Tyler McQuade †§, Beate Koksch ‡, and Peter H. Seeberger *†‡
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http://dx.doi.org/10.1021/op500310s

Versatile, High Quality and Scalable Continuous Flow Production of Metal-Organic Frameworks
Marta Rubio-Martinez, Michael P. Batten, Anastasios Polyzos, Keri-Constanti Carey, James I. Mardel, Kok-Seng Lim & Matthew R. Hill
CSIRO Materials Science and Engineering, Australia

http://dx.doi.org/10.1038/srep05443

Facilitating Biomimetic Syntheses of Borrerine Derived Alkaloids by Means of Flow-Chemical Methods.
Sonja B. Kamptmann [A] and Steven V. Ley
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http://dx.doi.org/10.1071/CH14530

Synthesis of a Carprofen Analogue Using a Continuous Flow UV-Reactor
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Department of Chemistry and Centre for Green Chemistry and Catalysis, Université de Montréal, Québec, Canada.

http://dx.doi.org/10.1021/op5002148

Continuous Synthesis of Organozinc Halides Coupled to Negishi Reactions
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http://dx.doi.org/10.1002/adsc.201400243

Efficient synthesis of panaxadiol derivatives using continuous-flow microreactor and evaluation of anti-tumor activity
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http://dx.doi.org/10.1016/j.cclet.2014.1103

Continuous Flow Magnesiation of Functionalized Heterocycles and Acrylates with TMPMgCl·LiCl
Dr. Trine P. Petersen, Matthias R. Becker and Prof. Dr. Paul Knochel*
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http://dx.doi.org/10.1002/anie.201404221

A Continuous-Flow Approach to 3,3,3-Trifluoromethylpropenes: Bringing Together Grignard Addition, Peterson Elimination, Inline Extraction, and Solvent Switching
Trevor A. Hamlin †, Gillian M. L. Lazarus †, Christopher B. Kelly †, and Nicholas E. More
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http://dx.doi.org/10.1021/op500190j

Development of a Grignard-Type Reaction for Manufacturing in a Continuous-Flow Reactor
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http://dx.doi.org/10.1021/op500290x

First Example of Alkyl-Aryl Negishi Cross-Coupling in Flow: Mild, Efficient and Clean Introduction of Functionalized Alkyl Groups
Brecht Egle[2], Juan de Muñoz[1], Nerea Alonso[1], Wim M. De Borggraeve[2], Antonio de la Hoz[3], Angel Díaz-Ortiz[3], Jesús Alcázar[1]
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http://dx.doi.org/10.1556/JFC-D-13-00009

A General Continuous Flow Method for Palladium Catalysed Carbonylation Reactions Using Single and Multiple Tube-in-Tube Gas-Liquid Microreactors
Ulrike Gross[1], Peter Koos[1], Matthew O'Brien[1,2,*], Anastasios Polyzos[1,3] and Steven V. Ley[1]
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http://dx.doi.org/10.1002/ejoc.201402804

Flow Chemistry Meets Advanced Functional Materials
Dr. Rebecca M. Myers, Daniel E. Fitzpatrick, Dr. Richard M. Turner and Prof. Steven V. Ley*
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http://dx.doi.org/10.1002/chem.201402801

Multistep Flow Synthesis of 5-Amino-2-aryl-2*H*-[1,2,3]-triazole-4-carbonitriles
Dr. Jérôme Jacq and Dr. Patrick Pasau*
UCB Biopharma, Avenue de l'Industrie, 1420 Braine l'Alleud (Belgium)

http://dx.doi.org/10.1002/chem.201402074

The rapid synthesis of oxazolines and their heterogeneous oxidation to oxazoles under flow conditions
Steffen Glöckner, Duc N. Tran, Richard J. Ingham, Sabine Fenner, Zoe E. Wilson, Claudio Battilocchio and Steven V. Ley*
Department of Chemistry, University of Cambridge, Cambridge, UK

http://dx.doi.org/10.1039/C4OB02105C

C(sp^3)–H functionalisation of *N*-aryl tetrahydroisoquinolines *via* an iron-catalysed aerobic nitro-Mannich reaction and continuous flow processing
Martin Brzozowski, Jose A. Forni, G. Paul Savage and Anastasios Polyzos*
CSIRO Manufacturing Flagship, Bayview Avenue, Clayton, Australia
http://dx.doi.org/10.1039/C4CC07913B

First Example of a Continuous-Flow Carbonylation Reaction Using Aryl Formates as CO Precursors
Nerea Alonso[1, 3], Juan de Muñoz[1], Brecht Egle[2], Johannes L. Vrijdag[2], Wim M. De Borggraeve[2] , Antonio de la Hoz[3], Angel Díaz-Ortiz[3], Jesús Alcázar[1]
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http://dx.doi.org/10.1556/JFC-D-14-00005

Heterogenization of Pd–NHC complexes onto a silica support and their application in Suzuki–Miyaura coupling under batch and continuous flow conditions
Alberto Martínez,[a]Jamin L. Krinsky,[a]Itziar Peñafiel,[a]Sergio Castillón,[b]Konstantin Loponov,[c]Alexei Lapkin,[c]Cyril Godard*[a] and Carmen Claver*[a]
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http://dx.doi.org/10.1039/C4CY00829D

Glycosylation with *N*-acetyl glycosamine donors using catalytic iron(III) triflate: from microwave batch chemistry to a scalable continuous-flow process
Amandine Xolin,[a] Arnaud Stévenin,[a] Mathieu Pucheault,[b] Stéphanie Norsikian,[a] François-Didier Boyer*[ac] and Jean-Marie Beau*[ad]
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Glucuronidation of bile acids under flow conditions: design of experiments and Koenigs–Knorr reaction optimization
Serena Mostarda,[a] Paolo Filipponi,[a] Roccaldo Sardella,[a] Francesco Venturoni,[a] Benedetto Natalini,[a] Roberto Pellicciari[ab] and Antimo Gioiello*[a]
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http://dx.doi.org/10.1039/C4OB01911C

Continuous Flow Synthesis of Thieno[2,3-*c*]isoquinolin-5(4*H*)-one Scaffold: A Valuable Source of PARP-1 Inhibitors
Paolo Filipponi †, Carmine Ostacolo ‡, Ettore Novellino ‡, Roberto Pellicciari †§, and Antimo Gioiello *†
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http://dx.doi.org/10.1021/op500074h

Regioselective Synthesis of 3-Aminoimidazo[1,2-*a*]-pyrimidines under Continuous Flow Conditions
Ashlie J. E. Butler , Mark J. Thompson , Patrick J. Maydom , James A. Newby , Kai Guo , Harry Adams , and Beining Chen *
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http://dx.doi.org/10.1021/jo501861g

Microwave irradiation and flow chemistry for a straightforward synthesis of piano-stool iron complexes
Anastassiya Pagnoux-Ozherelyeva[a], David Bolien[b], Sylvain Gaillard[a], Flavie Peudru[a], Jean-François Lohier[a], Richard J. Whitby[b,], Jean-Luc Renaud[a,]
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http://dx.doi.org/10.1016/j.jorganchem.2014.09.031

Continuous flow macrocyclization at high concentrations: synthesis of macrocyclic lipids
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http://dx.doi.org/10.1039/c3gc40872h

Continuous Synthesis of Artemisinin-Derived Medicines
Kerry Gilmore,[a] Daniel Kopetzki,[a] Ju Weon Lee,[b] Zoltan Horvath,[b] D. Tyler McQuade,[a] Andreas Seidel-Morgenstern,[b,c] and Peter H. Seeberger[a,d]
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http://dx.doi.org/10.1039/C4CC05098C

Consecutive Oxygen-based Oxidations Convert Amines to α-Cyanoepoxides
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http://dx.doi.org/10.1039/C4CC04932B

Continuous-Flow Oxidative Cyanation of Primary and Secondary Amines Using Singlet Oxygen
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http://dx.doi.org/10.1002/anie.201307778

Flow synthesis of a versatile fructosamine mimic and quenching studies of a fructose transport probe
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http://dx.doi.org/10.3762/bjoc.9.238

Synthesis of All Four Stereoisomers of 3-(tert-Butoxycarbonyl)-3-azabicyclo[3.1.0]hexane-2-carboxylic Acid
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http://dx.doi.org/10.1021/jo4013282

Seamless Integration of Dose-Response Screening and Flow Chemistry: Efficient Generation of Structure–Activity Relationship Data of β-Secretase (BACE1) Inhibitors

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http://dx.doi.org/10.1002/anie.201309301

Controlled synthesis of poly(3-hexylthiophene) in continuous flow

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http://dx.doi.org/10.3762/bjoc.9.170

Integration of enabling methods for the automated flow preparation of piperazine-2-carboxamide

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http://dx.doi.org/10.3762/bjoc.10.56

Sequential flow process for the controlled polymerisation and thermolysis of RAFT-synthesised polymers

CH Hornung, A Postma, S Saubern, J Chiefari
CSIRO Materials Science and Engineering, Victoria, Australia

http://dx.doi.org/10.1016/j.polymer.2014.01.023

Robust and reusable supported palladium catalysts for cross-coupling reactions in flow

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http://dx.doi.org/10.1039/C3CY00836C

Investigating the continuous synthesis of a nicotinonitrile precursor to nevirapine

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http://dx.doi.org/10.3762/bjoc.9.292

Porous, functional, poly(styrene-*co*-divinylbenzene) monoliths by RAFT polymerization

Kristine J. Barlow (née Tan), Xiaojuan Hao, Timothy C. Hughes, Oliver E. Hutt, Anastasios Polyzos, Kathleen A. Turner, Graeme Moad
Commonwealth Scientific and Industrial Research Organisation (CSIRO), Materials Science & Engineering, Australia

http://dx.doi.org/10.1039/C3PY01015E

New Insights into Cyclobutenone Rearrangements: A Total Synthesis of the Natural ROS-Generating Anti-Cancer Agent Cribrostatin 6[‡]
Mubina Mohamed[1], Théo P. Gonçalves[1], Prof. Richard J. Whitby[1], Dr. Helen F. Sneddon[2], Prof. David C. Harrowven[1]
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http://dx.doi.org/10.1002/chem.201102263

Hypervalent iodine/TEMPO-mediated oxidation in flow systems: a fast and efficient protocol for alcohol oxidation
Nida Ambreen, Ravi Kumar and Thomas Wirth
Cardiff University, School of Chemistry, Park Place, Cardiff, UK

http://dx.doi.org/10.3762/bjoc.9.162

The application of a monolithic triphenylphosphine reagent for conducting Ramirez *gem*-dibromoolefination reactions in flow
Kimberley A. Roper[1], Malcolm B. Berry[2] and Steven V. Ley[1]
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http://dx.doi.org/10.3762/bjoc.9.207

Flow-Based, Cerium Oxide Enhanced, Low-Level Palladium Sonogashira and Heck Coupling Reactions by Perovskite Catalysts
Claudio Battilocchio[1], Benjamin N. Bhawal[1], Rajeev Chorghade[1], Benjamin J. Deadman[1], Joel M. Hawkins[2], Steven V. Ley[1]
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http://dx.doi.org/10.1002/ijch.201300049

The Fit For Purpose Development of S1P$_1$ Receptor Agonist GSK2263167 Using a Robinson Annulation and Saegusa Oxidation to Access an Advanced Phenol Intermediate
Robert M. Harris, Benjamin I. Andrews, Stacy Clark,
Jason W. B. Cooke, John C. S. Gray, and Stephanie Q. Q. Ng
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http://dx.doi.org/10.1021/op400162p

Raman spectroscopy as a tool for monitoring mesoscale continuous-flow organic synthesis: Equipment interface and assessment in four medicinally-relevant reactions
Trevor A. Hamlin and Nicholas E. Leadbeater
Department of Chemistry, University of Connecticut, USA

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Biotransformation with whole microbial systems in a continuous flow reactor: resolution of (*RS*)-flurbiprofen using *Aspergillus oryzae* by direct esterification with ethanol in organic solvent
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Continuous Flow Synthesis of Coumarin
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Continuous Flow-Processing of Organometallic Reagents Using an Advanced Peristaltic Pumping System and the Telescoped Flow Synthesis of (E/Z)-Tamoxifen

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Integrated Synthesis and testing of Substituted Xanthine Based DPP4 Inhibitors: Application to Drug Discovery

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Applying Flow Chemistry: Methods, Materials, and Multistep Synthesis

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Controlled synthesis of poly(3-hexylthiophene) in continuous flow

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The Rapid Generation of Isocyanates in Flow

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Continuous synthesis of pyridocarbazoles and initial photophysical and bioprobe characterization

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Microwave heating and conventionally-heated continuous-flow processing as tools for performing cleaner palladium-catalyzed decarboxylative couplings using oxygen as the oxidant – a proof of principle study

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Rapid Discovery of a Novel Series of Abl Kinase Inhibitors by Application of an Integrated Microfluidic Synthesis and Screening Platform

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A Multi-Step Continuous Flow Process for the N-Demethylation of Alkaloids
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A Two-Stage Continuous-Flow Synthesis of Spirooxazine Photochromic Dyes
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http://dx.doi.org/10.1071/CH12435
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Ozonolysis of some complex organic substrates in flow
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http://dx.doi.org/10.1039/C3RA00125C

Continuous Synthesis and Use of N-Heterocyclic Carbene Copper(I) Complexes from Insoluble Cu2O
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http://dx.doi.org/10.1021/ol303442m

An expeditious synthesis of imatinib and analogues utilising flow chemistry methods
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http://dx.doi.org/10.1039/C2OB27002A

Continuous-flow generation of diazoesters and their direct use in S-H and P-H insertion reactions: synthesis of a-sulfanyl, a-sulfonyl and a-phosphono carboxylates
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Synthesis of Carbohydrate-Functionalised Sequence-Defined Oligo(amidoamine)s by Photochemical ThiolEne Coupling in a Continuous Flow Reactor
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Synthesis of RAFT Block Copolymers in a Multi-Stage Continuous Flow Process Inside a Tubular Reactor
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http://dx.doi.org/10.1071/CH12479

Continuous Flow Synthesis of Organic Electronic Materials : Case Studies in Methodology Translation and Scale-up
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Preparation of Arene Chromium Tricarbonyl Complexes Using Continuous-Flow Processing: (η6-$C_6H_5CH_3$)$Cr(CO)_3$ as an Example
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Visible Light-Initiated Preparation of Functionalized Polystyrene Monoliths for Flow Chemistry
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Integrated Continuous Processing and Flow Characterization of RAFT Polymerization in Tubular Flow Reactors
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Synthesis of an H3 Antagonist via Sequential One-Pot Additions of a Magnesium Ate Complex and an Amine to a 1,4-Ketoester followed by Carbonyl-Directed Fluoride Addition
Joel M. Hawkins, Pascal Dubé, Mark T. Maloney, Lulin Wei. Marcus Ewing
Stephen M. Chesnut, Joshua R. Denette, Brett M. Lillie, Rajappa Vaidyanathan
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http://dx.doi.org/10.1021/op300093j

A "Catch-React-Release" Method for the Flow Synthesis of 2-Aminopyrimidines and Preparation of the Imatinib Base
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http://dx.doi.org/10.1021/ol301673q

Sustainable and efficient methodology for CLA synthesis and identification
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http://dx.doi.org/10.1039/C2GC35792E

Continuous Synthesis and Purification by Direct Coupling of a Flow Reactor with Simulated Moving-Bed Chromatography
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A Continuous Flow Process for the Radical Induced End Group Removal of RAFT Polymers
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http://dx.doi.org/10.1002/mren.201200007

Continuous Flow Synthesis of Secondary Amides by Tandem Azidation- Amidation of Anilines
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Asymmetric Homogeneous Hydrogenation in Flow using a Tube-in-Tube Reactor
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Continuous Flow Hydrogenation Using an On-Demand Gas Delivery Reactor
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Department of Chemistry, University of Connecticut, USA http://dx.doi.org/10.1021/op300019w

An efficient method for the lipase-catalysed resolution and in-line purification of racemic flurbiprofen in a continuous-flow reactor
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Soluble Polymer-Supported Flow Synthesis: A Green Process for the Preparation of Heterocycles
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Continuous flow synthesis and scale-up of glycine- and taurine-conjugated bile salts
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Development of a Continuous Flow Scale-Up Approach of Reflux Inhibitor AZD6906
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Phase-Transfer Catalysis under Continuous Flow Conditions: An Alternative Approach to the Biphasic Liquid/Liquid O-Alkylation of Phenols
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Continuous-Flow Synthesis of the Anti-Malaria Drug Artemisinin
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Continuous proline catalysis via leaching of solid proline
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Scale-Up of Flow-Assisted Synthesis of C2-Symmetric Chiral PyBox Ligands
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Application of Flow Chemistry to the Selective Reduction of Esters to Aldehydes
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http://dx.doi.org/10.1002/ejoc.201101458

Synthesis of Annulated Pyridines by Intramolecular Inverse-Electron-Demand Hetero-Diels-Alder Reaction under Superheated Continuous Flow Conditions
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http://dx.doi.org/10.1002/ejoc.201101538

The application of a monolithic triphenylphosphine reagent for conducting Appel reactions in flow microreactors
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Continuous Preparation of Arylmagnesium Reagents in Flow with Inline IR Monitoring
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http://dx.doi.org/10.1021/op200275d

New Insights into Cyclobutenone Rearrangements: A Total Synthesis of the Natural ROS-Generating Anti-Cancer Agent Cribrostatin (ROS=reactive-oxygen species)
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http://dx.doi.org/10.1002/chem.201102263

The Oxygen-Mediated Synthesis of 1,3-Butadiynes in Continuous Flow: Using Teflon AF-2400 to Effect Gas/Liquid Contact
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http://dx.doi.org/10.1002/cssc.201100339

Lead Diversification 2: Application to P38, gMTP and lead compounds
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A continuous-flow synthesis of annulated and polysubstituted furans from the reaction of ketones and a-haloketones
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Suzuki-Miyaura Cross-Coupling of Heteroaryl Halides and Arylboronic Acids in Continuous Flow
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http://dx.doi.org/10.1021/ol202052q

The Oxygen-Mediated Synthesis of 1,3-Butadiynes in Continuous Flow: Using Teflon AF-2400 to Effect Gas/Liquid Contact
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http://dx.doi.org/10.1002/cssc.201100339

Continuous flow synthesis of conjugated polymers
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http://dx.doi.org/10.1039/C1CC14315H

Continuous-flow, palladium-catalysed alkoxycarbonylation reactions using a prototype reactor in which it is possible to load gas and heat simultaneously
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http://dx.doi.org/10.1039/C1OB05808H

Teflon AF-2400 mediated gas–liquid contact in continuous flow methoxycarbonylations and in-line FTIR measurement of CO concentration
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http://dx.doi.org/10.1039/C1OB06017A

Rapid Access to α-Alkoxy and α-Amino Acid Derivatives through Safe Continuous-Flow Generation of Diazoesters
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http://dx.doi.org/10.1002/chem.201101590

Continuous flow photolysis of aryl azides: Preparation of 3H-azepinones
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http://dx.doi.org/10.3762/bjoc.7.129

Ozonolysis in Flow Using Capillary Reactors
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Nitrile Oxide 1,3-Dipolar Cycloaddition by Dehydration of Nitromethane Derivatives Under Continuous Flow Conditions
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CSIRO Materials Science and Engineering, Victoria, Australia. http://dx.doi.org/10.1071/CH11079

Nitration Chemistry in Continuous Flow using Fuming Nitric Acid in a Commercially Available Flow Reactor
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Global Discovery Chemistry, Novartis, Basel, Switzerland http://dx.doi.org/10.1021/op200055r

Synthesis of a Drug-Like Focused Library of Trisubstituted Pyrrolidines Using Integrated Flow Chemistry and Batch Methods
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Synthesis of (+)-Dumetorine and Congeners by Using Flow Chemistry Technologies
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Preparation of fluoxetine by multiple flow processing steps
Batoul Ahmed-Omer, Adam J. Sanderson
Eli Lilly and Co. Ltd., Lilly Research Centre, UK. http://dx.doi.org/10.1039/C0OB00906G

Oxidation Reactions in Segmented and Continuous Flow Chemical Processing Using an N-(tert-Butyl)phenylsulfinimidoyl Chloride Monolith
Lange, Matthew J. Capener, Alexander X. Jones, Catherine J. Smith, Nikzad Nikbin, Ian R. Baxendale, Steven V. Ley*
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Decarboxylative biaryl synthesis in a continuous flow reactor
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Diastereoselective Chain-Elongation Reactions Using Microreactors for Applications in Complex Molecule Assembly
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One-Flow, Multistep Synthesis of Nucleosides by Brønsted Acid-Catalyzed Glycosylation
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An Integrated Flow and Batch-Based Approach for the Synthesis of O-Methyl Siphonazole
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Flow synthesis of organic azides and the multistep synthesis of imines and amines using a new monolithic triphenylphosphine reagent
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A fully automated, multistep flow synthesis of 5-amino-4-cyano-1,2,3-triazoles
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A General, One-Step Synthesis of Substituted Indazoles using a Flow Reactor
Rob C. Wheeler, Emma Baxter, Ian B. Campbell, Simon J. F. Macdonald
GlaxoSmithKline, Stevenage, UK http://pubs.acs.org/doi/abs/10.1021/op100288t

Continuous flow synthesis of fullerene derivatives
Helga Seyler, Wallace Wing Ho Wong, Dave Jones , Andrew B. Holmes
University Of Melbourne, Australia http://dx.doi.org/10.1021/jo2001879

Controlled RAFT Polymerization in a Continuous Flow Microreactor
Christian H. Hornung ,Carlos Guerrero-Sanchez, Malte Brasholz, Simon Saubern, John Chiefari, Graeme Moad, Ezio Rizzardo, San H. Thang
CSIRO Materials Science & Engineering, Victoria, Australia http://dx.doi.org/10.1021/op1003314

Highly efficient dehydration of carbohydrates to 5-(chloromethyl)furfural (CMF), 5-(hydroxymethyl)furfural (HMF) and levulinic acid by biphasic continuous flow processing
Malte Brasholz , Karin von Känel, Christian H. Hornung, Simon Saubern, John Tsanaktsidis
CSIRO Materials Science & Engineering, Victoria , Australia http://dx.doi.org/10.1039/C1GC15107J

Continuous flow thermolysis of azidoacrylates for the synthesis of heterocycles and pharmaceutical intermediates
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Safe and Reliable Synthesis of Diazoketones and Quinoxalines in a Continuous Flow Reactor
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The Continuous-Flow Synthesis of Carboxylic Acids using CO2 in a Tube-In-Tube Gas Permeable Membrane Reactor
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Innovative Technology Centre, Cambridge, UK http://dx.doi.org/10.1002/anie.201006618

A breakthrough method for the accurate addition of reagents in multi-step segmented flow processing
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Continuous Flow Coupling and Decarboxylation Reactions Promoted by Copper Tubing
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http://dx.doi.org/10.1021/ol1026848

Synthesis of β-Keto Esters In-Flow and Rapid Access to Substituted Pyrimidines
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http://dx.doi.org/10.1021/jo101783m

Synthesis of 3-Aryl/benzyl-4,5,6,6a-tetrahydro-3aH-pyrrolo[3,4-d]isoxazole Derivatives: A Comparison between Conventional, Microwave-Assisted and Flow-Based Methodologies
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Flow synthesis of tricyclic spiropiperidines as building blocks for the histrionicotoxin family of alkaloids
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http://dx.doi.org/10.1016/j.tet.2010.04.092

A Continuous Flow Process Using a Sequence of Microreactors with In-line IR Analysis for the Preparation of N,N-Diethyl-4-(3-fluorophenylpiperidin-4-ylidenemethyl)benzamide as a Potent and Highly Selective δ-Opioid Receptor Agonist
Zizheng Qian, Ian R. Baxendale, Steven V. Ley
Innovative Technology Centre, University of Cambridge
http://dx.doi.org/10.1002/chem.201002147

Preparation of arylsulfonyl chlorides by chlorosulfonylation of in situ generated diazonium salts using a continuous flow reactor
Laia Malet-Sanz , Julia Madrzak , Steven V.Ley and Ian R.Baxendale
Innovative Technology Centre, University of Cambridge
http://dx.doi.org/10.1039/C0OB00450B

$KMnO_4$-Mediated Oxidation as a Continuous Flow Process
Jorg Sedelmeier , Steven V. Ley , Ian R. Baxendale and Marcus Baumann
Innovative Technology Centre, University of Cambridge
http://dx.doi.org/10.1021/ol101345z

Synthesis of Highly Substituted Nitropyrrolidines, Nitropyrrolizines and Nitropyrroles via Multicomponent-Multistep Sequences within a Flow Reactor
Marcus Baumann, Ian R. Baxendale, Andreas Kirschning, Steven V. Ley,* and Jens Wegner
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http://dx.doi.org/10.3987/COM-10-S(E)77

A Gram-Scale Batch and Flow Total Synthesis of Perhydrohistrionicotoxin
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http://dx.doi.org/10.1002/chem.201090183

Effect of phase transfer chemistry, segmented fluid flow, and sonication on the synthesis of cinnamic esters
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Department of Medicinal Chemistry, NiKem Research Srl, Milan, Italy http://dx.doi.org/10.1016/j.tet.2010.04.031

Continuous Flow Palladium(II)-Catalyzed Oxidative Heck Reactions with Arylboronic Acids
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Reaction of Grignard reagents with carbonyl compounds under continuous flow conditions
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[3+2] Dipolar cycloadditions of an unstabilised azomethine ylide under continuous flow conditions
Mark Grafton, Andrew C. Mansfield and M. Jonathan
Pfizer Global Research and Development, Sandwich, UK http://dx.doi.org/10.1016/j.tetlet.2009.12.071

A highly efficient flow reactor process for the synthesis of N-Boc-3,4-dehydro-l-proline methyl ester
Lucia Tamborini, Paola Conti, Andrea Pinto and Carlo De Micheli
Dipartimento di Scienze Farmaceutiche 'Pietro Pratesi', Università degli Studi di Milano, Italy http://dx.doi.org/10.1016/j.tetasy.2009.12.023

Efficient Continuous Flow Synthesis of Hydroxamic Acids and Suberoylanilide Hydroxamic Acid Preparation
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The application of flow microreactors to the preparation of a family of casein kinase I inhibitors
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Innovative Technology Centre, Cambridge, UK http://dx.doi.org/10.1039/b925327k

Multi-Step Synthesis by Using Modular Flow Reactors: The Preparation of YneOnes and Their Use in Heterocycle Synthesis
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A Flow Process Using Microreactors for the Preparation of a Quinolone Derivative as a Potent $5HT_{1B}$ Antagonist
Zizheng Qian, Ian R. Baxendale, Steven V. Ley
Innovative Technology Centre, Cambridge, UK http://dx.doi.org/10.1055/s-0029-1219358

A flow-based synthesis of Imatinib: the API of Gleevec
Mark D. Hopkin, Ian R. Baxendale and Steven V. Ley
Innovative Technology Centre, Cambridge, UK http://dx.doi.org/10.1039/c001550d

ReactIR Flow Cell: A New Analytical Tool for Continuous Flow Chemical Processing
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http://dx.doi.org/10.1021/op900305v

A safe and reliable procedure for the iododeamination of aromatic and heteroaromatic amines in a continuous flow reactor
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Research Chemistry, Pfizer Global Research and Development, Sandwich, UK
http://dx.doi.org/10.1016/j.tetlet.2009.10.007

Development of fluorination methods using continuous-flow microreactors
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Innovative Technology Centre, Cambridge, UK
http://dx.doi.org/10.1016/j.tet.2009.05.083

Multistep Synthesis Using Modular Flow Reactors: Bestmann-Ohira Reagent for the Formation of Alkynes and Triazoles
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http://dx.doi.org/10.1002/anie.200900970

A Bifurcated Pathway to Thiazoles and Imidazoles Using a Modular Flow Microreactor
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http://dx.doi.org/10.1021/cc800070a

The Use of Diethylaminosulfur Trifluoride (DAST) for Fluorination in a Continuous-Flow Microreactor
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http://dx.doi.org/10.1055/s-2008-1078026

A modular flow reactor for performing Curtius rearrangements as a continuous flow process
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http://dx.doi.org/10.1039/b801631n

[3 + 2] Cycloaddition of acetylenes with azides to give 1,4-disubstituted 1,2,3-triazoles in a modular flow reactor
Christopher D. Smith[1] , Ian R. Baxendale[1] , Steve Lanners[1] , John J. Hayward[1] , Steven V. Ley[1] Stephen C. Smith[2]
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http://dx.doi.org/10.1039/b702995k

Azide monoliths as convenient flow reactors for efficient Curtius rearrangement reactions
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http://dx.doi.org/10.1039/b801634h

A Microcapillary Flow Disc Reactor for Organic Synthesis
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http://dx.doi.org/10.1021/op700015f

A flow reactor process for the synthesis of peptides utilizing immobilized reagents, scavengers and catch and release protocols
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Innovative Technology Centre, Cambridge, UK http://dx.doi.org/10.1039/b612197g

Fully Automated Flow-Through Synthesis of Secondary Sulfonamides in a Binary Reactor System
Charlotte M. Griffiths-Jones, Mark D. Hopkin, Daniel Jönsson, Steven V. Ley, David J. Tapolczay, Emma Vickerstaffe, and Mark Ladlow
GlaxoSmithKline Cambridge Technology Centre, Cambridge http://dx.doi.org/10.1021/cc060152b

Fully Automated Continuous Flow Synthesis of 4,5-Disubstituted Oxazoles
Marcus Baumann , Ian R. Baxendale , Steven V. Ley ,Christoper D. Smith , and Geoffrey K. Tranmer
Innovative Technology Center, University of Cambridge http://dx.doi.org/10.1021/ol061975c

Continuous Flow Ligand-Free Heck Reactions Using Monolithic Pd [0] Nanoparticles
Nikzad Nikbin, Mark Ladlow, and Steven V. Ley
Department of Chemistry, University of Cambridge, UK http://dx.doi.org/10.1021/op7000436

Tagged phosphine reagents to assist reaction work-up by phase-switched scavenging using a modular flow reactor
Christopher D. Smith, Ian Baxendale, Geoffrey Tranmer, Marcus Baumann, Stephen Smith, Russell Lewthwaite and Steven V. Ley
Department of Chemistry, University of Cambridge, UK http://dx.doi.org/10.1039/b703033a

A flow process for the multi-step synthesis of the alkaloid natural product oxomaritidine: a new paradigm for molecular assembly
Ian R. Baxendale , Jon Deeley , Charlotte M. Griffiths-Jones , Steven V. Ley , Steen Saaby and Geoffrey K. Tranmer
Innovative Technology Centre, University of Cambridge http://dx.doi.org/10.1039/B600382F

Generation and Trapping of Ketenes in Flow
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http://onlinelibrary.wiley.com/doi/10.1002/ejoc.201403603/full

A Concise Flow Synthesis of Efavirenz‡
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http://onlinelibrary.wiley.com/doi/10.1002/anie.201411728/abstract

A monolith immobilised iridium Cp* catalyst for hydrogen transfer reactions under flow conditions
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http://pubs.rsc.org/en/content/articlelanding/2015/ob/c4ob02376e#!divAbstract

Development of a flow method for the hydroboration/oxidation of olefins

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http://pubs.rsc.org/en/Content/ArticleLanding/2015/OB/c5ob00170f#!divAbstract

Reevaluation of the 2-nitrobenzyl protecting group for nitrogen containing compounds: an application of flow photochemistry

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Vertex Pharmaceuticals Inc., 50 Northern Avenue, Boston, MA, United States

http://www.sciencedirect.com/science/article/pii/S0040403915000106

Flow synthesis of ethyl isocyanoacetate enabling the telescoped synthesis of 1,2,4-triazoles and pyrrolo-[1,2-*c*]pyrimidines

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http://pubs.rsc.org/en/Content/ArticleLanding/2015/OB/c5ob00245a#!divAbstract

Heterogenization of Pd–NHC complexes onto a silica support and their application in Suzuki–Miyaura coupling under batch and continuous flow conditions

Alberto Martínez,[1] Jamin L. Krinsky,[1] Itziar Peñafiel,[1] Sergio Castillón,[2] Konstantin Loponov,[3] Alexei Lapkin,[3] Cyril Godard*[1] Carmen Claver*[1]
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http://pubs.rsc.org/en/content/articlelanding/2014/cy/c4cy00829d/unauth%20-%20!divAbstract#!divAbstract

The direct α-C(sp^3)–H functionalisation of N-aryl tetrahydroisoquinolines via an iron-catalysed aerobic nitro-Mannich reaction and continuous flow processing

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A Flow-based Synthesis of Telmisartan

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http://www.akademiai.com/doi/abs/10.1556/JFC-D-15-00002

Efficient Continuous-Flow Synthesis of Macrocyclic Triazoles

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http://www.akademiai.com/doi/suppl/10.1556/JFC-D-14-00042

***A Pr*actical Deca-gram Scale Ring Expansion of (R)-(–)-carvone to (R)-(+)-3-methyl-6-isopropenyl-cyclohept-3-enone-1**

Leandro de Carvalho Alves, André Luiz Desiderá, Kleber Thiago de Oliveira, Sean Newton, Steven V Ley and Timothy John Brocksom

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Factors Influencing the Regioselectivity of the Oxidation of Asymmetric Secondary Amines with Singlet Oxygen

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http://onlinelibrary.wiley.com/doi/10.1002/chem.201500121/abstract?deniedAccessCustomisedMessage=&userIsAuthenticated=false

Efficient synthesis of panaxadiol derivatives using continuous-flow microreactor and evaluation of anti-tumor activity

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http://www.sciencedirect.com/science/article/pii/S1001841714004641

Glucuronidation of bile acids under flow conditions: design of experiments and Koenigs–Knorr reaction optimization

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http://pubs.rsc.org/en/content/articlelanding/2014/ob/c4ob01911c#!divAbstract

Electroactive and Photoactive Poly[Isoindigo-alt-EDOT] Synthesized Using Direct (Hetero)Arylation Polymerization in Batch and in Continuous Flow

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