

Welcome to the Summer 2017 issue of FullFlow, the flow chemistry newsletter from Vapourtec, a must-read for all Scientists interested in continuous processing applications and technology.

## Product News



### Delivering reactive gases using the E-Series

It is now possible to accurately deliver gases using the E-Series. Flow rate is controlled in the range 0.5 scc/min to 99 scc/min at pressures up to 10 bar. No MFC required!

[Read more](#)



### Flow Commander update coming...

This major update offers 10 exciting new features. A range of features increase productivity and output for systems using an autosampler. Ideal for polymer supported chemistry, catalyst screening and library synthesis.

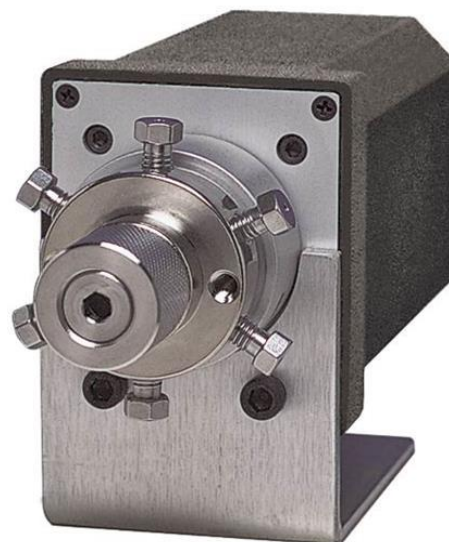
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## Expanded LED options

High power and efficient LEDs are available from 365 nm – 580 nm. The LED wavelength is selected to be a perfect match to the sensitizer / catalyst. Supplying state of the art LED technology delivered in an easy to use package. Vapourtec remains at the cutting edge of visible light photochemistry.

[Read more](#)



## Enabling integration with in-line MS or HPLC

Your Vapourtec system can now control external valves allowing easy integration of your Flow Chemistry system with your MS or HPLC system. This feature is the perfect tool for automated sampling of a small volumes for dilution and further analysis in a custom manner.

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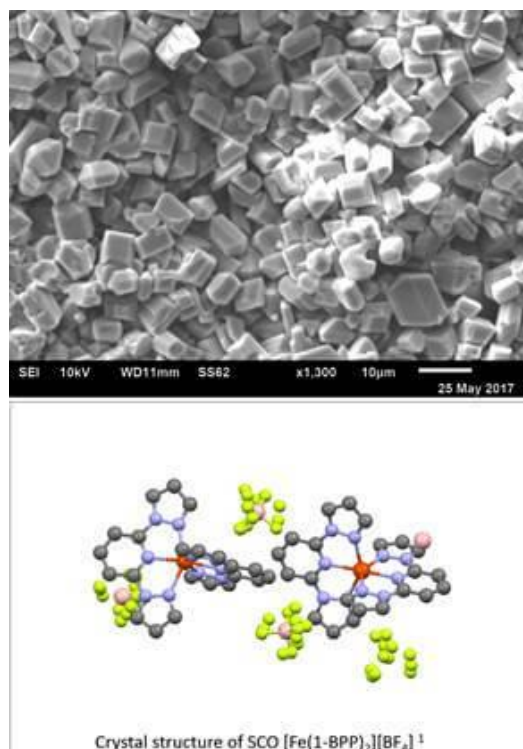
***Latest News***



## Key landmark for flow chemistry specialists

Vapourtec have recently hit the notable landmark of having been cited in 250 peer reviewed publications. The 250th publication featured work carried out by Graz University's Research Group led by Professor Oliver Kappe which used Vapourtec's innovative SF-10 lab pump.

[Read more](#)



## Flow reactor technology in metastable materials synthesis

Chick Wilson's group at the University of Bath have been using Vapourtec's progressive mixing reactor (PMR) for controlling the particle size during crystallisation of metastable materials.

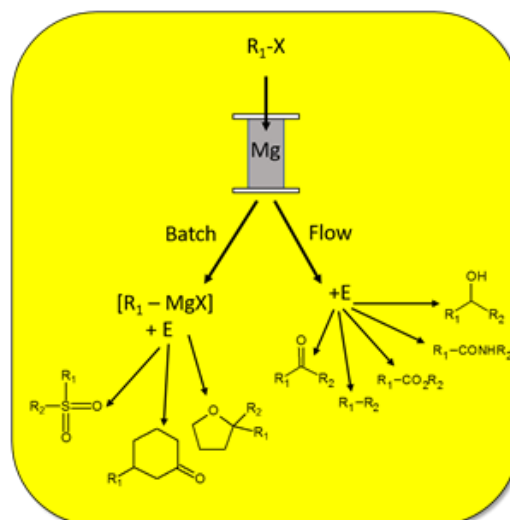
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## Vapourtec all set for new chapter

On 14th August Vapourtec will move to its new eco-friendly purpose built premises. Offering us scope and capacity to enjoy continued growth and more capacity for training, research and development.

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## In-situ production of Grignard reagents in continuous flow

Janssen Research Group and Universidad de Castilla-La Mancha have developed a continuous flow protocol for the in-situ production of Grignard reagents that overcomes the often exothermic nature of their creation, and their air and water sensitivity.

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## Events



**ACS**  
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AMERICAN CHEMICAL SOCIETY

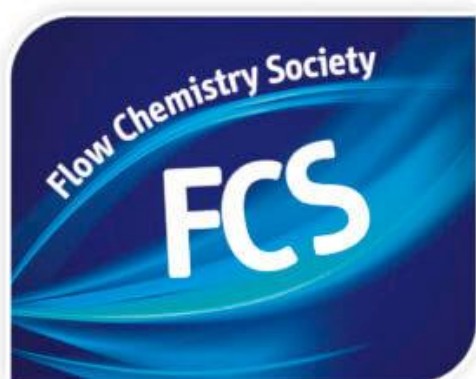


where science meets business

## **254th ACS National Meeting & Exposition – August 20-24, 2017 in Washington, USA**

The 254th American Chemical Society National Meeting and Exposition will be held in Washington August on August 20-24 2017 and will focus on chemistry's impact on the global economy.

[Read more](#)



## **FROST 6th Conference on Frontiers in Organic Synthesis Technology – October 18-20, 2017 in Budapest, Hungary**

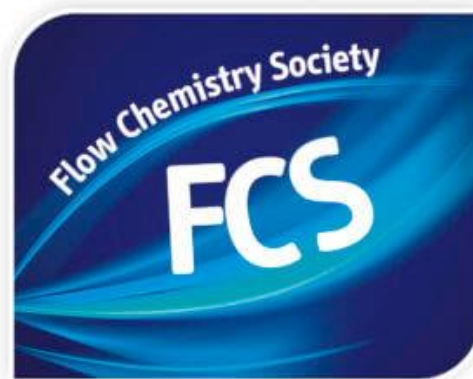
The 6th FROST conference is again organized by the ACS Hungarian Chapter. The agenda topics will be; Safe production of hazardous chemicals in flow, Flow chemistry in pharma industry, Instruments for flow chemistry: microreactors and Flow chemistry for drug discovery

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## **New Synthetic Methods – Design and Application– 28 September 2017, SCI, London, UK**

The SCI's Fine Chemical Group is hosting a one-day meeting to showcase cutting edge synthetic organic chemistry. The aim of the meeting is to highlight new synthetic approaches, disconnections and methods, and their application as developed by key researchers from both academia and industry.

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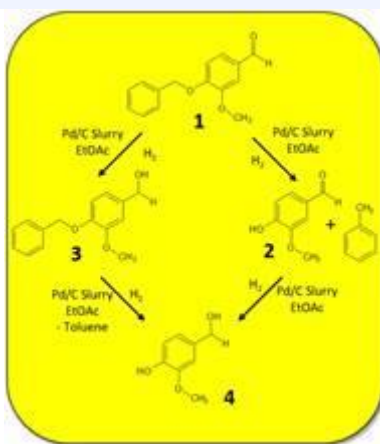


## **Flow Chemistry Europe -February 6th – 8th 2018 in Cambridge UK**

Benefit from the expert knowledge of academic and industry leaders who are pushing the boundaries of this rapidly evolving field and learn how you can transform your organic synthesis processes into a more streamlined, continuous set of synthesis operations

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## New Applications

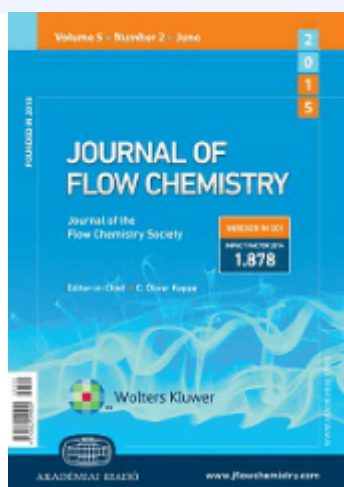


### Selective hydrogenation of O-benzyl vanillin using hydrogen gas and a palladium on charcoal slurry

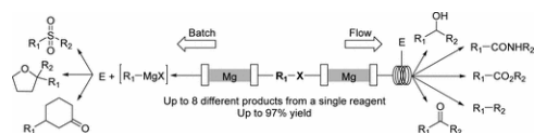
As part of our ongoing work with slurries, the powerful combination of the Vapourtec E-series and SF-10 has made it possible to quickly achieve the selective hydrogenation.

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## Publications



*Hydrogen sulfide chemistry in continuous flow: Efficient synthesis of 2-oxopropanethioamide*



*Grignard reagents on a tab: direct magnesium insertion under flow conditions*



David Cantillo<sup>1,2</sup>, Phillip A. Inglesby<sup>3</sup>, Alistair Boyd<sup>3</sup>, Oliver Kappe<sup>1,2</sup>

<sup>1</sup> Institute of Chemistry, University of Graz, NAWI Graz, Heinrichstrasse 28, 8010 Graz, Austria

<sup>2</sup> Research Center Pharmaceutical Engineering (RCPE), Inffeldgasse 13, 8010 Graz, Austria

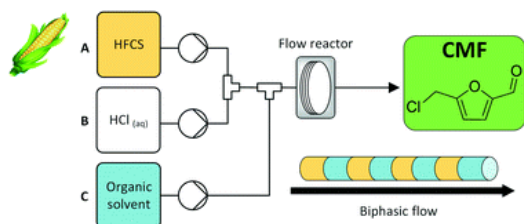
<sup>3</sup> AstraZeneca, Silk Road Business Park, Macclesfield, SK10 2NA, United Kingdom

Lena Huck<sup>†,‡</sup>, Antonio de la Hoz<sup>‡</sup>, Angel Díaz-Ortiz<sup>‡</sup>, Jesus Alcázar<sup>†</sup>

<sup>†</sup> Janssen Research and Development, Janssen-Cilag, S.A., C/Jarama 75, 45007 Toledo, Spain.

<sup>‡</sup> Facultad de Ciencias Químicas, Universidad de Castilla-La Mancha, 13071 Ciudad Real, Spain.

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*Efficient synthesis of 5-(chloromethyl) furfural (CMF) from high fructose corn syrup (HFCS) using continuous flow processing*

T. M. Kohl<sup>†</sup>, B. Bizet<sup>†</sup>, P. Kevant<sup>†</sup>, C. Sellwood<sup>†</sup>, J. Tsanaktsidis<sup>†</sup> and C. H. Hornung<sup>†</sup>.

<sup>†</sup>CSIRO Manufacturing Flagship, Bag 10, Clayton South, Australia

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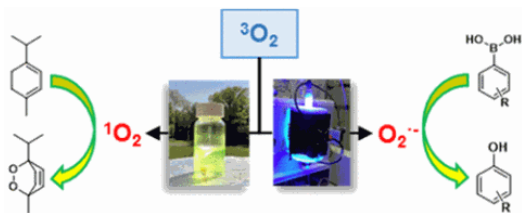
*Barbier continuous flow preparation and reactions of carbamoyllithiums for nucleophilic amidation*

Maximilian Andreas Ganiek, Matthias Richard Becker, Guillaume Berionni, Hendrik Zipse, Paul Knochel

LMU München, Department of Chemistry, München, Germany

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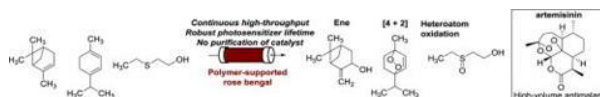


*Polymer-supported photosensitizers for oxidative organic transformations in flow and under visible light irradiation*

*John M. Tobin<sup>†</sup>, Timothy J. D. McCabe<sup>‡</sup>, Andrew W. Prentice<sup>†</sup>, Sarah Holzer<sup>†</sup>, Gareth O. Lloyd<sup>†</sup>, Martin J. Paterson<sup>†</sup>, Valeria Arrighi<sup>†</sup>, Peter A. G. Cormack<sup>‡</sup>, Filipe Vilela<sup>†</sup>.*

*<sup>†</sup> School of Engineering and Physical Sciences, Heriot-Watt University, Edinburgh, EH14 4AS Scotland, United Kingdom*

*<sup>‡</sup> WestCHEM, Department of Pure and Applied Chemistry, University of Strathclyde, Thomas Graham Building, 295 Cathedral Street, Glasgow, G1 1XL Scotland, United Kingdom*



*High throughput photo-oxidations in a packed bed reactor system*

*Caleb J. Kong, Daniel Fisher, Bimbisar K. Desai, Yuan Yang, Saeed Ahmad, Katherine Belecki, B. Frank Gupton*

*Caleb J. Kong, Daniel Fisher, Bimbisar K. Desai, Yuan Yang, Saeed Ahmad, Katherine Belecki, B. Frank Gupton Department of Chemistry and Department of Chemical and Life Science Engineering, Virginia Commonwealth University, 601 W. Main St. Richmond, VA 23220, USA*

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