

## *Curriculum Vitae: Dr. Timothy Noël*



### *Personal Information*

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**Name** Timothy Noël  
Department of Chemical Engineering & Chemistry  
Eindhoven University of Technology

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**E-mail** t.noel@tue.nl

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**Date of Birth** September 02, 1982

**Place of Birth** Aalst

**Nationality** Belgian

**Civil status** Married

### *Professional Experience*

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**2017 – present** **Associate Professor** at Eindhoven University of Technology

**2012 – 2017** **Assistant Professor**  
Laboratory for Micro Flow Chemistry and Process Technology  
Department of Chemical Engineering and Chemistry  
Eindhoven University of Technology, Eindhoven  
The Netherlands

Research Interests: microfluidics, micro flow chemistry, organic synthetic chemistry, enantioselective catalysis, fluorine chemistry, catalytic carbon-carbon and carbon-heteroatom formation

**2013 – present** **10% Research Professor**  
Department of Organic Chemistry (S4)  
Ghent University, Ghent  
Belgium

**2010 – 2011**      **Post-doctoral Research: Fulbright Scholar**  
Department of Chemistry  
Novartis – MIT Center for Continuous Manufacturing  
Massachusetts Institute of Technology (MIT), Cambridge  
United States of America  
Host: Prof. Dr. Stephen L. Buchwald  
Collaboration with group of Prof. Dr. Klavs F. Jensen (Department of Chemical Engineering)

Research Topic: *Cross-coupling reactions in continuous-flow – Towards a continuous manufacturing of pharmaceuticals.*

### *Education*

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**2005 – 2009**      **Ph.D. in Sciences – Chemistry: BOF Research Fellow**  
Laboratory for Organic and Bioorganic Synthesis  
Department of Chemistry  
Ghent University, Ghent  
Belgium  
Supervisor: Prof. Dr. Johan Van der Eycken

Ph.D. Thesis: *Synthesis and application of chiral dienes and chiral imidates for asymmetric transition metal catalysis.*

**2005 – 2008**      **Doctoral School**  
Department of Chemistry  
Ghent University, Ghent  
Belgium

Graduated with marks equivalent to high distinction.

Courses: *Organometallic Chemistry; Asymmetric Synthesis; Bioorganic Chemistry; Advanced NMR; Advanced Chromatography; Advanced Academic English Writing Skills; Management of Research and Development in University and Industry.*

**2004 – 2005**      **Predocotrinal Training in Chemistry**  
Department of Chemistry  
Ghent University, Ghent  
Belgium

Graduated with marks equivalent to high distinction – First of the year.

**2000 – 2004**      **Industrial Chemical Engineer (M.Sc.)**  
Department of Chemical Engineering

KaHo Sint-Lieven, Ghent  
Belgium

M.Sc. Thesis: *The synthesis of a fluorescence label with improved spectral properties for labeling D10-p5-2k as an HIV-1 inhibitor.*

Graduated with high distinction – First of the year.

**1994 – 2000      High School – Latin-Sciences**

Sint-Jozefscollege, Aalst  
Belgium

Recipient of the Excellence Award and Science Award.

Graduated with high distinction – First of the year.

***Scientific Awards***

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- 2017** - DECHEMA award “in recognition of ground-breaking work on continuous photo-chemical conversion in microfluidic systems”.
- 2016** - “Thieme Chemistry Journal Award” for promising young professors at the beginning of their career.
- 2015** - VIDI grant (Netherlands Institute for Scientific Research, NWO), 800 k€.
- 2013** - Marie Curie Career Integration Grant, 100 k€.
- 2012** - VENI grant (Netherlands Institute for Scientific Research, NWO), 250 k€.  
- Finalist European Young Chemist Award, EuCheMS Conference.
- 2011** - Incentive Award for Young Researchers 2011 (Comité de Gestion du Bulletin des Sociétés Chimiques Belges), 2 500 €.
- 2010** - Fulbright – Hays Award.
- 2006** - Best poster presentation in the chemistry section at the Ph.D. Symposium, Ghent University, 250 €.
- 2004** - Extraordinary Research Fund Fellowship (BOF fellowship, Ghent University).
- 2000** - Excellence Award at Sint-Jozefscollege, Aalst, Belgium.  
- Science Award at Sint-Jozefscollege, Aalst, Belgium.

- 120** Selective sp<sup>3</sup> C-H Aerobic Oxidation enabled by Decatungstate Photocatalysis in Flow.  
Laudadio, G; Govaerts, S.; Wang, Y.; Ravelli, D.; Koolman, H. F.; Fagnoni, M.; Djuric, S. W.; Noël, T. *Angew. Chem. Int. Ed.* **2018**, DOI: 10.1002/anie.201800818.
- 119** Continuous-flow in-line solvent-swap crystallization of Vitamin D3.  
Escriba-Gelonch, M.; Hessel, V.; Maier, M.C.; Noël, T.; Neira D'Angelo, M. F.; Gruber-Woelfler, H.. *Org. Process Res. Dev.* **2018**, DOI: 10.1021/acs.oprd.7b00351.
- 118** Micro-flow high-p,T intensification of Vitamin D3 synthesis using a ultraviolet lamp.  
Escriba-Gelonch, M.; Noël, T.; Hessel, V. *Org. Process Res. Dev.* **2018**, DOI: 10.1021/acs.oprd.7b00318.
- 117** Scale up of a luminescent solar concentrator based photomicroreactor via numbering-up.  
Zhao, F.; Cambie, D.; Janse, J.; Wieland, E.; Kuijpers, K. P. L.; Hessel, V.; Debije, M. G.; Noël, T. *ACS Sustainable Chem. Eng.* **2018**, 6, 422-429.
- 116** A personal perspective on the future of flow photochemistry.  
Noël, T. *J. Flow Chem.* **2017**, 7, 87-93.
- 115** Visible Light-Mediated Selective Arylation of Cysteine in Batch and Flow.  
Bottecchia, C.; Rubens, M.; Gunnoo, S. B.; Hessel, V.; Madder, A.; Noël, T. *Angew. Chem. Int. Ed.* **2017**, 56, 12701-12707. (Highlighted in OPRD, DOI: 10.1021/acs.oprd.7b00371)
- 114** An environmentally benign and selective electrochemical oxidation of sulfides and thiols in a continuous-flow microreactor.  
Laudadio, G.; Straathof, N. J. W.; Lanting, M. D.; Knoops, B.; Hessel, V.; Noël, T. *Green Chem.* **2017**, 19, 4061-4066.
- 113** Flow Synthesis of Diaryliodonium Triflates.  
Laudadio, G.; Gemoets, H. P. L. Hessel, V.; Noël, T.; *J. Org. Chem.* **2017**, 82, 11735-11741. (Highlighted in OPRD 2017, 21, 1187-1195)
- 112** Effect of Acetonitrile-Based Crystallization Conditions on the Crystal Quality of Vitamin D<sub>3</sub>.  
Gruber-Woelfler, H.; Escriba-Gelonch, M.; Noël, T.; Maier, M.C.; Hessel, V. *Chem. Eng. Technol.* **2017**, 40, 2016-2024.
- 111** Access to cyclic gem-difluoroacyl scaffolds via electrochemical and visible light photocatalytic radical tandem cyclization of heteroaryl chlorodifluoromethyl ketones.  
Adouama, C.; Keyrouz, R.; Pilet, G.; Monnereau, C.; Gueyrard, D.; Noël, T.; Medebielle, M. *Chem. Commun.* **2017**, 53, 5653-5656.
- 110** Visible light induced trifluoromethylation of highly functionalized arenes and heteroarenes in continuous flow.  
Abdiaj, I.; Bottecchia, C.; Alcazar, J.; Noël, T.; *Synthesis* **2017**, 49, 4978-4985. (highlighted on the Thieme Chemistry homepage)
- 109** Continuous-flow in-line solvent-switch crystallization of Vitamin D3.  
Escriba-Gelonch, M.; Hessel, V.; Maier, M. C.; Neiro d'Angelo, F.; Noël, T.; Gruber-Woelfler, H. *Chem. Eng. J.* **2017**, submitted.
- 108** Visible-Light Photocatalytic Decarboxylation of  $\alpha,\beta$ -Unsaturated Carboxylic Acids: Facile access to Stereoselective Difluoromethylated Styrenes in Batch and Flow.  
Wei, X.-J.; Hessel, V.; Noël, T.; *ACS Catalysis* **2017**, 7, 7136-7140. (Highlighted in OPRD, DOI: 10.1021/acs.oprd.7b00371)

- 107** A Modular Flow Design for the Meta-selective C–H Arylation of Anilines.  
Gemoets, H. P. L.; Laudadio, G.; Verstraete, K.; Hessel, V.; Noël, T.; *Angew. Chem. Int. Ed.* **2017**, *56*, 7161-7165.
- 106** Scale up of a luminescent solar concentrator based photomicroreactor via numbering-up.  
Zhao, F.; Cambie, D.; Janse, J.; Wieland, E. W.; Kuijpers, K. P. L.; Hessel, V.; Debije, M. G.; Noël, T.; **2017**, *7*, 7136-7140.
- 105** Every Photon Counts: Understanding and Optimizing Photon Paths in Luminescent Solar Concentrator-based Photomicroreactors (LSC-PMs).  
Cambie, D.; Zhao, F.; Hessel, V.; Debije, M. G.; Noël, T.; *React. Chem. Eng.* **2017**, *2*, 561-566.
- 104** Merger of Visible Light Photoredox Catalysis and C–H Activation for the Room Temperature C-2 Acylation of Indoles in Batch and Flow.  
Sharma, U. K.; Gemoets, H. P. L.; Schroeder, F.; Noël, T.; Van der Eycken, E. V. *ACS Catalysis*. **2017**, *7*, 3818-3823. (highlighted in OPRD **2017**, DOI: 10.1021/acs.oprd.7b00193 and DOI: 10.1021/acs.oprd.7b00251)
- 103** Safety assessment in development and operation of modular continuous-flow processes.  
Kockmann, N.; Thenee, P.; Fleischer-Trebes, C.; Laudadio, G.; Noël, T. *React. Chem. Eng.* **2017**, *2*, 258-280.
- 102** A sensitivity analysis of a numbered-up photomicroreactor system.  
Kuijpers, K. P. L.; van Dijk, M. A. H.; Rumeur, Q.; Hessel, V.; Su, Y.; Noël, T. *React. Chem. Eng.* **2017**, *2*, 109-115. (Invited contribution for the Emerging Investigators issue)
- 101** Flow Chemistry Perspective for C–H Bond Functionalization.  
Laudadio, G.; Noël, T. In *Strategies for Palladium-Catalyzed Non-Directed and Directed C-H Bond Functionalization*, Maiti, D. & Kapdi, A. Eds., Elsevier, **2017**, pp. 275-288.
- 100** A leaf-inspired luminescent solar concentrator for energy efficient continuous-flow photochemistry.  
Cambie, D.; Zhao, F.; Hessel, V.; Debije, M.G.; Noël, T. *Angew. Chem. Int. Ed.* **2017**, *56*, 1050-1054. (selected as VIP paper, which denotes the top 5% papers by the referees and the editor)
- 99** Practical Photocatalytic Trifluoromethylation and Hydrotrifluoromethylation of Styrenes in Batch and Flow.  
Straathof, N. J. W.; Cramer, S. E.; Hessel, V.; Noël, T. *Angew. Chem. Int. Ed.* **2016**, *55*, 15549-15553.
- 98** Micro-Flow Photosynthesis of New Dienophiles for Inverse-Electron-Demand Diels-Alder Reactions. Potential applications for pretargeted in vivo PET imaging.  
Billaud, E. M. F.; Shahbazali, E.; Ahamed, M.; Cleeren, F.; Noël, T.; Koole, M.; Verbruggen, A.; Hessel, V.; Bormans, G. *Chem. Sci.* **2017**, *8*, 1251-1258.
- 97** Disulfide-Catalyzed Visible-Light Oxidative Cleavage of C=C Bonds and Evidence of an Olefin-Disulfide Charge-Transfer Complex.  
Deng, Y.; Wei, X.-J.; Wang, H.; Sun, Y.; Noël, T.; Wang, X. *Angew. Chem. Int. Ed.* **2017**, *56*, 832-836. (selected as Hot paper)
- 96** Mild and selective base-free C–H arylation of heteroarenes: Experiment and computation.  
Gemoets, H. P. L.; Kalvet, I.; Nyuchev, A. V.; Erdmann, N.; Hessel, V.; Schoenebeck, F.; Noël, T. *Chem. Sci.*, **2017**, *8*, 1046-1055.
- 95** Photo-Claisen Rearrangement of Allyl Phenyl Ether in Micro-Flow: Influence of Phenyl Core Substituents and Vision on Orthogonality.

- Shahbazali, E.; Noël, T.; Hessel, V. *J. Flow Chem.*, **2016**, *6*, 252-259.
- 94** A mechanistic investigation of the visible light photocatalytic trifluoromethylation of heterocycles using CF<sub>3</sub>I in flow.  
Su, Y.; Kuijpers, K. P. L.; Konig, N.; Shang, M.; Hessel, V.; Noël, T. *Chem. Eur. J.*, **2016**, *22*, 12295-12300.
- 93** Kinetic study of hydrogen peroxide decomposition at high temperatures and concentrations in two capillary microreactors.  
Shang, M.; Noël, T.; Su, Y.; Hessel, V. *AIChE J.*, **2017**, *63*, 689-697.
- 92** Batch and flow synthesis of disulfides by visible light induced TiO<sub>2</sub> photocatalysis.  
Bottecchia, C.; Erdmann, N.; Tijssen, P. M. A.; Milroy, L.-G.; Brunsveld, L.; Hessel, V.; Noël, T. *ChemSusChem*, **2016**, *9*, 1781-1785. (Highlighted in OPRD DOI: 10.1021/acs.oprd.6b00321)
- 91** Visible Light-Induced Trifluoromethylation and Perfluoroalkylation of Cysteine Residues in Batch and Continuous Flow.  
Bottecchia, C.; Wei, X.-J.; Kuijpers, K. P. L.; Hessel, V.; Noël, T. *J. Org. Chem.* **2016**, *81*, 7301-7307.
- 90** From alcohol to 1,2,3-triazole via a multi-step continuous-flow synthesis of a rufinamide precursor.  
Borukhova, S.; Noël, T.; Metten, B.; de Vos, E.; Hessel, V. *Green Chem.* **2016**, *18*, 4947-4953.
- 89** Palladium-catalyzed aerobic oxidative coupling of o-xylene in flow: a safe and scalable protocol for cross-dehydrogenative coupling.  
Erdmann, N. E.; Su, Y.; Bosmans, B.; Hessel, V.; Noël, T. *Org. Process Res. Dev.*, **2016**, *20*, 831-835.
- 88** Utilization of milli-scale coiled flow inverter in combination with phase separator for continuous-flow liquid-liquid extraction processes.  
Vural-Guersel, I.; Kurt, S. K.; Aalders, J.; Wang, Q.; Noël, T.; Nigam, K.D.P.; Kockmann, N.; Hessel, V. *Chem. Eng. J.*, **2016**, *283*, 855-868.
- 87** Hydrogen chloride gas in solvent-free continuous conversion of alcohols to chlorides in microflow.  
Borukhova, S.; Noël, T.; Hessel, V. *Org. Process Res. Dev.*, **2016**, *20*, 568-573.
- 86** High pressure direct synthesis of adipic acid from cyclohexene and hydrogen peroxide via capillary microreactors.  
Shang, M.; Noël, T.; Su, Y.; Hessel, V. *Ind. Eng. Chem. Res.*, **2016**, *55*, 2669-2676.
- 85** Continuous ruthenium-catalyzed methoxycarbonylation with supercritical carbon dioxide.  
Stouten, S.C.; Noël, T.; Wang, Q.; Beller, M.; Hessel, V. *Catal. Sci. Technol.*, **2016**, *6*, 4712-4717.
- 84** Applications of continuous-flow photochemistry in organic synthesis, material science and water treatment.  
Cambié, D.; Bottecchia, C.; Straathof, N. J. W.; Hessel, V.; Noël, T. *Chem. Rev.*, **2016**, *116*, 10276-10341.
- 83** Continuous-flow multi-step synthesis of Cinnarizine, Cyclizine and a Buclizine derivative from bulk alcohols.  
Borukhova, S.; Noël, T.; Hessel, V. *ChemSusChem*, **2016**, *9*, 67-74.
- 82** Accelerated Gas-liquid Visible Light Photoredox Catalysis with Continuous-Flow Photochemical Microreactors.

- Straathof, N. J. W.; Su, Y.; Hessel, V.; Noël, T., *Nature Protocols*, **2016**, *11*, 10-21
- 81** A convenient numbering-up strategy for the scale-up of gas-liquid photoredox catalysis in flow.  
Su, Y.; Kuijpers, K.; Hessel, V.; Noël, T., *React. Chem. Eng.*, **2016**, *1*, 73-81. (cover article)
- 80** Beyond organometallic flow chemistry: the principles behind the use of continuous-flow reactors for synthesis.  
Noël, T.; Su, Y.; Hessel, V., *Top. Organomet. Chem.*, **2016**, *57*, 1-42.
- 79** Liquid phase oxidation chemistry in continuous-flow  
Gemoets, H. P. L.; Su, Y.; Shang, M.; Hessel, V.; Luque, R.; Noël, T., *Chem. Soc. Rev.* **2016**, *45*, 83-117.
- 78** Leaching-Free Supported Gold Nanoparticles Catalyzing Cycloisomerizations under Microflow Conditions.  
Schröder, F.; Erdmann, N.; Noël, T.; Luque, R.; Van der Eycken, E. V. *Adv. Synth. Catal.*, **2015**, *357*, 3141-3147.
- 77** Controlled Photocatalytic Aerobic Oxidation of Thiols to Disulfides in an Energy Efficient Photomicroreactor.  
Su, Y.; Talla, A.; Hessel, V.; Noël, T., *Chem. Eng. Technol.*, **2015**, *38*, 1733-1742. (cover article)
- 76** Heterocat, homocat, and biocat. What does better flow?  
Hessel, V.; Noël, T., *Chim. Oggi* **2015**, *33*, 44-49.
- 75** Supported Liquid Phase Catalyst coating in micro flow Mizoroki-Heck.  
Stouten, S.; Noël, T.; Wang, Q.; Hessel, V. *Chem. Eng. J* **2015**, *279*, 143-148.
- 74** Supported Gold Nanoparticles as an Efficient, Reusable and Green Heterogeneous Catalyst for Cycloisomerization Reactions. Schröder, F.; Ojeda, M.; Erdmann, E.; Jacobs, J.; Van Meervelt, L.; Luque, R.; Noël, T.; Van der Eycken, J.; Van der Eycken, E. V. *Green Chem.* **2015**, *17*, 3314-3318.
- 73** Room temperature catalysis enabled by light. Noël, T., In *Sustainable catalysis, energy-efficient reactions and applications*. Luque, R.; Lam, F., Eds, Wiley-VCH, Berlin, **2015**, 135-154.
- 72** Pressure-Accelerated Azide-Alkyne Cycloaddition: Micro Capillary versus Autoclave Reactor Performance. Borukhova, S.; Seeger, A. D.; Noël, T.; Wang, Q.; Busch, M.; Hessel, V., *ChemSusChem* **2015**, *8*, 504-512.
- 71** Separation/Recycling Methods of Homogeneous Transition Metal Catalysts in Continuous Flow. Vural-Gursel, I.; Noël, T.; Wang, Q.; Hessel, V., *Green Chem.* **2015**, *17*, 2012-2026.
- 70** Visible light photoredox catalysis.  
Erdmann, N.; Noël, T., In *Green Chemistry in Drug Discovery: From academia to industry*, Le, P. T.; Richardson, P. F., Eds, Springer Science, **2015**, accepted for publication.
- 69** Reactor Concepts for Aerobic Liquid-phase Oxidation: Microreactors and tube reactors.  
Gemoets, H.; Hessel, V.; Noël, T., In *Liquid Phase Aerobic Oxidation Catalysis – Industrial applications and academic perspectives*, Stahl, S. S.; Alsters, P. L., Eds, Wiley-VCH, Berlin, **2016**, pp. 399-419.
- 68** A compact photochemical design combining a capillary microreactor with small-scale LEDs for gas-liquid photocatalytic transformations.  
Su, Y.; Hessel, V.; Noël, T., *AIChE J.* **2015**, *61*, 2215-2227.
- 67** Accelerating Visible Light Photoredox Catalysis in Continuous-flow Reactors.  
Straathof, N. J. W.; Noël, T., In *Visible light photocatalysis in organic chemistry*, C. R. J. Stephenson, T. Yoon, D. W. C. MacMillan, Eds., Wiley-VCH, Berlin, **2015**, accepted for

- publication.
- 66** Iridium(I)-catalyzed ortho-directed hydrogen-isotope exchange in continuous-flow reactors.  
Habraken, E. R. M.; Vliegen, M.; Noël, T., *J. Flow Chem.* **2015**, *5*, 2-5.
- 65** Continuous Metal Scavenging and Coupling to One-pot Copper-Catalyzed Azide-Alkyne Cycloaddition Click Reaction in Flow.  
Vural-Gursel, I.; Aldiansyah, F.; Wang, Q.; Noël, T.; Hessel, V. *Chem. Eng. J.* **2015**, *270*, 468-475.
- 64** Metal-free photocatalytic aerobic oxidation of thiols to disulfides in batch and continuous-flow.  
Talla, A.; Driessen, B.; Straathof, N. J. W.; Milroy, L.-G.; Brunsveld, L.; Hessel, V.; Noël, T., *Adv. Synth. Catal.* **2015**, *357*, 2180-2186.
- 63** Connected nucleophilic substitution-Claisen rearrangement in flow – Analysis for kilo-lab process solutions with orthogonality.  
Shahbazali, E.; Spapens, M.; Kobayashi, H.; Ookawara, S.; Noël, T.; Hessel, V. *Chem. Eng. J.* **2015**, *281*, 144-154.
- 62** Cross-coupling chemistry in continuous flow.  
Noël, T.; Hessel, V., In *New Trends in cross-coupling: Theory and applications*, T. Colacot, Ed., RSC, Cambridge (UK), **2015**, pp. 608-642.
- 61** 2- and 3-stage temperature ramping for the direct synthesis of adipic acid in micro-flow packed-bed reactors.  
Shang, M.; Noël, T.; Wang, Q.; Su, Y.; Miyabayashi, K.; Hessel, V.; Hasebe, S., *Chem. Eng. J.* **2015**, *260*, 454-462.
- 60** Aerobic C–H olefination of indoles via a cross-dehydrogenative coupling in continuous flow.  
Gemoets, H. P. L.; Hessel, V.; Noël, T., *Org. Lett.* **2014**, *16*, 5800-5803.
- 59** The Claisen Rearrangement – Part 1: Mechanisms and Transition States, Revisited with Quantum Mechanical Calculations and Ultrashort Pulse Spectroscopy  
Zelentsov, S.; Hessel, V.; Shahbazali, E., Noël, T., *ChemBioEng Rev.* **2014**, *1*, 230-240.
- 58** The Claisen Rearrangement – Part 2: Impact Factor Analysis of the Claisen Rearrangement, in Batch and in Flow.  
Hessel, V.; Shahbazali, E., Noël, T.; Zelentsov, S., *ChemBioEng Rev.* **2014**, *1*, 244-261.
- 57** Claisen-Umlagerung im Ruhr- und Durchflussbetrieb: Verstandnis des Mechanismus und Steuerung der Einflussgrößen  
Hessel, V.; Shahbazali, E., Noël, T.; Zelentsov, S., *Chem. Ing. Tech.* **2014**, *86*, 2160-2179.
- 56** A mild and fast photocatalytic trifluoromethylation of thiols in batch and continuous-flow.  
Straathof, N. J. W.; Tegelbeckers, B. J. P.; Hessel, V.; Wang, X.; Noël, T., *Chem. Sci.* **2014**, *5*, 4768-4773
- 55** Photochemical transformations accelerated in continuous-flow reactors: basic concepts and applications.  
Su, Y.; Straathof, N. J. W.; Hessel, V.; Noël, T., *Chem. Eur. J.* **2014**, *20*, 10562-10589.  
(Highlighted on the Chem Eur J facebook webpage; highlighted on Organic Chemistry Portal by Douglass F. Taber, 28/09/2015; cover of volume 20, issue 34; As of November/December 2015, this highly cited paper received enough citations to place it in the top 1% of its academic field based on a highly cited threshold for the field and publication year. Source: Essential Science Indicators).
- 54** Biotechnical microflow processing at the edge: lessons to be learnt for a young discipline.



- Hessel, V.; Tibhe, J.; Noël, T.; Wang, Q. *Chem. Biochem Eng. Q.* **2014**, *83*, 167-188.
- 53** Catalyst retention in continuous flow with supercritical carbon dioxide.  
Stouten, S. C.; Noël, T.; Wang, Q.; Hessel, V. *Chem. Eng. Process.* **2014**, *28*, 26-32.
- 52** Micro Flow Chemistry: New possibilities for synthetic chemists.  
Noël, T., In *Discovering the future of molecular sciences*, B. Pignataro, Ed., Wiley-VCH, Weinheim (Germany), **2014**, pp.137-164.
- 51** Eco-efficiency analysis for intensified production of an active pharmaceutical ingredient: a case study.  
Hessel, V.; Dencic, I.; Ott, D.; Kralisch, D.; Noël, T.; Meuldijk, J.; de Croon, M. H. J. M.; Laribi, Y.; Perrichon, P., *Org. Process Res. Dev.* **2014**, *18*, 1326-1338.
- 50** Heat-integrated novel process of liquid fuel production from bioresources – process simulation and costing study.  
Vural-Gursel, I.; Wang, Q.; Noël, T.; Hessel, V.; Kolb, G. A.; van Veen, A., *Chem. Eng. Trans.* **2014**, *39*, 931-936.
- 49** Rapid trifluoromethylation and perfluoroalkylation of five-membered heterocycles by photoredox catalysis in continuous flow.  
Straathof, N. J. W.; Gemoets, H.; Wang, X.; Schouten, J. C.; Hessel, V.; Noël, T., *ChemSusChem* **2014**, *7*, 1612-1617. (*Invited artwork for the cover of ChemSusChem*)
- 48** Visible Light Photocatalytic Metal-Free Perfluoroalkylation of Heteroarenes in Continuous Flow.  
Straathof, N. J. W.; van Osch, D. J. G. P.; Schouten, A.; Wang, X.; Schouten, J. C.; Hessel, V.; Noël, T., *J. Flow Chem.* **2014**, *4*, 12-17.
- 47** The accelerated preparation of 1,4-dihydropyridines using microflow reactors.  
Baraldi, P.T.; Noël, T.; Wang, Q.; Hessel, V., *Tetrahedron Lett.* **2014**, *55*, 2090-2092.
- 46** Metallic nanoparticles made in flow and their catalytic applications in organic synthesis.  
Shahbazali, E.; Hessel, V.; Noël, T.; Wang, Q., *Nanotechnology Rev.* **2014**, *3*, 65-86.
- 45** Solvent- and catalyst-free Huisgen cycloaddition towards Rufenamide in flow with decision on a greener and less expensive dipolarophile.  
Borukhova, S.; Noël, T.; Metten, B.; de Vos, E.; Hessel, V., *ChemSusChem* **2013**, *6*, 2220-2225.
- 44** Ferrocene-derived P,N ligands: Synthesis and application in enantioselective catalysis.  
Noël, T.; Van der Eycken, J., *Green Processing and Synthesis* **2013**, *2*, 297-309.
- 43** Improving energy efficiency of process of adipic acid synthesis in flow using pinch analysis.  
Vural-Gursel, I.; Wang, Q.; Noël, T.; Hessel, V.; Tinge, J. T., *Ind. Eng. Chem. Res.* **2013**, *52*, 7827-7835.
- 42** Flow Synthesis of phenylserine using threonine aldolase immobilized on Eupergit support.  
Tibhe, J.; Fu, H.; Noël, T.; Wang, Q.; Meuldijk, J.; Hessel, V., *Beilstein J. Org. Chem.* **2013**, *9*, 2168-2179.
- 41** Accelerating photoredox catalysis in continuous microflow.  
Noël, T.; Wang, X.; Hessel, V., *Monographic suppl. Series of Chimica Oggi - Chem. Today: Organometallic chemistry, biocatalysis and catalysis*, **2013**, *31*, 10-14.
- 40** A mild, one-pot Stadler-Ziegler synthesis of arylsulfides facilitated by photoredox catalysis in batch and continuous-flow.  
Wang, X.; Cuny, G. D.; Noël, T., *Angew. Chem. Int. Ed.* **2013**, *52*, 7860-7864.
- 39** Lipase based biocatalytic flow process in a packed bed microreactor.  
Dencic, I.; de Vaan, S.; Noël, T.; Meuldijk, J.; de Croon, M.; Hessel, V., *Ind. Eng. Chem. Res.*

- 2013**, 52, 10951-10960.
- 38** Novel Process Windows for Enabling, Speeding-up and Uplifting Flow Chemistry.  
Hessel, V.; Kralisch, D.; Kockmann, N.; Noël, T.; Wang, Q., *ChemSusChem* **2013**, 6, 746-789.  
(Special attention: one of the most frequently cited papers in ChemSusChem among those published in 2012 or 2013; most cited paper in 2015)
- 37** The impact of Novel Process Windows on the Claisen rearrangement.  
Kobayashi, H.; Driessen, B.; van Osch, D. J. G. P.; Talla, A., Noël, T.; Hessel, V., *Tetrahedron* **2013**, 69, 2885-2890.
- 36** Implementation of heat integration for efficient process design of direct adipic acid synthesis in flow.  
Vural-Gürsel, I.; Wang, Q.; Noël, T.; Hessel, V. *Chem. Eng. Trans.* **2013**, 35, 775-780.
- 35** A view through Novel Process Windows.  
Stouten, S. C.; Noël, T.; Wang, Q.; Hessel, *Aust. J. Chem.* **2013**, 66, 121-130.
- 34** Supported aqueous phase catalyst coating in micro flow Mizoroki-Heck reaction.  
Stouten, S. C.; Noël, T.; Wang, Q.; Hessel, *Tetrahedron Lett.* **2013**, 54, 2194-2198.
- 33** Packed-bed microreactor for continuous-flow adipic acid synthesis from cyclohexene and hydrogen peroxide.  
Shang, M.; Noël, T.; Wang, Q.; Hessel, V. *Chem. Eng. Technol.* **2013**, 36, 1001-1009.
- 32** Micro Process Technology – 3. Applications  
Hessel, V.; Noël, T. *Ullmann's Encyclopedia of Industrial Chemistry*, DOI: 10.1002/14356007.o16\_o02.
- 31** Membrane microreactors: Gas-liquid reactions made easy.  
Noël, T.; Hessel, V. *ChemSusChem* **2013**, 6, 405-407.
- 30** Micro reaction technology for valorization of biomolecules using enzymes and metal catalysts.  
Dencic, I.; Noël, T.; Meuldijk, J.; de Croon, M.; Hessel, V. *Eng. Life Sci.* **2013**, 13, 326-343.
- 29** Chemical intensification in flow chemistry through harsh reaction conditions and new reaction design.  
Noël, T.; Hessel, V. In *Microreactors in preparative chemistry: Practical aspects in bioprocessing, nanotechnology, catalysis and more*, W. Reschetilowski, Ed., Wiley-VCH, Weinheim (Germany), **2013**, pp. 273-295. (DOI: 10.1002/9783527652891.ch11)
- 28** Direct synthesis of adipic acid in flow – A sustainable process alternative.  
Vural-Gürsel, I.; Wang, Q.; Noël, T.; Hessel, V. *Chem. Eng. Trans.* **2012**, 29, 565-570.
- 27** Green is the future of chemistry.  
Noël, T. *Green Proc. Synth.* **2012**, 1, 399-401.
- 26** Window of opportunity – Increase in profitability using modular compact plants and microreactor based flow processing.  
Vural-Gürsel, I.; Hessel, V.; Wang, Q.; Noël, T.; Lang, J. *Green Proc. Synth.* **2012**, 1, 315-336.
- 25** Chiral imidate-ferrocenylphosphanes: Synthesis and application as P,N-ligands in iridium(I)-catalyzed hydrogenation of unfunctionalized and poorly functionalized olefins.  
Bert, K.; Noël, T.; Kimpe, W.; Goeman, J. L.; Van der Eycken, J. *Org. Biomol. Chem.* **2012**, 10, 8539-8550.
- 24** Threonine aldolase immobilization on different supports for engineering of productive, cost-efficient enzymatic microreactors.

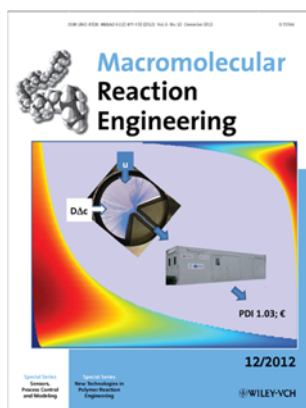
- Fu, H.; Dencic, I.; Tibhe, J.; Pedraza, C. A. S.; Wang, Q.; Noël, T.; Meuldijk, J.; de Croon, M.; Hessel, V.; Weizenmann, N.; Oeser, T.; Kinkeade, T.; Hyatt, D.; Van Roy, S.; Dejonghe, W.; Diels, L. *Chem. Eng. J.* **2012**, 207-208, 564-576.
- 23** Modeling of anionic polymerization in flow with coupled variations of concentration, viscosity and diffusivity.  
Cortese, B.; Noël, T.; de Croon, M.H.J.M.; Schulze, S.; Klemm, E.; Hessel, V. *Macromol. React. Eng.* **2012**, 6, 507-515. (Cover article)
- 22** Copper(I)-catalyzed azide-alkyne cycloadditions in microflow: Catalyst activity, high T operation, and an integrated continuous copper scavenging unit.  
Varas, A. C.; Noël, T.; Wang, Q.; Hessel, V. *ChemSusChem* **2012**, 5, 1703-1707.
- 21** Micro Process Technology – 1. Introduction  
Hessel, V.; Noël, T. *Ullmann's Encyclopedia of Industrial Chemistry*, DOI: 10.1002/14356007.q16\_q01
- 20** Micro Process Technology – 2. Processing  
Hessel, V.; Noël, T. *Ullmann's Encyclopedia of Industrial Chemistry*, DOI: 10.1002/14356007.b16\_b37.pub2
- 19** Potential analysis of smart flow processing and micro process technology for fastening process development – Use of chemistry and process design as intensification fields.  
Hessel, V.; Vural-Gürsel, I.; Wang, Q.; Noël, T.; Lang, J. *Chem. Eng. Technol.* **2012**, 35, 1184-1204.
- 18** Potentialanalyse von Milli- und Mikroprozestechniken fuer die Verkuerzung von Prozessentwicklungszeiten – Chemie und Prozess Design als Intensivierungsfelder.  
Hessel, V.; Vural-Gürsel, I.; Wang, Q.; Noël, T.; Lang, J. *Chem. Ing. Tech.* **2012**, 84, 660-684.
- 17** Chiral Imidate Ligands: Synthesis and Applications in Asymmetric Catalysis.  
Noël, T.; Bert, K.; Janssens, P.; Van der Eycken, J. In *Innovative Catalysis in Organic Synthesis: Oxidations, Hydrogenations and C–X Bond Forming Reactions*, P. G. Andersson, Ed., Wiley-VCH, Weinheim (Germany), **2012**, pp. 309-325.
- 16** Accelerating Pd-catalyzed C–F bond formation: Use of a microflow packed-bed reactor.  
Noël, T.; Maimone, T. J.; Buchwald, S.L. *Angew. Chem. Int. Ed.* **2011**, 50, 8900-8903.  
(Selected as a hot paper by the editors of *Angewandte Chemie. Highlighted in Org. Process Res. Dev.* **2012** DOI: 10.1021/op300251d)
- 15** Suzuki-Miyaura cross-coupling of heteroaryl halides and aryl boronic acids in continuous-flow.  
Noël, T.; Musacchio, A. J. *Org. Lett.* **2011**, 13, 5180-5183.
- 14** A Teflon microreactor with integrated piezoelectric actuator to handle solid forming reactions.  
Kuhn, S.; Noël, T.; Gu, L.; Heider, P. L.; Jensen, K. F. *Lab Chip* **2011**, 11, 2488-2492.  
(Selected as a Hot Paper; Invited artwork for the cover of *Lab on a Chip*, volume 11, number 15)
- 13** Suzuki-Miyaura cross-coupling reactions in flow: Multistep synthesis enabled by a microfluidic extraction.  
Noël, T.; Kuhn, S.; Musacchio, A. J.; Jensen, K.F.; Buchwald, S.L. *Angew. Chem. Int. Ed.* **2011**, 50, 5943-5946.  
(Highlighted in *Chemical & Engineering News* **2011**, 89, pp. 39)
- 12** Palladium-catalyzed amination reactions in flow: overcoming the challenges of clogging via acoustic irradiation.  
Noël, T.; Naber, J.R.; Hartman, R.L.; McMullen, J.P.; Jensen, K.F.; Buchwald, S.L. *Chem. Sci.*

- 2011**, 2, 287-290.  
(Highlighted in *Chemistry World* + interview with T. Noël: 13 January 2011; Highlighted in *Conveying News*: 24 January 2011; Top Ten Most Accessed Articles in December 2010, January 2011)
- 11** Chloro(2-dicyclohexylphosphino-2',4',6'-triisopropyl-1,1'-biphenyl)[2-(2-aminoethyl)phenyl]palladium (II), XPhos first generation precatalyst.  
Noël, T. *e-EROS Encyclopedia of Reagents for Organic Synthesis* **2011**, DOI: 10.1002/047084289X.rm01343.
  - 10** Cross-Coupling in Flow.  
Noël, T.; Buchwald, S.L. *Chem. Soc. Rev.* **2011**, 40, 5010-5029.  
(One of the most accessed reviews in August 2011; highlighted in Faculty of 1000; *Highlighted in Org. Process Res. Dev.* **2012** DOI: 10.1021/op300251d)
  - 9** Imidate-Phosphane ligands as highly versatile ligands for Palladium-catalyzed allylic substitution reactions.  
Noël, T.; Bert, K.; Van der Eycken, E.; Van der Eycken, J. *Eur. J. Org. Chem.* **2010**, 4056-4061.
  - 8** Rhodium/olefin-catalyzed reaction of arylboronic acids with an alfa-acetamido acrylic ester: Mizoroki-Heck-type reaction versus conjugate addition.  
Noël, T.; Gök, Y.; Van der Eycken, J. *Tetrahedron: Asymmetry* **2010**, 21, 540-543.
  - 7** Novel  $C_2$ -symmetrical bisoxazolines with a chiral *trans*-2,3-diphenylcyclopropane backbone: Preparation and application in asymmetric catalytic reactions.  
Gök, Y.; Noël, T.; Van der Eycken, J. *Tetrahedron: Asymmetry* **2010**, 21, 2275-2280.
  - 6** A novel  $C_2$ -symmetrical bisphosphane ligand with a cyclopropane backbone: Synthesis and application in Rh(I)-catalyzed Asymmetric 1,4-addition of arylboronic acids to cyclic enones.  
Gök, Y.; Noël, T.; Van der Eycken, J. *Tetrahedron: Asymmetry* **2010**, 21, 2768-2774.
  - 5** *Trans*-(2*R*,3*R*)-diphenylcyclopropane-1,1-dimethanol: a pivotal diol for the synthesis of novel  $C_2$ -symmetric ligands for asymmetric transition metal catalysis.  
Vervecken, E.; Van Overschelde, M.; Noël, T.; Gök, Y.; Álvarez Rodríguez, S.; Cogen, S.; Van der Eycken, J. *Tetrahedron: Asymmetry* **2010**, 21, 2321-2328.
  - 4** Cyclic Imidate Ligands.  
Noël, T.; Vandyck, K.; Van der Eycken, J. PCT Int. Appl. **2010**, WO 2010115903 A1 20101014 (date filed: 02/06/2010).
  - 3** Chiral imidates as a new class of nitrogen-based chiral ligands: synthesis and catalytic activity in asymmetric aziridinations and diethylzinc additions.  
Noël, T.; Vandyck, K.; Robeyns, K.; Van Meervelt, L.; Van der Eycken, J. *Tetrahedron* **2009**, 65, 8879-8884.
  - 2** Efficient one-step synthesis of chiral oxazoline-alcohol ligands via a cyclic imidate ester rearrangement.  
Noël, T.; Robeyns, K.; Van Meervelt, L.; Van der Eycken, E.; Van der Eycken, J. *Tetrahedron: Asymmetry* **2009**, 20, 1962-1968.
  - 1** Some new  $C_2$ -symmetric bicyclo[2.2.1]heptadiene ligands: synthesis and catalytic activity in rhodium(I)-catalyzed asymmetric 1,4- and 1,2-additions.  
Noël, T.; Vandyck, K.; Van der Eycken, J. *Tetrahedron* **2007**, 63, 12961-12967.

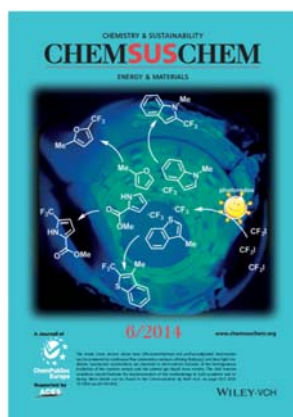
Cover articles



*Lab Chip*  
2011, 11, 2488-2492



*Macromol. React. Eng.*  
2012, 6, 507-515



*ChemSusChem*  
2014, 7, 1612-1617



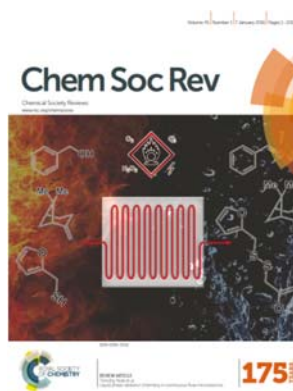
*Chem. Eur. J.*  
2014, 20, 10562-10589



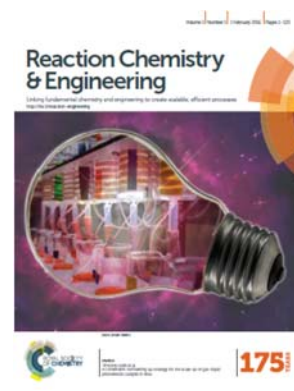
*Chem. Ing. Tech.*  
2014, 12, 2160-2179



*Chem. Eng. Technol.*  
2015, 38, 1733-1742



*Chem. Soc. Rev.*  
2016, 45, 83-117.



*React. Chem. Eng.*  
2016, 1, 73-81.



*Angew. Chem Int. Ed.*  
2017, 56, 1050-1054

### *Guest Editorials*

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- 2012** Guest editor of a special issue of Challenges: “Challenges in Chemical Processes”. (Together with Volker Hessel)
- 2015** Guest editor of a special issue in Journal of Flow Chemistry, volume 5, issue 3, pp. 123-194 “Flow Chemistry in North America”. (Together with Aaron Beeler)
- 2015** Guest editor of a special issue in Chemical Engineering Technology: “Chemical intensification in flow” **2015**, issue 10 (Together with Volker Hessel)
- 2016** Guest editor of a special issue of Challenges: “Challenges in Chemical Processes”. (Together with Volker Hessel)
- 2017** Guest editor of a special issue in ChemPhotoChem: “Flow photochemistry”. (Together with Kevin-Booker Milburn)

### *Books*

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- 2018** Micro Process Technology, Hessel, V. and Noël, T. eds., Wiley-VCH, Weinheim (Germany), **2018** (book in preparation).
- 2017** Photochemical processes in continuous-flow reactors: From engineering principles to chemical applications, Noël, T. ed., World Scientific Publishing, London (UK), **2017**, ISBN 9781786342188.
- 2016** Organometallic Flow Chemistry, Noël, T. ed., Springer, Heidelberg (Germany), **2016**, ISBN 978-3-319-33243-7.

### *Conferences participation – Oral Presentations*

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- 2018** Flow Chemistry Europe Meeting – Cambridge (UK) (Invited Talk).
- 2018** 5<sup>th</sup> Innovation for Health (Rotterdam, The Netherlands) (Invited Lecture).
- 2018** University Seminar at University of Graz (Graz, Austria) (Invited Lecture).
- 2017** Syngenta Chemistry Lecture 2017 (Stein, Switzerland) (Invited Lecture).
- 2017** Joint Meeting of 11th International Symposium on Integrated Synthesis (ISONIS-11) and 3rd International Symposium on Middle Molecular Strategy (3rd ISMMS) (Awaji Island, Japan) (Invited Lecture).
- 2017** University Seminar at University of Osaka (Osaka, Japan) (Invited Lecture).
- 2017** 1692th Zasshikai Seminar – University of Tokyo (Tokyo, Japan) (Invited Lecture).
- 2017** 17<sup>th</sup> Tateshina Conference (Tateshina, Japan) (Invited Lecture).
- 2017** iCAT-TUE Symposium (International Symposium on Catalysis for Sustainable Society) (Eindhoven, The Netherlands) (Invited Lecture)
- 2017** University Seminar Aarhus University (Aarhus, Denmark) (Invited Lecture).
- 2017** FROST 6 (6<sup>th</sup> Conference on Frontiers in Organic Synthesis Technology) (Budapest, Hungary) (Keynote Lecture, Conference Chair).
- 2017** Organic Chemistry day (La Giornata della Chimica Organica) (Pavia, Italy) (Invited Lecture).
- 2017** Advancing chemical synthesis through automation, processes and thinking, Beilstein Organic Chemistry Symposium 2017 (Potsdam, Germany) (Invited Lecture).
- 2017** COST Summer School CHAOS (Tallinn, Estonia) (Training Seminar).
- 2017** AMN/ISMM/APBCM/ANZNMf meeting (Tasmania, Australia) (Keynote Lecture).

- 2017** Invited seminar at University of Leipzig (Leipzig, Germany) (Invited Talk).
- 2017** Lab on a Chip Conference (Munich, Germany) (Invited Talk).
- 2017** Workshop “Electron Transfer, Radical Ions and Radical Chemistry” (Lyon, France) (Invited Talk).
- 2017** Invited seminar at Indian Institute of Science-Bangalore (Bangalore, India) (Invited Talk).
- 2017** Invited seminar at Indian Institute of Technology-Bombay (Mumbai, India) (Invited Talk).
- 2017** Advances in Organic Synthesis (AOS-2017) (Pune, India) (Invited Talk).
- 2017** Prof. K.V.Thomas Endowment International Symposium on New Trends in Applied Chemistry (Kochi, India) (Plenary Lecture).
- 2017** Flow Chemistry Conference Europe 2017 (Cambridge, UK) (Keynote Lecture).
- 2016** Dutch Design & Synthesis Guest Lectures seminar at Syncom (Groningen, The Netherlands) (Invited Talk).
- 2016** Flow Chemistry Society – Miami (USA) (Invited Talk).
- 2016** Invited seminar at Merck (New Jersey, USA) (Invited Talk).
- 2016** Invited seminar at Abbvie (Chicago, USA) (Invited Talk).
- 2016** Invited seminar at Virginia Commonwealth University (Richmond, USA) (Invited Talk).
- 2016** The international conference on microreaction technology, IMRET 14 (Beijing, China) (Keynote Talk).
- 2016** 22<sup>nd</sup> International Congress of Chemical and Process Engineering, CHISA 2016 (Prague, Czech Republic) (Keynote Talk).
- 2016** 27<sup>th</sup> European Colloquium on Heterocyclic Chemistry (Amsterdam, The Netherlands) (Keynote Talk).
- 2016** 39<sup>th</sup> Annual Meeting of the Brazilian Chemical Society (Goiania, Brazil) (Keynote Talk).
- 2016** Research Seminar at the Federal University of Rio de Janeiro (Rio de Janeiro, Brazil) (Invited Talk).
- 2016** NextGenChem@NL symposium (Nijmegen, Netherlands)
- 2016** Zing Flow Conference (Albufeira, Portugal) (Invited Talk, Session chair).
- 2016** Organic colloquium at Johannes Gutenberg University Mainz (Mainz, Germany) (Invited Talk).
- 2016** Research Seminar at Radboud University of Nijmegen (Nijmegen, The Netherlands) (Invited Talk).
- 2016** Research Seminar at University of Antwerp (Antwerp, Belgium) (Invited Talk).
- 2016** Research Seminar at University of Twente (Twente, The Netherlands) (Invited Talk).
- 2016** Flow Chemistry Conference Europe 2016 (Cambridge, UK) (Conference Chair – Invited Talk).
- 2016** Flow Workshop Hasselt 2016 (Hasselt, Belgium) (Invited Talk).
- 2015** Webinar on 9th December 2015 for Technology Networks (Invited Talk).
- 2015** Pacificchem 2015 (Honolulu, Hawaii, USA) (Invited Talk).
- 2015** EPIC5 (European Process Intensification Conference) (Nice, France) (Keynote Talk).
- 2015** Photochemistry Gordon Research Conference (Stonehill College, Easton, MA, USA) (Invited Talk).
- 2015** 17<sup>th</sup> International Symposium on Relations between Homogeneous and Heterogeneous Catalysis (ISHHC17) (Utrecht, Netherlands).
- 2015** NextGenChem@NL symposium (Leiden, Netherlands)
- 2015** ACS Meeting Denver, New Trends in Cross-Coupling Catalysis in Industry and Academia, Session dedicated to the 2015 ACS Award in Industrial Chemistry in honor of Dr. Thomas J.

- Colacot (Johnson Matthey) (Denver, CO, USA) (Invited Talk).
- 2015** Lecture at DSM – Geleen (Netherlands) (Invited talk).
- 2015** Flow Chemistry Society – Berlin (Germany) (Conference & Session Chair – Keynote Lecture).
- 2014** Netherlands Process Technology Symposium (NPS 14) (Netherlands) (Keynote Lecture).
- 2014** NextGenChem@NL symposium (Eindhoven, Netherlands).
- 2014** Automation in chemistry: Carbohydrate synthesis and continuous-flow (Germany) (Invited Talk).
- 2014** Queen’s University Belfast (UK) (Invited Talk).
- 2014** Flow Chemistry Society – Boston (USA) (Invited Talk).
- 2014** Engineering for a Sustainable Future – Eindhoven (NL) (Invited Talk).
- 2014** Flow Chemistry Society – Barcelona (Spain) (Invited Talk).
- 2014** University of Amsterdam – Amsterdam (NL) (Invited Talk).
- 2013** FROST 4 – Flow Chemistry Society – Budapest (Hungary) (Invited Talk).
- 2013** Prof. Guangwen Chen’s Group – Dalian Institute of Chemical Physics – Dalian **2013** (China) (Invited talk).
- 2013** Global Congress of Catalysis – Dalian **2013** (China) (Invited talk). Special attention: Chair of Photocatalysis session.
- 2013** FLOHET – 2013, Annual Florida Heterocyclic and Synthetic IUPAC – Sponsored Conference, Florida **2013** (USA) (Invited talk).
- 2013** Lecture at Janssen Pharmaceuticals – Beerse (Belgium) (Invited talk).
- 2012** MinacNed Conference, Amsterdam **2012** (The Netherlands), (Invited talk).
- 2012** European Young Chemist Award at Euchems Chemistry Conference, Prague **2012** (Czech Republic), (Invited talk).
- 2012** Euchems Chemistry Conference, Prague **2012** (Czech Republic).
- 2012** Incentive Award for Young Researchers Lecture at Vlaams Jongeren Congres, Oostende **2012** (Belgium), (Invited talk).
- 2012** Microwave & Flow Chemistry Conference, Lanzarote **2012** (Spain).
- 2011** 15<sup>th</sup> Sigma-Aldrich Organic Synthesis Meeting, Spa **2011** (Belgium), Opening and Plenary Lecture, (Invited talk).
- 2011** Lecture at Ghent University, Department of Chemistry, Ghent 2011 (Belgium), (Invited talk).
- 2011** Lecture at EcoSynth, Oostende **2011** (Belgium), (Invited talk).
- 2010** Metals In Synthesis Seminars, Massachusetts Institute of Technology **2010** (USA).
- 2010** Flemish Youth Conference of Chemistry, Blankenberge **2010** (Belgium).
- 2009** 13<sup>th</sup> Sigma-Aldrich Organic Synthesis Meeting, Spa **2009** (Belgium).
- 2009** 42<sup>nd</sup> IUPAC Conference, Glasgow **2009** (Scotland, UK).
- 2009** COST Chemistry D.40, Turku **2009** (Finland).
- 2007** Flemish Youth Conference of Chemistry, Antwerp **2007** (Belgium).

### *Supervision and guidance of Ph.D. students*

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- 2018** *Enabling and accelerating C–H functionalization through continuous-flow chemistry.*  
Hannes P. L. Gemoets (TU/e).
- 2017** *Accelerated (photo)redox chemistry in continuous-flow microreactors.*  
Natan J. W. Straathof (TU/e).
- 2016** *Flow Reactor Networks for integrated synthesis of active pharmaceutical ingredients.*



- Svetlana Borukhova (TU/e).
- 2016** *Use of supported liquid-phase catalysts and supercritical CO<sub>2</sub> in continuous micro flow.*  
Stefan C. Stouten (TU/e).
- 2016** *The direct synthesis of adipic acid from cyclohexene and hydrogen peroxide by a continuous micro-flow process.*  
Minjing Shang (TU/e).
- 2015** *The chemical plant of tomorrow and the future. Process-design intensification at different production scales.*  
Iris Vural-Gürsel (TU/e). Special attention: Cum Laude.

### ***Supervision and guidance of postdoctoral researchers***

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- 2017** Dr. Fang Zhao. Ph.D. from Tsinghua University. Current position: ....
- 2016** Dr. Alexander Nyuchev. Ph.D. from Lobachevsky State University of Nizhny Novgorod (Russia). Current position: Assistant Professor at Lobachevsky State University of Nizhny Novgorod (Russia).
- 2016** Dr. Yuanhai Su. Ph.D. from Dalian Institute of Chemical Physics. Current position: Professor at Shanghai Jiao Tong University. Special attention: recipient of 1000-talents scholarship.
- 2015** Dr. Nico Erdmann. Ph.D. from RWTH Aachen. Current position: consultant at Accenture.

### ***Participation in research projects – Supervision and guidance of (under-)graduate students***

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- 2017** *Automated screening of quenching partners and quenching rate determination with database integration.*  
Niels J. Koenig (M.Sc. Student, TU/e)
- 2017** *Transition-Metal-Catalyzed C-H Fluoroalkylation of Electron-Rich Heteroarenes Using Fluoroalkyl Bromide in Batch and Flow.*  
Ali Saadun (M.Sc. Student, TU/e)
- 2017** *Numbering-up of LSC-photomicroreactors with a chamber-style distributor.*  
Jeroen Janse (M.Sc. Student, TU/e)
- 2017** *Visible-Light Photocatalyzed Difluoroalkylation of Alkynes.*  
Wout Boon (Erasmus M.Sc. Student, KULeuven, BE)
- 2017** *Electrochemical Oxidation of Sulfides in Continuous Micro-flow.*  
Menno Lanting (M.Sc. Student, TU/e)
- 2017** *Towards a modular design for an electrochemical microreactor*  
Wouter De Smet (M.Sc. Student, TU/e)
- 2017** *A broadly applicable red dye doped luminescent solar concentrator photomicroreactor.*  
Jeroen Dobbelaar (M.Sc. Student, TU/e).
- 2017** *Automated screening and optimization for photoredox catalysis.*  
Koen Drummen (M.Sc. Student, TU/e).
- 2017** *Arylation of cysteine residues via photoredox catalysis in batch and flow.*  
Marc H. M. van den Bosch (M.Sc. Student, TU/e).
- 2016** *Investigation of two UV-induced isomerizations by means of actinometry measurements.*  
Teodora Tsompanoglou (M.Sc. Student, TU/e).

- 2016** *Exploring the scope of the photocatalytic trifluoromethylation of styrenes in batch and flow.*  
Sten Cramer (M.Sc. Student, TU/e).
- 2016** *A Comparison between Classical Cross-coupling and C-H Activation via Experiments, Cost Analysis and Green Metrics.*  
Arian Schouten (M.Sc. Student, TU/e).
- 2016** *Sensitivity analysis of important process parameters for the scale-up of microreactors for photoredox catalysis via numbering-up.*  
Rong Fan (M.Sc. Student, TU/e).
- 2016** *Rapid prototyping of Luminescent Solar Concentrator based photoreactors via 3D printing.*  
Eric W. Wieland (M.Sc. Student, TU/e).
- 2016** *Catalyst free electrochemical oxidation of sulfides in continuous microflow.*  
Bennie Knoops (M.Sc. Student, TU/e).
- 2016** *Cross-dehydrogenative coupling of aromatic compounds in continuous-flow microreactors.*  
Benjamin Bosmans (M.Sc. Student, TU/e).
- 2016** *Meta-Selective C-H Arylation of Electron-rich Aromatics in Micro Flow.*  
Kirsten Verstraete (M.Sc. Student, TU/e).
- 2016** *Biomolecule Functionalization via Photoredox Catalysis.*  
Maarten Rubens (M.Sc. Student, TU/e).
- 2015** *Continuous-flow synthesis of CF<sub>3</sub>-vinylic compounds via Heck type coupling and photoredox catalysis.*  
Nicolle Beckers (M.Sc. Student, TU/e).
- 2015** *Accurate Measurements of the Photon Flux in Multiphase Reactor Systems by Actinometry.*  
Robin Verijke (M.Sc. Student, TU/e).
- 2015** *A convenient internal numbering-up strategy for the scale up of gas-liquid photoredox catalysis.*  
Koen Kuijpers (M.Sc. Student, TU/e).
- 2015** *TiO<sub>2</sub> catalyzed aerobic oxidation of thiols in a photomicroreactor.*  
Patricia Tijssen (M.Sc. Student, TU/e).
- 2014** *Continuous-flow synthesis of CF<sub>3</sub>-vinylic compounds via Heck-type coupling.*  
Luuk Spijkers (M.Sc. Student, TU/e).
- 2014** *Combining Photoredox Catalysis and C-H activation for the Site-selective Arylation of 1-methylindole.*  
Liesbeth Colpaert (Erasmus Student, KaHo Sint Lieven).
- 2014** *Direct Functionalization of Heterocycles through Generation of a Short-lived Organolithium Intermediate in Micro-Flow.*  
Sieuwert Blommaert (Erasmus Student, KaHo Sint Lieven).
- 2014** *The Enzymatic Epoxidation of Styrene in Microflow.*  
Robin Dellaert (M.Sc. Student, TU/e).
- 2014** *Optimization of key steps towards Rufinamide and Aripiprazole.*  
Marc Van den Bergh (M.Sc. Student, TU/e).
- 2014** *Thermal Claisen Rearrangement in Flow – Increasing Selectivity of Two-step Synthesis.*  
Max Spapens (M.Sc. Student, TU/e).
- 2014** *Continuous metal scavenging with a flow liquid-liquid extraction unit.*  
Ferry Aldiansyah (M.Sc. Student, TU/e).
- 2014** *Photoredox-Catalyzed Trifluoromethylation of Thiols in Microflow.*

- Bart Tegelbeckers (M.Sc. Student, TU/e).
- 2014** *Perfluorovinylolation of Anilines in Continuous Micro Flow.*  
Laura Kollau (M.Sc. Student, TU/e).
- 2014** *Photoredox Aerobic Oxidation of Thiols to Disulfides in a Photomicroreactor.*  
Ali Talla (M.Sc. Student, TU/e).
- 2014** *Photocatalytic Perfluoralkylation in Photomicroreactors and a Study Towards the Distance-to-Time Transformation.*  
Dannie J. G. P. van Osch (M.Sc. Student, TU/e).
- 2013** *Synthesis of perfluoroalkylated heterocyclic substrates facilitated by photoredox catalysis in a capillary microreactor.*  
Hannes Gemoets (Erasmus Student, KaHo Sint Lieven).
- 2012** *Copper(I)-catalyzed azide-alkyne cycloaddition in a micro flow system: Catalyst activity study enabling high T operation and coupling to flow copper scavenging.*  
Alvaro C. Varas (M.Sc. Student, TU/e).
- 2012** *Enzyme immobilization with innovative carrier materials for chiral synthesis of  $\alpha$ -aminoalcohols in microreactors.*  
Hui Fu (M.Sc. Student, TU/e).
- 2012** *Steps towards a high pressure intensified and multi-step flow synthesis of 1,2,3-triazoles via catalyst-free Huisgen Cycloaddition.*  
Svetlana Borukhova (M.Sc. Student, TU/e).
- 2012** *The Claisen rearrangement of allyl phenyl ether and the optimization of the synthesis of allyl phenyl ethers in continuous-flow – High T, p and c processing.*  
Danny J. G. P. van Osch (B.Sc. Student, TU/e).
- 2012** *Johnson-Claisen rearrangement of cinnamyl alcohol and triethyl orthoacetate in microstructured reactors.*  
Ali Talla (B.Sc. Student, TU/e).
- 2012** *Influence of Novel Process Windows on the Claisen rearrangement of allyl phenyl ether.*  
Brian Driessen (B.Sc. Student, TU/e).
- 2011** *Contribution to the development of a multistep flow system for C–C bond formation reactions.*  
Andrew Musacchio (Undergraduate Student, MIT, USA)
- 2009** *Contribution to the application of chiral imidate,phosphane ligands in several asymmetric test reactions.*  
Punit Rasadia (Erasmus-Mundus Student, Ghent University).
- 2009** *Contribution to the synthesis of chiral imidate,phosphane ligands and their application in asymmetric allylic alkylation reactions.*  
Katrien Bert (Predoctoral Student, Ghent University).
- 2008** *Contribution to the synthesis and validation of an imidazolidine organocatalyst for asymmetric  $\alpha$ -halogenation.*  
Elvan Er (Socrates-Erasmus Student, Ghent University).
- 2007** *Contribution to the synthesis and validation of chiral dienes based on a bicyclo[2.2.1]heptadiene backbone.*  
Yilmaz Özkiliç (Socrates-Erasmus Student, Ghent University).

## **Research Funding**

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*Granted Research Project Applications*

<b>2018</b>	Marie Curie Intra-European Fellowship, Dr. Paola Riente. <i>Application of Metal Oxide Semiconductors in Photocatalysis (MOSPhotocat)</i>	178 k€
<b>2018</b>	Marie Curie Intra-European Fellowship, Dr. Carlo Sambigiato. <i>Flow Chemistry for CH activation (FlowAct)</i>	166 k€
<b>2017</b>	Host of a CSC scholarship, Ir. Yiran Cao. <i>Electrochemistry in flow.</i>	200 k€
<b>2017</b>	Collaboration with AbbVie. <i>CH oxidation.</i>	25 k€
<b>2016</b>	FET Open, co-applicant (Prof. Hessel Coordinator). <i>Catalyst Cascade Reactions in 'One-Flow' within a Compartmentalized, Green-Solvent 'Digital Synthesis Machinery' – End-to-End Green Process Design for Pharmaceuticals (One-Flow).</i>	3,900 k€
<b>2015</b>	VIDI award from Dutch Science Foundation, NWO, personal grant. <i>Sensitized photoredox catalysis in continuous-flow microreactors (SensPhotoFlow).</i>	800 k€
<b>2015</b>	Marie Curie Innovative Training Network, coordinator of the project, incl. 3 Ph.D. positions and a part-time project manager. <i>Accelerating photoredox catalysis in continuous-flow systems. (Photo4Future)</i>	2,289 k€
<b>2014</b>	Marie Curie Intra-European Fellowship, Dr. Yuanhai Su. <i>Synthesis of trifluoromethylstyrene compounds via gas-liquid photoredox catalysis in continuous-flow microreactors. (PhotoFlow)</i>	200 k€
<b>2013</b>	CatchBio grant from Dutch Science Foundation, NWO. <i>Boosting organometallic-catalyzed C–H oxidation reactions in continuous-flow microreactors.</i>	225 k€
<b>2013</b>	ECHO grant from Dutch Science Foundation, NWO. <i>Breaking the unbreakable: C-H carbonylation in micro flow and vision to process.</i>	260 k€
<b>2013</b>	Marie Curie Career Integration Grant, personal grant. <i>C–H Activation and Carbonylation in Continuous Microflow (FLACH)</i>	100 k€
<b>2012</b>	VENI award from Dutch Science Foundation, NWO, personal grant. <i>The Fluor Revolution: Boosting Fluorination in Continuous-Flow.</i>	250 k€
<b>2010</b>	Fulbright-Hays award, Bureau of Educational and Cultural Affairs, US Department of State, personal grant. <i>Multistep Microchemical Synthesis of Imatinib – Towards a Continuous Manufacturing of Pharmaceuticals.</i>	--- <sup>[a]</sup>
<b>2005-2009</b>	Extraordinary Research Fund fellow (BOF grant), personal grant.	200 k€

*Novel efficient chiral ligands for asymmetric catalysis.*

<sup>[a]</sup> Involves sponsorship of VISA, flight tickets, health insurance, etc.

### ***Outreach activities***

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- Ted Talk at TEDxAUCollege “The sunny side of chemistry” (Amsterdam, March 7<sup>th</sup>, 2017): <https://www.youtube.com/watch?v=bZ89r2tK3xc>
- Participation in the BZT show for the demonstration of chemical experiments with children (Dutch television, Ned 3, February 2, 2013).
- Teacher days: Presentation for high school science teachers during docentendag ST (2013-2014).
- Presentation about photoredox catalysis in microreactors for highly gifted children.
- Demonstration of chemical experiments (Basisschool EigenWijs, Veldhoven, groep 7-8).
- Uitleggen van wetenschappelijke fenomenen op de Nederlandse Radio (NPO Radio 2, Programma: Bureau Kijk in de Vegte)
  - 1) 26-07-2015 ‘Waarom klinkt heet water schenken anders dan koud water?’  
[http://www.npo.nl/bureau-kijk-in-de-vegte/26-07-2015/RBX\\_KRO\\_729397/RBX\\_KRO\\_1520543](http://www.npo.nl/bureau-kijk-in-de-vegte/26-07-2015/RBX_KRO_729397/RBX_KRO_1520543)  
(radio interview)
  - 2) 05-07-2015 'Waarom blijft plastic nat in de vaatwasser?'  
[http://www.npo.nl/bureau-kijk-in-de-vegte/05-07-2015/RBX\\_KRO\\_729394/RBX\\_KRO\\_1283784](http://www.npo.nl/bureau-kijk-in-de-vegte/05-07-2015/RBX_KRO_729394/RBX_KRO_1283784)  
(radio interview)
  - 3) 11-10-2015 ‘Waarom loopt het geluid op als je met een lepel op de bodem van een kop koffie tikt?’  
<http://www.kro-ncrv.nl/bureaukijkindevegte/seizoenen/2015/30-141062-11-10-2015/290-105413-waarom-loopt-het-geluid-op-als-je-met-een-lepel-op-de-bodem-van-een-kop-koffie-tikt> (radio interview)
- Twitter: @NoelGroupTUE

### ***Other professional activities***

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- Flow Chemistry Consultant for InnoStudio (Hungary), AbbVie (USA), Genentech (USA), Merck (USA), Sun Pharmaceuticals (India).
- I am an associate editor for Journal of Flow Chemistry.
- I am actively involved in the peer-review process of several scientific journals.
- In 2012-2013, I was a docent coach at TU/e for novel bachelor students in the department Chemical Engineering and Chemistry.
- Teaching: Micro Process Technology (6KM45), Advanced Inorganic Chemistry (6KM60), Introduction chemistry and chemical technology (6A1X0), Chemical Reaction Engineering (6P3X0), Advanced Organic Chemistry (8RM00)
- I am a member of several professional associations:
  - o Royal Society of Chemistry (RSC), membership number 435174.
  - o Royal Society of Chemistry Flanders (KVCV), membership number 9282.
  - o American Chemical Society (ACS), membership number 30140007.