

# Chemistry Day 2024

Friday, June 28<sup>th</sup> 2024

Campus Sterre, Building S5

Krijgslaan 281, 9000 Ghent

The Chemistry Day 2024 puts the spotlights on training and research in Chemistry at Ghent University during the academic year 2023-2024. Stakeholders, ranging from alumni, internship supervisors to master and PhD students are invited to an afternoon in which presentations and posters will give you an update on the chemistry education, introduce you to the latest results obtained by Master students and PhD researchers in Chemistry and outline research highlights by prof. dr. Steven Nolan. We proudly present alumnus dr. Jan Goossens, CEO of Aquafin NV as our special guest.

## Program

16u	<u>Welcome:</u>	Prof. dr. I. Van Driessche, Dean
16u15	<u>Lecture:</u> Mining with Gold: A Journey Towards Sustainability	Prof. dr. Steven Nolan
16u45	<u>Lecture:</u> Tapping Wastewater's Full Potential.	Dr. Jan Goossens, CEO Aquafin NV
17u15	Wrap up	Prof. dr. F. Lynen
17u25	<u>Poster session:</u> Master and PhD students	
18u30	Aji Bio-Pharma Services -Poster award & Reception	

Confirm your presence before June 22<sup>nd</sup> via:

<https://event.ugent.be/registration/chemday24>

route to the venue

<https://soleway.ugent.be/routes/4684>

contact: [Frederic.Lynen@UGent.be](mailto:Frederic.Lynen@UGent.be)

## Lecture | Mining with Gold: A Journey Towards Sustainability

The development of organogold complexes and their uses in homogeneous catalysis will be discussed along with a series of discoveries providing insights into the nature of reactive species in gold catalysis.

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**Prof. dr. Steven Nolan**  
Department of Chemistry  
Ghent University

contact: [Steven.Nolan@UGent.be](mailto:Steven.Nolan@UGent.be)

Steven P. Nolan was born in Québec City. He obtained his B.Sc. from the University of West Florida in 1983 before moving to the University of Miami to work with Prof. Carl Hoff on the thermochemistry of organometallic compounds. After a postdoctoral stay with Prof. Tobin J. Marks at Northwestern University, he joined the University of New Orleans in 1990 rapidly raising to the rank of University Research Professor in 1999. In 2006 he joined the Institute of Chemical Research of Catalonia (ICIQ). In early 2009, he moved to the School of Chemistry at the University of St Andrews in Scotland and in 2017 moved to his present position in the Department of Chemistry of Ghent University as Senior Full Professor.

Professor Nolan's work has been recognised with numerous awards such as the recent A. C. Cope Scholar award from the ACS (2023) along with various other recognitions such as an ERC advanced grant and election to learned Societies. He is Fellow of the Royal Society of Canada, the Royal Society of Edinburgh and the European Academy of Sciences.

Steve has published 3 monographs and over 660 research papers. His work has a H-index of 120.

Professor Nolan's research interests revolve around the design and synthesis of catalytic complexes enabling organic transformations.

## Lecture | Tapping Wastewater's Full Potential

Wastewater companies have an increasing role in countering the effects of climate change and in the transition towards a circular economy. Wastewater, indeed, is no longer looked at as something to treat and then to dispose of. It is increasingly considered a valuable resource of raw materials and energy.

Aquafin is recognised as an international front runner when it comes to the valorisation of wastewater. Biomass digestion is applied for the production of electricity, heat, biomethane and high-pressure steam. Phosphorus, an essential nutrient, presently is being recycled from wastewater on pilot scale. A world-scale plant for this purpose is scheduled to come on-stream in 2026 in Ghent. Furthermore, also the heat from the wastewater itself is recovered for district heating: one of the largest projects in Europe presently is coming on stream in the city of Antwerp. And last but not least, a fraction of Aquafin's treated wastewater already is being recycled into drinking water. Quite unique in Europe and with the ambition to replace 10% of the present natural sources for drinking water production by 2027.

All of this in addition to Aquafin's basic ecological assignment: treating more than 700 million m<sup>3</sup> of wastewater per year in over 300 wastewater treatment plants and managing approximately 150 sewer infrastructure projects on a yearly basis.

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Dr. Jan Goossens, CEO  
Aquafin NV

Jan Goossens is passionate about water and therefore joining Aquafin by the end of 2016 felt like a natural fit. The company employs over 1200 dedicated employees and operates more than 300 wastewater treatment units throughout Flanders.

With a PhD in analytical chemistry as an educational background, Jan started his professional career at the chemical company BASF holding several management positions in HR, sales and operations. He was involved with both plastic (nylon) and fertilizer business.

Before becoming Aquafin's CEO, Jan held the position of Managing Director at Marpobel, an industrial water treatment facility in the Port of Antwerp. Next, he was appointed as Managing Director at Industrial Services, a Dutch maintenance provider to the Chemical, Energy and Offshore Industry.

In addition to his position at Aquafin, Jan is also an (advisory) board member for several organisations and companies including Mourik (general contracting, NL) and ING Belgium (banking).

## Poster session

Master students	Author
Raman Spectroscopy of Inorganic Pigments and their Degradation Products: The Case of Manganese Oxides	Iqra Afzal
Colloidal Synthesis of ZnSe-Based Core/Shell Nanoplatelets	Chris Černe
Transalkylation Chemistry for Reprocessable Cross-linked Materials	Sien De Neve
Selective Photocatalytic Imine Formation in Atmospheric Conditions with Bi-MOFs	Sepepe Deprez
Sol-gel Centre for Research on Inorganic Powders and Thin Films Synthesis	Luna De Ridder
Improving Photostability of Environmentally Friendly InP-based QDs	Norick De Vlamynck
Exploitation of electrostatic interactions in the design of peptide-based hydrogels	Thibaut Dispa
The investigation of biologically induced Pt isotope fractionation in response to Pt-based chemotherapeutic drug resistance	Milan Felix
Influence of the host composition on lanthanide upconversion nanoparticles	Stef Goethals
Modelling Toolbox for Optical Gain in Bulk and Confined Colloidal Nanocrystals	Arne Hubrechts
Development of a LA-ICP-TOF-MS method for sclerochronological toxic heavy metal analysis in fish otoliths	Lander Iterbeke
Hollow PMO with embedded MIL-101(Fe) for catalytic degradation of organic pollutants in water	Eline Jansen
Raman Spectroscopy of Inorganic Pigments and their Degradation Products: The Case of the Lead Oxides	Kobe Masala,
Raman Spectroscopy: A Valuable Tool for Revealing Lipid Composition in Oleogels	Annabelle Mussly
A Cross-Quantification Approach to Evaluate the Quantification Error in the Analysis of Asteroid Fragments with X-ray Fluorescence Spectroscopy	Çağatay Öztörün
Combining nanoheaters and nanothermometers in nanocarrier capsules for theranostics	Z. Petryna
Synthesis of ZnSe/ZnS Core/Crown Nanoplatelets	Nigel Rising
Structure-Activity Relationship of Tolaasin I: The Role of Dhb in its Anticancer Activity	Maylin Romero
Design and synthesis of furan-modified NOP ligands	Lauren Saveyn
Lipid Nanoparticles Using Thiolactone and Gallic Acid	Iasona Sheshi
Development of an HPLC-ICP-MS/MS method for selenium speciation in cerebrospinal fluid of patients with neurological disorders	Stijn Thienpondt
Synthesis of azasteroids via skeletal editing strategies	Xander Thienpont
Towards high end photonics: self-templating method as an orientation tool in SrxBa1-xNb2O6 thin films	Yuqi Tian
Navigating spin-transitions in magnetic fields by variationally tuning restored broken symmetries	Emiel Vanden Berghe
Dual Orthogonal Crosslinked Poly(2- isopropenyl-2-oxazoline) Hydrogels	Mike Van Dorsselaer
Enhancing lipid binder analysis in historical objects via advanced liquid chromatography and high resolution mass spectrometry	Evert Van Hoestenbergh
Robust Covalent Organic Frameworks for the Photocatalytic Production of Hydrogen Peroxide	Hendrik Van Roy
Hybrid nanothermometers with emission signals intensified through dye molecule sensitization	Jens Vroman

## Poster session

Phd students and post-docs

*To be announced*

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