



HOLLAND RESEARCH SCHOOL OF MOLECULAR CHEMISTRY



ANNUAL REPORT

2023

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General

This annual report presents an overview of the research and educational activities of the graduate research school 'Holland Research School of Molecular Chemistry' (HRSMC) during 2023. The University of Amsterdam legally represents the HRSMC. The research school was founded in 1994 and has been re-accredited by the Royal Netherlands Academy of Arts and Sciences (KNAW) in 1999, 2005 and 2012. The HRSMC is now in its fifth period 2019-2024. The HRSMC is a collaboration between top research groups of four Dutch Universities: the University of Amsterdam (UvA), the VU University Amsterdam (VU), Leiden University (UL) and the Radboud University (RU).

The HRSMC harbours a powerhouse of expertise in Synthetic, Physical, and Theoretical Chemistry as well as Spectroscopy and Molecular Physics. This multidisciplinary character makes the School unique in the Netherlands and abroad; it allows it to operate in a broad field that addresses fundamental scientific problems but also challenges society currently faces in areas like sustainability, energy, and health.

This annual report presents a survey of the activities and achievements of the HRSMC, both educational and scientific, as well as the scientific achievements of the participating research groups.

As an interuniversity research school, the HRSMC has two main targets:

- A. to promote and facilitate research aimed at the three HRSMC research themes: (1) 'Synthesis, Characterisation, Properties and Reactivity of Molecules', (2) 'Physical Chemistry and Spectroscopy' and (3) 'Theoretical Chemistry'. The HRSMC board strives for coherence in the research activities of its members by promoting collaboration between the research groups and safeguarding complementarities with respect to infrastructure and expertise.
- B. to facilitate and provide a coherent, high-level educational programme to its PhD students, which offers a seamless connection to the Master degree programme. The primary aim is to teach PhD researchers to answer key questions in molecular science and to use their insights in a multidisciplinary approach.

The extensive educational programme (Schools, Courses and Symposia) offered by the HRSMC means that for all practical purposes the school takes care of the educational program of its PhD students and safeguards their progress. Importantly, the educational activities of the HRSMC are also accessible for (advanced) MSc students and thereby seamlessly connect to the undergraduate programs of the participating universities.

Besides organizing several educational activities, the HRSMC organized two application rounds within the Fellowship and PhD Mobility Programme.

Prof. dr. Wybren Jan Buma

Scientific Director of the HRSMC

The Research Programme

The research program of the HRSMC is embedded in top research groups of the VU Amsterdam (VU), the University of Amsterdam (UvA), Leiden University (UL) and the Radboud University (RU). It is organized around three different research themes in molecular chemistry which complement and mutually reinforce each other.

Theme 1: Synthesis, Characterisation, Reactivity and Properties of Molecules

This theme deals, among others, with the design, synthesis and characterization of new compounds, the development of new (bio)catalytic reactions, and the investigation of their mechanisms.



Theme 2: Physical Chemistry and Spectroscopy

Theme 2 addresses the issue of experimentally uncovering the fundamental factors behind molecular properties through the interaction between light and molecular matter. Advanced spectroscopic techniques are employed to probe and utilize fundamental processes such as catalytic events, reaction mechanisms and dynamics, and energy and electron transfer.



Theme 3: Theoretical Chemistry

Research within this theme is fully dedicated to understanding the structure of molecules and their chemistry from first principles. HRSMC's theoretical chemistry groups cover method and software development, computational chemistry, and the development of models and guiding principles for rational design of catalysts and sustainable processes. They are working on a broad range of time and length scales (atomic, molecular, supra-molecular, condensed-phase/membrane processes), naturally leading to a multi-scale approach of fundamental and applied theoretical chemistry.



Overview of the Research Groups in 2023

HRSMC Members

The research program of the HRSMC is embedded in top research groups of the VU Amsterdam (VU), the University of Amsterdam (UvA), Leiden University (UL) and Radboud University (RU). The following table gives an overview of the research groups involved in the HRSMC in December 2023:

Theme	Group (University, Institute) and Staff members
1	Homogeneous, Supramolecular and Bio-Inspired Catalysis (UvA, HIMS) Prof. dr. B. de Bruin, Prof. dr. J.N.H. Reek, Prof. dr. C.J. Elsevier, Dr. A.W. Ehlers, Dr. T.J. Mooibroek, Dr. Ir. J.I. van der Vlugt (guest appointment), Dr. S. Pullen
	Functional Materials (UvA, HIMS) Dr. S. Grecea
	Heterogeneous Catalysis and Sustainable Chemistry (UvA, HIMS) Prof. dr. G. Rothenberg, Dr. A. Garcia
	Catalysis Engineering (UvA, HIMS) Dr. N.R. Shiju
	Synthetic Organic Chemistry (UvA, HIMS) Prof. dr. J.H. van Maarseveen, Prof. dr. P. Timmerman, Dr. M.Á. Fernández-Ibáñez, Dr. S. Ingemann, Dr. J.C. Sloopweg
	Biocatalysis (UvA, HIMS) Prof. dr. F. Mutti
	Flow Chemistry (UvA/HIMS) Prof. dr. T. Noël
	Industrial Sustainable Chemistry (UvA/HIMS) Prof. dr. G.J.M. Gruter
	Biomimetic and Biomolecular Chemistry (VU, AIMMS) Prof. dr. T. Grossmann, Dr. S. Hennig, Dr. I. Drienovská
	Synthetic Organic Chemistry & Catalysis (VU, AIMMS) Prof. dr. E. Ruijter, Dr. T. Hansen Prof. dr. ir. R.V.A. Orru (guest appointment)
	Supramolecular and Biomaterials Chemistry (UL, LIC) Dr. S.J. Wezenberg

	<p>Metals in Catalysis, Biomimetics & Inorganic Materials (UL, LIC)</p> <p>Prof. dr. E. Bouwman, Prof. dr. S. Bonnet, Dr. D.G.H. Hettterscheid</p>
	<p>Synthetic Organic Chemistry (RU/IMM)</p> <p>Prof. dr. F.P.T.J. Rutjes, Dr. T.J. Boltje, Dr. M.C. Feiters</p>
2	<p>Molecular Photonics (UvA, HIMS)</p> <p>Prof. dr. A.M. Brouwer, Prof. dr. W.J. Buma, Prof. dr. S. Woutersen, Prof. dr. T. Šolomek, Dr. ir. A. Petrignani, Dr. R. M. Williams, Dr. H. Zhang</p>
	<p>Chemistry for Art Conservation (UvA, HIMS)</p> <p>Prof. dr. K. Keune</p>
	<p>Biophotonics and Medical Imaging (VU, LaserLaB)</p> <p>Dr. F. Ariese</p>
	<p>Cellular Metabolism (VU/AIMMS)</p> <p>Dr. S. Moco</p>
	<p>BioAnalytical Chemistry (VU, AIMMS)</p> <p>Prof. dr. A.M. Rijs, Dr. M. Bärenfänger</p>
	<p>PhotoConversion Materials (VU)</p> <p>Prof. dr. E.L. von Hauff, Dr. C. Ramanan, Dr. A. Baldi</p>
	<p>Biophysical Organic Chemistry (UL, LIC)</p> <p>Prof. dr. H.J.M. de Groot, Dr. Alia, Dr. F. Buda, Dr. G.J.A. Sevink</p>
	<p>Molecular Nano-Optics and Spins (UL, LION)</p> <p>Prof. dr. E.J.J. Groenen, Dr. P. Gast, Dr. M. I. Huber</p>
	<p>Laboratory Astrophysics and Astrochemistry (UL, LION)</p> <p>Prof. dr. H. Linnartz</p>
	<p>Surface Chemistry and Catalysis (UL, LIC)</p> <p>Prof. dr. M. Koper, Dr. W.T. Fu, Dr. I.M.N. Groot, Dr. D.G.H. Hettterscheid, Dr. L.B.F. Juurlink, Dr. R.V. Mom</p>
	<p>Bioelectrochemistry and Biocatalysis (UL, LIC)</p> <p>Prof. dr. L.J.C. Jeuken</p>
	<p>FELIX Laboratory (RU)</p>

Prof. dr. J. Oomens, Dr. J.M. Bakker, Dr. S. Brünken, Prof. dr. W.J. Buma (extraordinary professor)

3

Computational Chemistry (UvA, HIMS)

Prof. dr. P.G. Bolhuis, Prof. dr. E.J. Meijer, Dr. B. Ensing, Dr. D. Dubbeldam, Dr. J. Vreede, Dr. I.M. Ilie, Dr. A. Pérez de Alba Ortíz

Theoretical Chemistry (VU, EMS)

Prof. dr. F.M. Bickelhaupt, Prof. dr. L. Visscher, Prof. dr. C. Fonseca Guerra, Prof. dr. P. Gori Giorgi, Dr. O. Gritsenko, Dr. K. J. H. Giesbertz, Dr. T.A. Hamlin, Dr. P. Vermeeren, Dr. A. Förster

Biomolecular Simulation and Modeling (VU, EMS)

Dr. D.P. Geerke

Theoretical Chemistry (UL, LIC Energy & Sustainability)

Prof. dr. G. J. Kroes, Dr. J. Meyer, Dr. M.F. Somers, Dr. A.L.M. Lamberts

Theory in Surface science and electrochemistry (UL, LIC)

Dr. Katharina Doblhoff-Dier

Theoretical Chemistry (RU)

Prof. dr. ir. G.C. Groenenboom, Prof. dr. H.M. Cuppen, Prof. dr. F.M. Bickelhaupt (extraordinary professor)

Research and Education

HRSMC Course 'Understanding Molecular Simulation', Molsim 2023

9-20 January 2023, University of Amsterdam

A total of 82 participants: 15 UvA MSc students, 11 Dutch PhD students (2 of them were HRSMC members) and 56 participants came from foreign universities.

The invited lecturers were: Daan Frenkel (University of Cambridge, UK), Berend Smit (EPFL, CH), Christopher Mundy (PNNL, USA), Thijs Vlugt (Delft University of Technology), Kevin Jablonka (EPFL, CH), Peter Bolhuis (UvA), Bernd Ensing (UvA), Evert Jan Meijer (UvA), David Dubbeldam (UvA), Ioana Ilie (UvA), Jocelyne Vreede (UvA)

Organizers: Evert Jan Meijer (University of Amsterdam), Berend Smit (EPFL), Daan Frenkel (University of Cambridge), David Dubbeldam (UvA), Laura Bastiaans-Tomé (UvA)

HRSMC Course 'Targeted Synthesis Challenges'

January 18, 2023, VU

A total of 21 participants attended this very well evaluated course, 9 PhD students of which 8 HRSMC members (VU: 4, UvA: 5) and 6 M.Sc. students (VU: 3, UvA: 3)

Organisers: Prof. dr. E. Ruijter, Prof. dr. J.H. (Jan) van Maarseveen (UvA), Rachel Scheffelaar (UvA, HRSMC), Brahim Bouichfar (UvA, HRSMC), Laura Bastiaans -Tomé (UvA, HRSMC)

TULIP Summer School 2023

April 3 – 6, 2023, Noordwijk, The Netherlands

A total of 38 participants attended this school of which 33 PhD students (19 HRSMC students and 21 from foreign universities), 1 postdoc and 4 MSc students (of which 2 from the HRSMC Class of Excellence)

The invited speakers were Brooks Pate (University of Virginia, USA), Randall Goldsmith (University of Wisconsin-Madison, USA), Hans Jakob Wörner (ETH Zürich, Switzerland), Mischa Bonn (Max Planck Institute for Polymer Research, Germany), Helen Fielding (University College London, UK), Valérie Gabelica (Institut Européen de Chimie et Biologie, France)

Organisers: Wybren Jan Buma (University of Amsterdam), chairman; Anouk Rijs (VU) Joost Bakker (RU); Rachel Scheffelaar (HRSMC); Laura Bastiaans-Tomé (HRSMC/UvA); Brahim Bouichfar (HRSMC/UvA).

High Impact Writing Course 2023

June 6-9, 2023, UL Amsterdam

A total of 17 participants (UvA: 8, UL: 8, external 1).

The Scientific Instructors were Prof. dr. U. Muller (Department of Biology /California State University Fresno) and Dr. O. Berg (Department of Chemistry and Biochemistry/ California State University Fresno)

HRSMC PhD/Postdoc Workshop | Put Your Science in the Spotlight!

6 October 2023, VU Amsterdam

A total of 64 participants attended this workshop of which 62 PhD students/postdocs (VU: 13, UvA: 37, UL: 12) and 2 MSc. Students

Lectures were held by Jenny Hasenack, Rasa Muller, Suzanne Verhees, Thomas Hartman, Irene Regeni (Leiden University), Thomas Hansen (Vrije Universiteit Amsterdam), and Jesús San Jose Orduna (University of Amsterdam)

Organisers: Celine Nieuwland, Eva Meeus, Pieter Laan, Rafaël Vos, Phebe van Langevelde, Canan Durukan

HRSMC Symposium

10 November 2023, Scheltema, Leiden

A total of 151 people attended the symposium.

Guest lecturer:

Prof. dr. N.H. (Nathalie) Katsonis (University of Groningen)

HRSMC staff lecturers:

- Prof. dr. ing. T. (Timothy) Noël (University of Amsterdam) – Theme 1
- Prof.dr. L.J.C. (Lars) Jeuken (Leiden University) – Theme 2
- Dr. T.A. (Trevor) Hamlin (VU Amsterdam) – Theme 3

PhD lecturers:

- Zhiyuan He (University of Amsterdam)
- Marvin A. Albers (VU Amsterdam)
- Robert Smit (Leiden University)
- Robert W. Schmidt (VU Amsterdam / University of Amsterdam)
- Robert A.B. van Bree (Leiden University)

The Dick Stufkens Prize 2023

The Dick Stufkens Prize 2023 for best PhD thesis of the Holland Research School of Molecular Chemistry (HRSMC) has been awarded to Dr Arno Förster for his thesis 'Many-body perturbation theory with Slater type orbitals'. Förster obtained his doctorate with the qualification 'cum laude' on 9 December 2022 with Prof. Lucas Visscher from Vrije Universiteit Amsterdam, where he was appointed assistant professor earlier this year. With his PhD research, he has made a substantial contribution to the quantum chemical modelling of molecular systems.

Arno Förster's research concerns the modelling of molecules and materials at the fundamental quantum chemical level. This involves quantum mechanical calculations of electrons, their energies and their interactions. Since for large systems it is impossible to compute exact solutions, the models can only be approximations. However, thanks to powerful computers and sophisticated software, this can be done with increasing accuracy. To this Förster has now made a significant contribution. He implemented a novel modelling approach, based on the 'many-body perturbation theory' (MBPT), in the Amsterdam Density Function (ADF) software package.



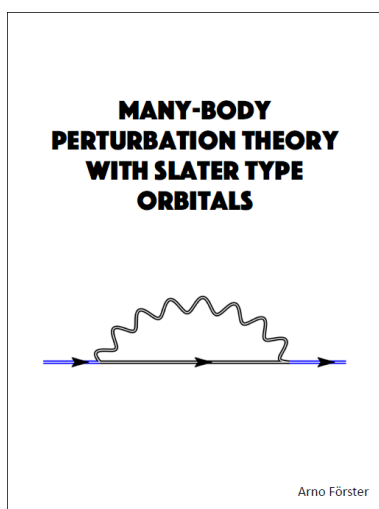
Dr Arno Förster. Photo: HRMSC.

Complex theory

The MBPT approach starts from a more or less hypothetical model situation that is relatively easy to solve, with no or minimal interactions. From there, 'perturbations' are added to include more electronic interactions and thus better approximate the actual system. Förster used the 'GW method' initiated by the Swedish quantum chemist Lars Hedin. It enables calculating electron ionization and addition and, with the addition of the so-called Bethe-Salpeter equation (BSE), also electronic excitations. The rather complex GW-BSE method has already been used for 'infinite' systems such as electron gases and solids, and only recently gained popularity for molecules. Modelling molecules however requires different algorithms and comes with its own numerical challenges. Especially the modelling of large molecules which are often relevant in practical applications, often requires additional approximations which should not compromise the accuracy of the results.

Förster was able to meet all these challenges and implement the GW-BSE method in the innovative ADF software that has been developed in the Theoretical Chemistry group at Vrije Universiteit Amsterdam. It is now distributed and extended by the spin-off company SCM. ADF is particularly strong in understanding and predicting structure, reactivity (catalysis), and spectra of molecules. One of its characteristics is the use of Slater-type orbitals, a set of functions describing the location and wave-like behaviour of electrons in molecules. From a physical perspective, these are better suited than the commonly used Gaussian orbitals, but lead to much more difficult integrals. This is why ADF makes extensive use of numerical integration and other special computational techniques.

A formidable achievement



Cover of the thesis.

The jury for the Stufkens prize speaks of a 'formidable achievement' that Förster was able to familiarize himself in such a short time with both the complex GW-BSE method and the large-scale ADF programming system. It is remarkable that his implementation, that he tested and meticulously documented, is so efficient that it could already be applied to large chemically relevant systems on single compute nodes. Among these are DNA fragments as well as a 6 chromophore model of the reaction centre of photosystem II, with about 2000 electrons. Considering the complicated theory and complex implementation, this seemed unlikely beforehand.

Whether the ADF/GW-BSE modelling will outperform popular existing methods such as TD-DFT remains to be seen. It has not yet been conclusively established that the method results in significantly more accurate excitation energies. However, it is to the credit of Förster's work that now large-scale validation of GW-BSE

can be accomplished.

HRSMC Class of Excellence

In September 2023 three (3) students started the HRSMC Class of Excellence. One (1) student obtained the certificate this year after successfully graduating from the programme.

Class of Excellence Pitch Prize 2023

On June 27, 2023 Michelle van Dongen has defended her research proposal for a jury of HRSMC staff members and a member of the external advisory committee of the HRSMC. The research proposal is an obligatory part of the [HRSMC Class of Excellence](#), a programme for excellent chemistry master students. The jury was very much impressed with her pitch and the subsequent discussion with the jury members, and therefore decided to award her with the HRSMC Class of Excellence Pitch Prize.

The prize consists of €1500,- (for a contribution) to attend a conference or course/training. This conference or course/training needs to take place within one year after graduation and needs to be approved by the HRSMC.



PhD Theses

Listed here are PhD theses with HRSMC group leaders as supervisor and/or co-supervisor. In 2023 4 HRSMC PhD certificates have been rewarded.

University of Amsterdam

3/21/2023

Covalently templated synthesis of catenanes and rotaxanes

Author: S. (Simone) Pilon

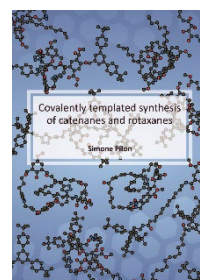
Supervisor: J.H. van Maarseveen

Co-supervisor: M.A. Fernández

Ibáñez

Group: Synthetic Organic Chemistry

Link: [Read or download this thesis](#)



5/26/2023

Tracking water molecules and carboxylate ions in confinement using advanced vibrational spectroscopy

Author: A. (Alexander) Korotkevich

Supervisor: H.J. Bakker

Co-supervisor: S. Grecea

Group: FELIX Laboratory

Link: [Read or download this thesis](#)



6/15/2023

Metalloradical synthesis of medium-sized ring systems, and their applications as molecular photoswitches and synthetic platforms

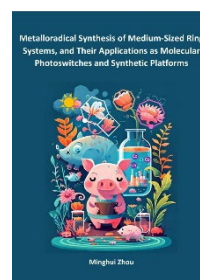
Author: M. (Minghui) Zhou

Supervisor: B. de Bruin

Co-supervisor: J.N.H. Reek

Group: Homogeneous, Supramolecular and Bio-Inspired Catalysis

Link: [Read or download this thesis](#)

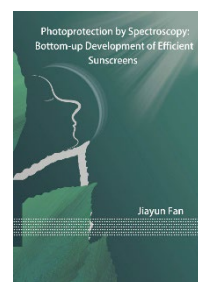


6/21/2023

**Photoprotection by spectroscopy:
bottom-up development of efficient sunscreens**

Author: J. (Jiayun) Fan
Supervisor: W.J. Buma, J. Oomens
Co-supervisor:
Group: Molecular Photonics

Link: [Read or download this thesis](#)

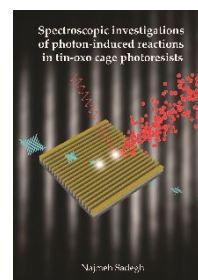


9/20/2023

**Spectroscopic investigations of the photon-induced reactions
in tin-oxo cage photoresists**

Author: N. (Najmeh) Sadegh
Supervisor: A.M. Brouwer
Co-supervisor: P.M. Kraus
Group: Molecular Photonics

Link: [Read or download this thesis](#)



9/26/2023

Merging methodology & technology for light-mediated synthesis

Author: T. (Ting) Wan
Supervisor: T. Noël
Co-supervisor:
Group: Flow Chemistry

Link: [Read or download this thesis](#)

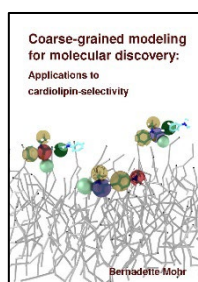


12/20/2023

**Coarse-grained modeling for molecular discovery:
Applications to cardiolipin-selectivity**

Author: B.J. (Bernadette) Möhr
Supervisor: P.G. Bolhuis
Co-supervisor: T. Bereau
Group: Computational Chemistry

Link: [Read or download this thesis](#)



VU Amsterdam

5/16/2023

Computational Investigation of Chemical and Theoretical Factors in SERS-CT Selection Rules

Author: S. (Sahar) Ashtarijafari

Supervisor: L. Visscher

Co-supervisor: Z. Jamshidi

Group: Theoretical Chemistry

Link: [Read or download this thesis](#)



11/16/2023

Fundamental Palladium Catalyzed Oxidative Addition Reactions

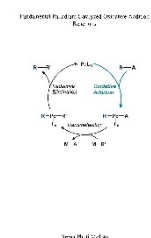
Author: B.P. (Bryan) Moloto

Supervisor: M. Bickelhaupt

Co-supervisor: T.A. Hamlin

Group: Theoretical Chemistry

Link: [Read or download this thesis](#)



6/7/2023

Ruthenium- and cobalt-based artificial metalloenzymes for photocatalytic water oxidation in artificial photosynthesis

Author: E.A. (Ehider) Polanco Rivas

Supervisor: S.A. Bonnet

Co-supervisor:

Group: Metals in Catalysis, Biomimetics & Inorganic Materials

Link: [Read or download this thesis](#)



7/4/2023

Surface temperature and the dynamics of H₂ on Cu(111)

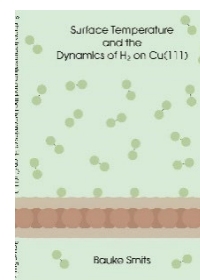
Author: B. (Bauke) Smits

Supervisor: G.J. Kroes

Co-supervisor:

Group: Theoretical Chemistry

Link: [Read or download this thesis](#)



7/4/2023

Highly accurate simulations and benchmarking of molecule-surface reactions

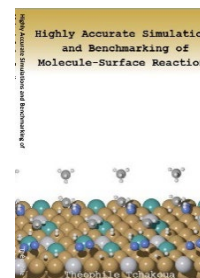
Author: T. (Théophile) Tchakoua

Supervisor: G.J. Kroes

Co-supervisor: M.F. Somers

Group: Theoretical Chemistry

Link: [Read or download this thesis](#)



7/4/2023

Ruthenium-peptide conjugates for targeted phototherapy

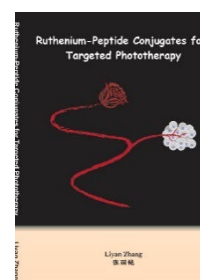
Author: L. (Liyan) Zhang

Supervisor: S.A. Bonnet, E. Bouwman

Co-supervisor:

Group: Metals in Catalysis, Biomimetics & Inorganic Materials

Link: [Read or download this thesis](#)

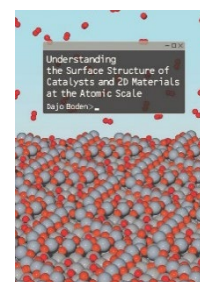


9/12/2023

Understanding the surface structure of catalysts and 2D materials at the atomic scale

Author: D. (Dajo) Boden
Supervisor: I.M.N. Groot
Co-supervisor: J. Meyer
Group: Surface Chemistry and Catalysis

Link: [Read or download this thesis](#)

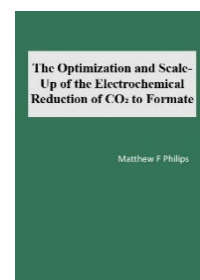


11/8/2023

The optimization and scale-up of the electrochemical reduction of CO₂ to formate

Author: M.F. (Matt) Philips
Supervisor: M.T.M. Koper
Co-supervisor: G.J.M. Gruter
Group: Surface Chemistry and Catalysis

Link: [Read or download this thesis](#)

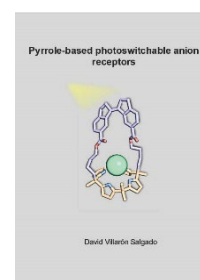


12/5/2023

Pyrrole-based photoswitchable anion receptors

Author: D. (David) Villarón Salgado
Supervisor: S.J. Wezenberg
Co-supervisor:
Group: Supramolecular and Biomaterials Chemistry

Link: [Read or download this thesis](#)

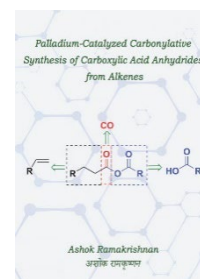


12/19/2023

Palladium-catalyzed carbonylative synthesis of carboxylic acid anhydrides from alkenes

Author: A. (Ashok) Ramakrishnan
Supervisor: E. Bouwman, D.G.H. Hetterscheid
Co-supervisor:
Group: Metals in Catalysis, Biomimetics & Inorganic Materials

Link: [Read or download this thesis](#)



Radboud University

1/25/2023

Metabolite identification using infrared ion spectroscopy

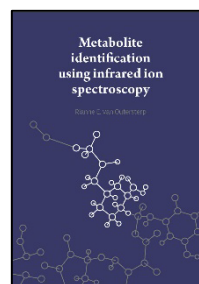
Author: R.E. (Rianne) van Outersterp

Supervisor: J. Oomens

Co-supervisor: G. Berden

Group: FELIX Laboratory

Link: [Read or download this thesis](#)



8/28/2023

Synthesis of piperidine and furopyrrolidine alkaloids

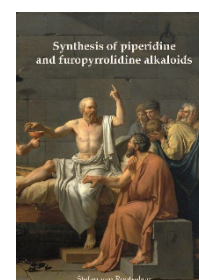
Author: S. (Stefan) van Rootselaar

Supervisor: F.P.J.T. Rutjes

Co-supervisor: D. Blanco-Ania

Group: Synthetic Organic Chemistry

Link: [Read or download this thesis](#)



9/12/2023

Rotational and vibrational action: Spectroscopic studies on cold molecular ions

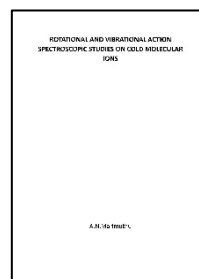
Author: A.N. (Aravindh) Marimuthu

Supervisor: B. Redlich

Co-supervisor: S. Brünken

Group: FELIX Laboratory

Link: [Read or download this thesis](#)



10/30/2023

Advancing molecular structure elucidation using infrared ion spectroscopy

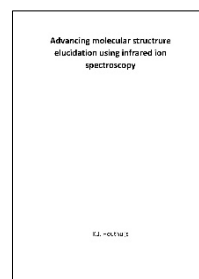
Author: K.J. (Kas) Houthuijs

Supervisor: J. Oomens

Co-supervisor: J.K. Martens; W.C.M. Berden

Group: FELIX Laboratory

Link: [Read or download this thesis](#)



Fellowship Programme

17th call – April 2023



Prof. Christian S. Hamann, Full Professor, Albright College, Reading, PA

Hosted by Dr. Trevor A. Hamlin, Prof. Dr. F. Matthias Bickelhaupt (VU).

Stay: 6 months

18th call – October 2023



Dr. Luca Bergamasco, Assistant Professor with time contract (tenure track)
Department of Energy, Politecnico di Torino, Italy

Hosted by Prof. Sylvester Bonnet (UL).

Stay: 1,5 months

PhD Mobility Programme

7th call – April 2023



Eveline H. Tiekink from the group of Prof. Dr. F. Matthias Bickelhaupt and Dr. Trevor Hamlin (VU) has visited Prof. Dr. Miquel Solà i Puig, Institute of Computational Chemistry and Catalysis (University of Girona, Spain).

Stay: 2 months



Lingshu Zhuo from the group of Prof. E.J. (Evert Jan) Meijer (UvA) has visited Prof. Dr. Jorge J. Carbó at the University of Rovira i Virgili, Department of Chemistry, Spain.

Stay: 3 months

8th call – October 2023



Matthijs Hakkennes from the group of Prof. Dr. Sylvestre Bonnet and Dr. Francesco Buda (UL) has visited Prof. Dr. Fernanda Duarte (Oxford University, UK).

Stay: 3 months

Financial Account 2023

Income		Expenses	
Contribution UvA 2023 - faculty ¹	150.000	Donation HIMS Institute ¹	150.000
Contribution UvA 2023 - HIMS ¹	150.000	Personnel Costs	99.604
TULIP School (fee and sponsoring) ²	45.250	Office and management costs incl. Annual report	2.559
Correction Fellowship 2019/2020	39.392	Fellowship Programme	26.125
HRSMC Workshop PhD platform - income	2.000	Dick Stufkens PhD prize	3.041
		TULIP School	46.277
		HRSMC Symposium	14.291
		HRSMC Class of Excellence	3.116
		HRSMC Writing Course (Ulrike Muller)	8.613
		Courses	557
		Workshop PhD Platform	5.293
	€ 386.642		€ 359.475
Income minus Expenses	€ 27.167		

1. As of 2014, a new agreement between the VSNU (Association of universities in the Netherlands) and SODOLA (the Dutch network of accredited research schools in all fields of academic research) has become applicable for the funding of Research Schools. Based on this agreement, as of 2015, the HRSMC should get funding of 300 KEuro. Instead of 50 kEuro from the faculty and 5 kEuro from the HIMS Institute, the contribution of the faculty is raised to 150 kEuro and 150 kEuro for the HIMS Institute. As this increase for the HIMS Institute would strongly affect HRSMC affiliated research groups from the UvA/HIMS Institute, the HRSMC Board decided to donate 150 kEuro to the HIMS Institute.
2. The HRSMC is grateful to the John van Geuns foundation for its financial support for the HRSMC Photochemistry and AMOCC School.

