FACULTY
OF SCIENCES

CHEMISTRY@UGent

Faculty of Sciences

GHENT
UNIVERSITY

RESEARCH

GHENT
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INORGANIC AND PHYSICAL CHEMISTRY

http://www.we06.ugent.be/

SCRiPTS group

Prof. Isabel Van Driessche

Prof. Klaartje De Buysser.

-Controlled synthesis and surface chemistry of metal oxide nanoparticles and mesoporous materials

- Chemical-solution-based coating development

Luminescent Lanthanide Lab

f-element coordination chemistry

Prof. Rik Van Deun,

Synthesis / study new lanthanide-based materials:

- lanthanide-doped nano particles,
- lanthanide metal-organic frameworks (MOFs),
- mononuclear lanthanide coordination compounds
- near- and mid-infrared emitting La-doped glasses

Physics and Chemistry of Nanostructures group

Prof. Zeger Hens

Prof. Edouard Brainis

Synthesis and characterization of semiconductor and metal colloidal nanocrystals.

Ghent Quantum Chemistry Group

Prof. Patrick Bultinck

Theoretical chemistry

- Density matrix theory and chemical applications
- Chiroptical spectroscopy
- Atoms-in-molecules and chemical bonding
- Conceptual Density Functional Theory
- Method development

XStruct

BIO-INORGANIC CHEMISTRY

Prof. Kristof Van Hecke

Determination of the molecular structure of several compounds by single crystal X-ray diffraction (XRD) or crystallography

Center for Ordered Materials, Organometallics & Catalysis

Prof. Pascal Van Der Voort

Synthesis of new mesoporous materials and their application in heterogeneous catalysis, adsorbents and biomedical systems

Homogeneous Catalysis and Organometallic Chemistry

Prof. Steven P. Nolan

-Homogeneous catalysis

-Organometallic chemistry

-Development of novel methods for molecular assembly

ORGANIC AND MACROMOLECULAR CHEMISTRY

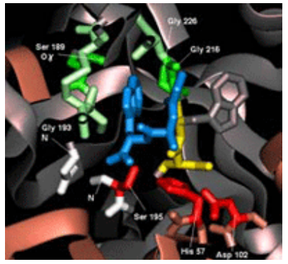
http://www.orgchem.ugent.be/

(Bio)Organic synthesis

Organic synthesis:
The Winne research group

Prof. Johan Winne

- Chemical synthesis and derivatisation of organic compounds with non-trivial carbon connectivities,
- Substrate-driven approach: highly modular synthetic intermediates as versatile building blocks or chemical platforms for various applications.



Organic and Biomimetic Chemistry

Prof. Annemieke Madder

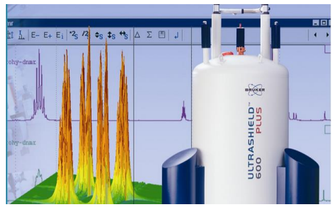
- Serine Protease Mimics
- Novel techniques for cross-linking of biomacromolecules
- Construction of conformationally restricted multipodal peptide architectures

Organic and Bio-organic Synthesis

Prof. Johan Van der Eycken

- Synthesis of compounds with biological activity
- Synthesis of novel fluorizers for detection of gene expression.
- Development of new homochiral building blocks using enzymatic catalysis
- Asymmetric synthesis based upon transition metal catalysis.
- Combinatorial libraries

Organic analytical methods



NMR and structure analysis

Prof. José Martins

- Clp
- Development Methodology
- Dna
- Fluor
- Modeling

Seperation Sciences Group (SSG)

Prof. Frederik Lynen

- GC-Flame Ionisation Detection (FID)
- HPLC-UV (DAD)
- HPLC-ELSD
- CE-UV
- High res. HPLC-TOF-Mass Spectrometry
- GC-Mass Spectrometry
- HPLC-Mass Spectrometry

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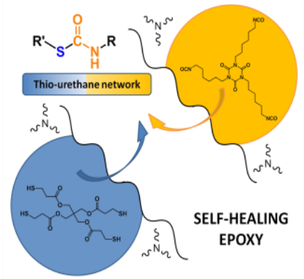
Macro- and Supramolecular Chemistry

PBM-UGent
Polymer Chemistry & Biomaterials Group

Prof. Peter Dubruel

- Functional polymers for biomedical applications
- Scaffolds for tissue engineering
- Polymers for biophotonic applications
- Advanced drug/gene delivery systems

PCR



Polymer Chemistry Research Group

Prof. Filip Du Prez

Research themes:

- From polymer functionalization to absolute control
- Dynamic and self-healing polymeric materials
- Giving renewable polymers function(ality)

SUPRAMOLECULAR CHEMISTRY

Prof. Richard Hoogenboom

Development of adaptive and responsive materials inspired by natural self-assembly processes by combining directional supramolecular interactions with well-defined polymeric building blocks and responsive polymer structures.

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ANALYTICAL CHEMISTRY

http://www.analchem.ugent.be/

esa Electrochemistry and Surface Analysis

Prof. Mieke Adriaens

- development /optimization of spectro-electrochemical devices
- corrosion and corrosion inhibition
- development of protective coatings.

RamSpec Raman Spectroscopy Research Group

Prof. Luc Moens & Prof. Peter Vandenabeele

- optimising Raman Spectroscopy for different analytical applications
- improvement data acquisition and data interpretation
- development/implementation of mobile Raman spectrometers in a broad range of research applications.

A&MS Atomic and Mass Spectrometry

Prof. Frank Vanhaecke

- ICP-mass spectrometry
- determination, elemental speciation and isotopic analysis of (trace) metals and metalloids
- interdisciplinary contexts.

X-ray Microspectroscopy and Imaging XMI Universiteit Gent - Ghent University

Prof. Laszlo Vincze)

- synchrotron radiation based micro X-ray Fluorescence analysis (μ-XRF), μ-XRF imaging and absorption spectroscopy (XAS) in a variety of applications from various disciplines: chemistry, geology, cosmo-chemistry, environmental science, art and cultural heritage, ...

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