

Medium and Heavy Infrastructure Grant Applications

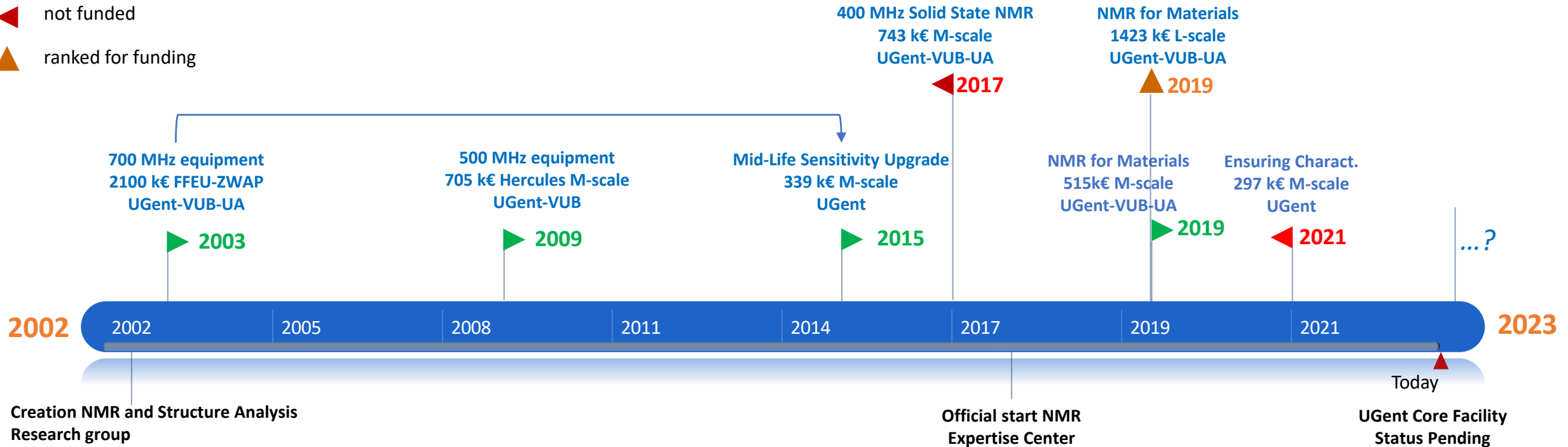
- Experiences -

José C. Martins

Department of Organic & Macromolecular Chemistry
NMR and Structure Analysis Unit
NMR Centre of Expertise
Jose.Martins@UGent.be

Track Record

- ▶ funded
- ◀ not funded
- ▲ ranked for funding



2015 M-scale Sensitivity Upgrade at High Magnetic Field for NMR Based Science in the Next Decade

2017 M-scale A solid state Nuclear Magnetic Resonance platform for materials and catalyst development

2019 M-scale Magnetic resonance equipment for advanced material research: molecular characterization of solid, soft, homogeneous and heterogeneous matter for the development of advanced functional materials and chemical catalysis

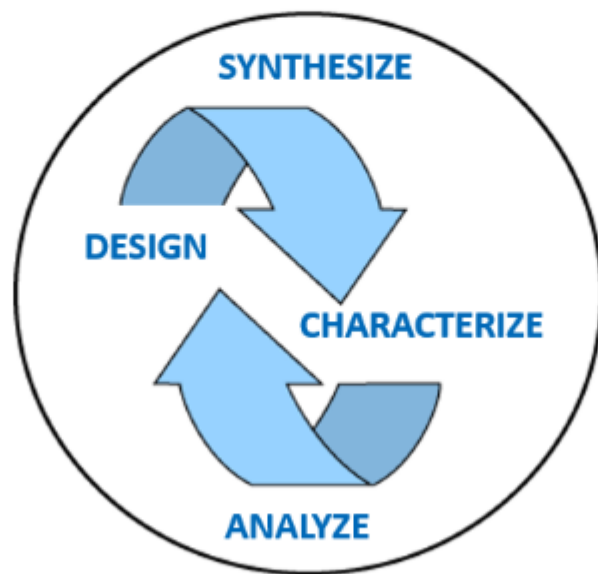
2019 L-scale A magnetic resonance platform for next decade research and innovation in chemistry

2021 M-scale Ensuring high-throughput molecular characterization at the heart of chemical research: rejuvenation and capacity for growth investment for the open-access 400 MHz liquid state NMR platform

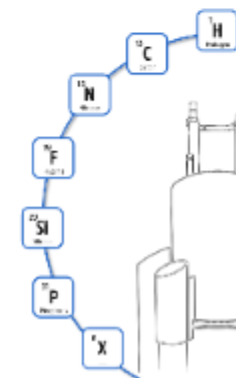
What is it about?

From the project abstract:

Whether fundamental in endeavor or applied in character progress in chemistry research and innovation is linked to powerful techniques and methodologies for analytical and structural characterization

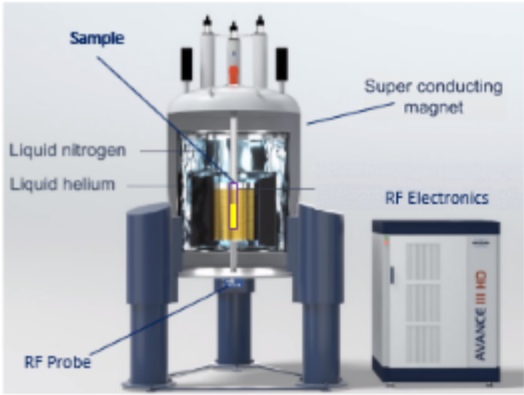
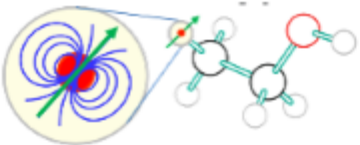


A Magnetic Resonance Platform
for Next Decade Research and
Innovation in Chemistry



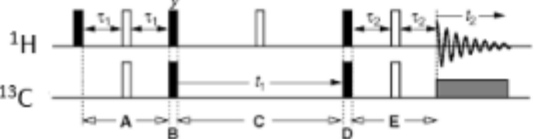
What is it about?

Some basics to set the stage

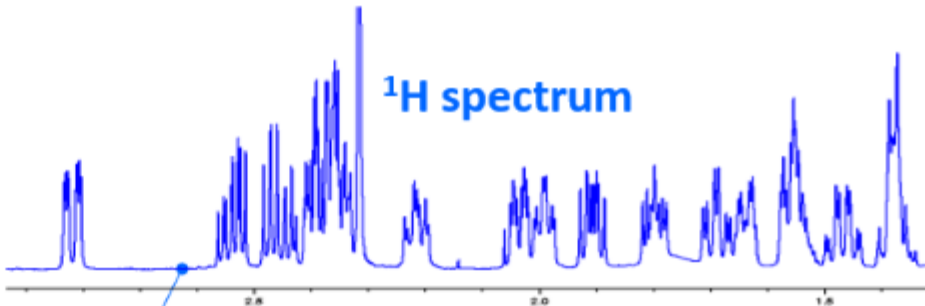


+

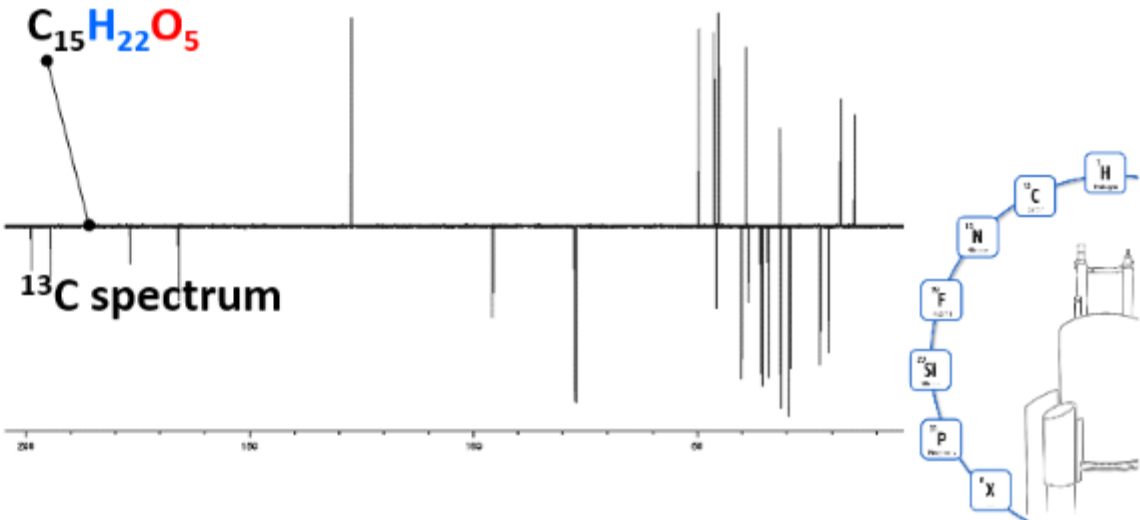
RF pulse sequence



A Magnetic Resonance Platform
for Next Decade Research and
Innovation in Chemistry

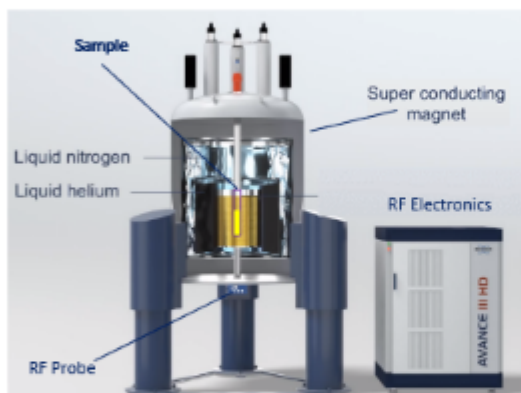
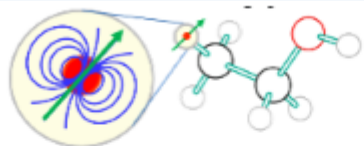


=

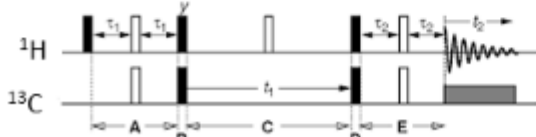


What is it about?

Some basics to set the stage



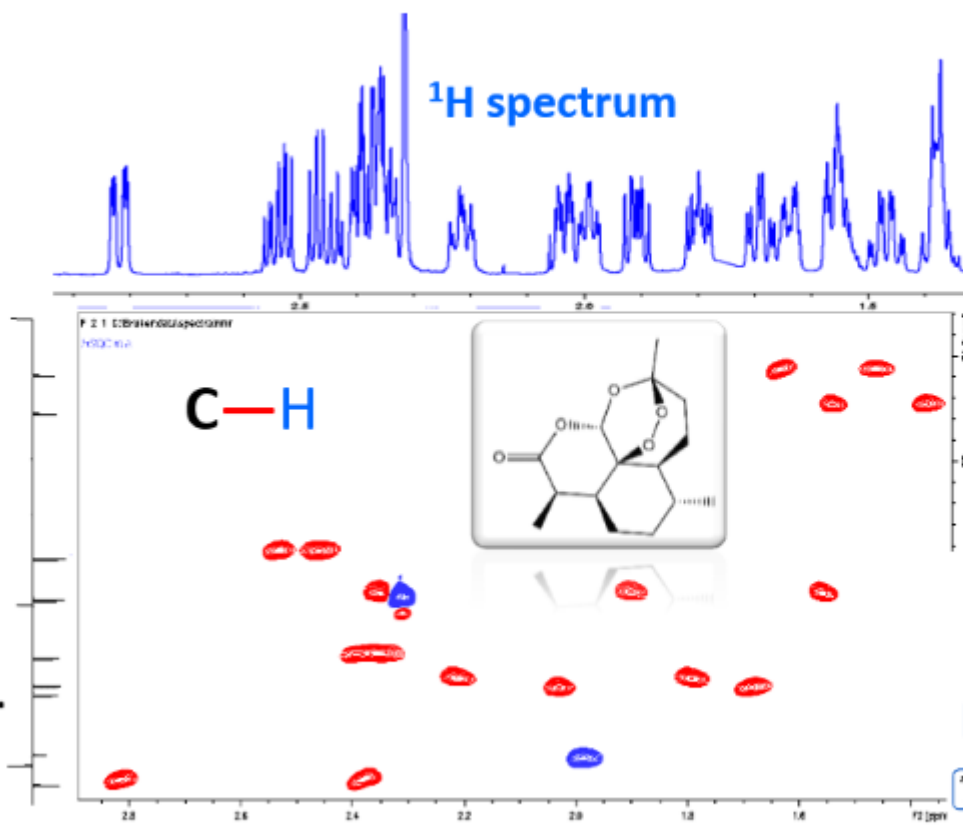
RF pulse sequence



A Magnetic Resonance Platform
for Next Decade Research and
Innovation in Chemistry



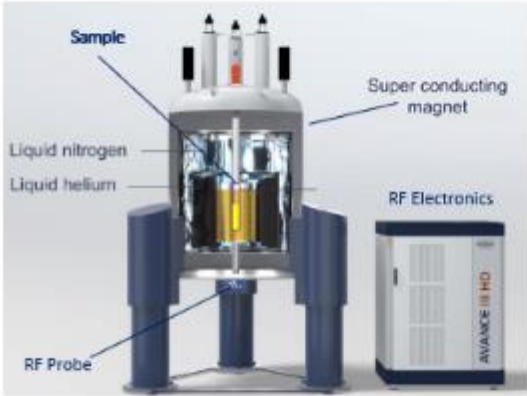
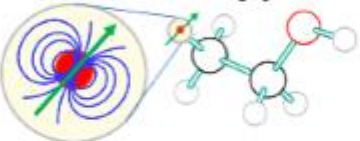
^{13}C spectrum



Chemical Identity and Structure

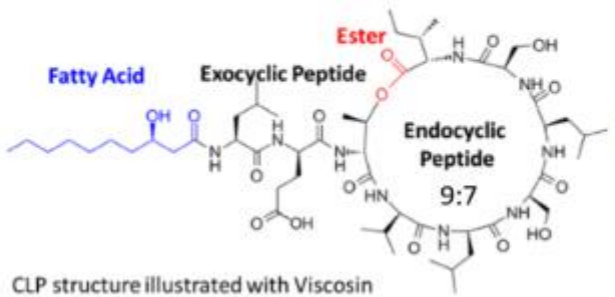
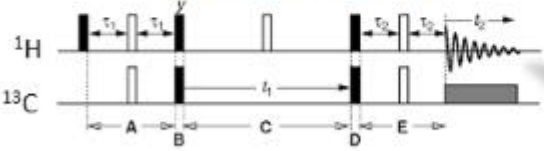
What is it about?

Some basics to set the stage

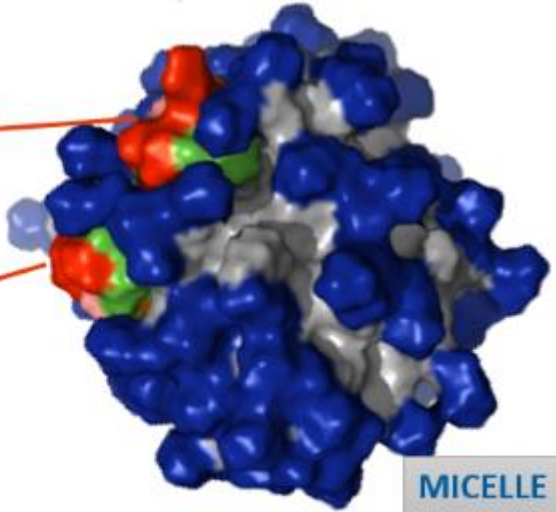
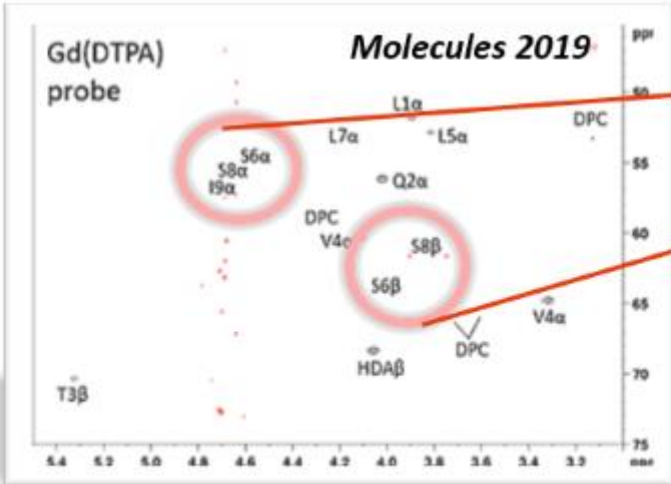
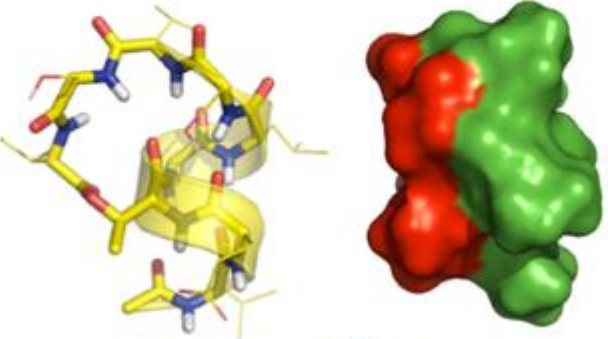


+

RF pulse sequence

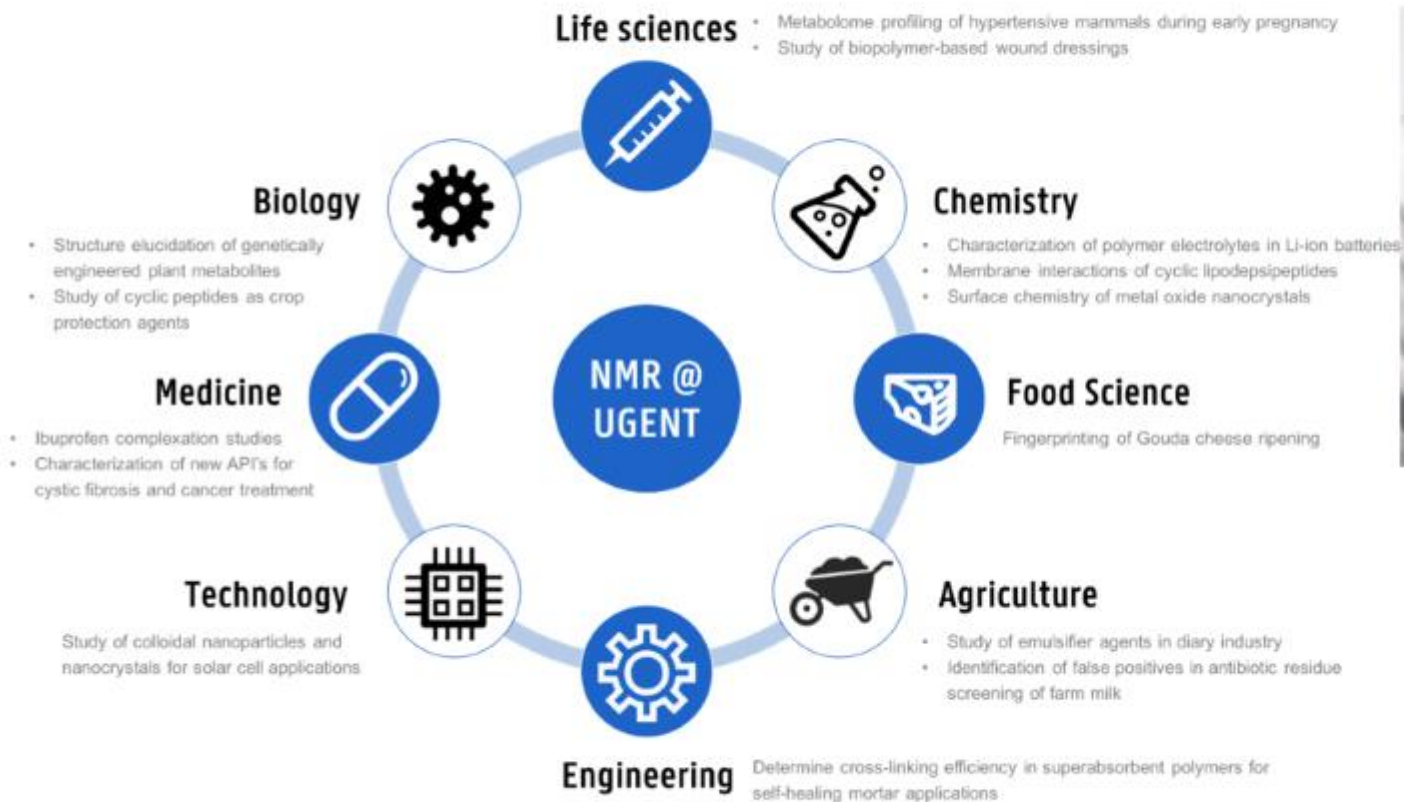


CLP structure illustrated with Viscosin

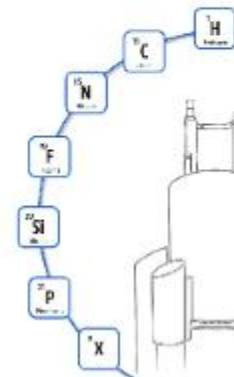


3D Structure and Intermolecular Interactions

NMR Spectroscopy - a Key Technology in Chemical R&D and Innovation



A Magnetic Resonance Platform
for Next Decade Research and
Innovation in Chemistry



NMR Spectroscopy - a Key Technology in Chemical R&D and Innovation



NMR EXPERTISE CENTRE

Log in →

Search

[About us](#) [Expertise](#) [Equipment](#) [Collaboration](#) [Contact](#)

About us

- [Who are we](#)
- [How to collaborate](#)
- [Spectrometer overview](#)
- [Register for the spectrometer reservation system](#)

NMR expertise

- [Case studies](#)
- [Techniques-publications](#)



Any NMR equipment requires Medium/Large Scale Infrastructure Funding



400 MHz
650k€



500 MHz
@UGent
900k€



700 MHz
2.1M€



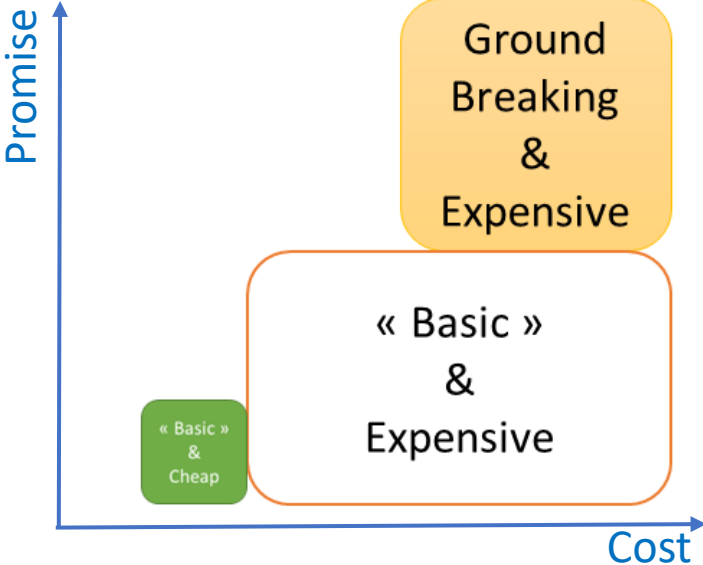
1200 MHz
@Lille
~12M€

Medium and Large Scale Infrastructure Funding: Some Thoughts

Is your planned equipment....

- ✓ **Pushing scientific/technological boundaries – Opening up novel application area's – Making the impossible possible?**

win-win if capable of creating a significant consortium of users



- ✓ **Replacing older (preventive), defaulting (corrective) equipment or providing service essential for science?**

Put emphasis on the ground-breaking science you will (no longer) be able to do (science first)

Larger (but realistic) consortium required to improve your chances - but can make science less clear

Medium and Large Scale Infrastructure Funding: Things to Keep in Mind

- **It's not only about Science – ‘Exciting Science’ is the most essential prerequisite but in itself not enough**
 - ✓ Vision on housing of the equipment (inquire Infrastructure Dept. beforehand)
 - ✓ Clear vision on the Usage Plan and handling of Measurement Cost
 - ✓ Commercially available vs. (partly) to construct
 - ✓ New vs. Upgrade?
 - ✓ Dedicated technical support available or required to kickstart?
 - ✓ Accessibility: applicants vs. others
 - ✓ Accountability: measurement/use log + monitoring of correct publication acknowledgement

Make sure ‘the other stuff’ does not read as ‘good intentions’ but appears already well considered

Medium and Large Scale Infrastructure Funding: Things to Keep in Mind

- **Get your budget right**
 - ✓ Don't inflate your budget – accountability of expense is quite strict
 - ✓ Negotiate a sizeable reduction beforehand – less is more
 - ✓ But keep enough 'reserve' to account for price increases (1 year between offer and order)
 - ✓ Make use of VAT recuperation if available
 - ✓ Personnel?
 - ✓ Start-up costs?
 - ✓ Service contracts?

Medium vs. Large Scale Infrastructure Funding: A Different Dynamics

Medium-Scale < 1M€

- Evaluation by the Research Council(s)
- One round application
- External Peer Review?
- All aspects evaluated by the same local panel
- No interview (some internal consultations possible)
- More likely to be downsized (cheese grate)
- Interuniversity character a bonus (90%)

Large Scale ≥1M€

- Evaluation by international panel (Science Panel)
- Two round application
- External Peer Review!
 - Referee reports from experts in your field
 - Evaluation of application, referee reports and rebuttal by experts managing LSF's
- Separate Invest Panel
- 2nd round interview by panel
- What you ask is what you get
- Interuniversity character almost a must (70 vs 90%!)

Medium and Large Scale Infrastructure Funding: Have You Started Yet?

- **Start Early! (You are almost too late already)**

- ✓ Partner search takes time
- ✓ Operational agreement with partners takes time
- ✓ Interuniversity application: securing financial commitment takes time
- ✓ Industrial commitments can be slow to materialize (contract negotiations/IP handling etc.)
- ✓ Vendor(s) interaction takes time



- **Timely interaction with FWO/Local Research Council Staff**



Large-Scale Facility - The Interview

- **Attentive and Friendly Panel Disposition**
- **Know your panel members**
 - ✓ Most likely no real specialist in your field of expertise
 - ✓ Experienced in Large Scale Facility Operation and Management
- **Presentation:**
 - ✓ Representative presence and participation
 - ✓ Showcase the general background for the non-specialist scientist
 - ✓ Make the new research tangible
 - ✓ Investment proposal and timeline – Time allocation – Beyond Project Use
 - ✓ **Keep in time!**

Medium and Heavy Infrastructure Grant Applications

- Experiences -

José C. Martins

Department of Organic & Macromolecular Chemistry
NMR and Structure Analysis Unit
NMR Centre of Expertise
Jose.Martins@UGent.be

Digital research infrastructure for religion, culture and society

The logo for 'odis' is displayed in a dark red, serif font. The letter 'i' is lowercase and features a red dot above it, which is slightly offset to the right. The letters 'o', 'd', and 's' are lowercase and follow a similar serif style. The entire logo is centered within a white rectangular box.

FWO-Infosession on Medium-scale and Large-scale research infrastructure, Brussels, 21 March 2023

Peter Heyrman

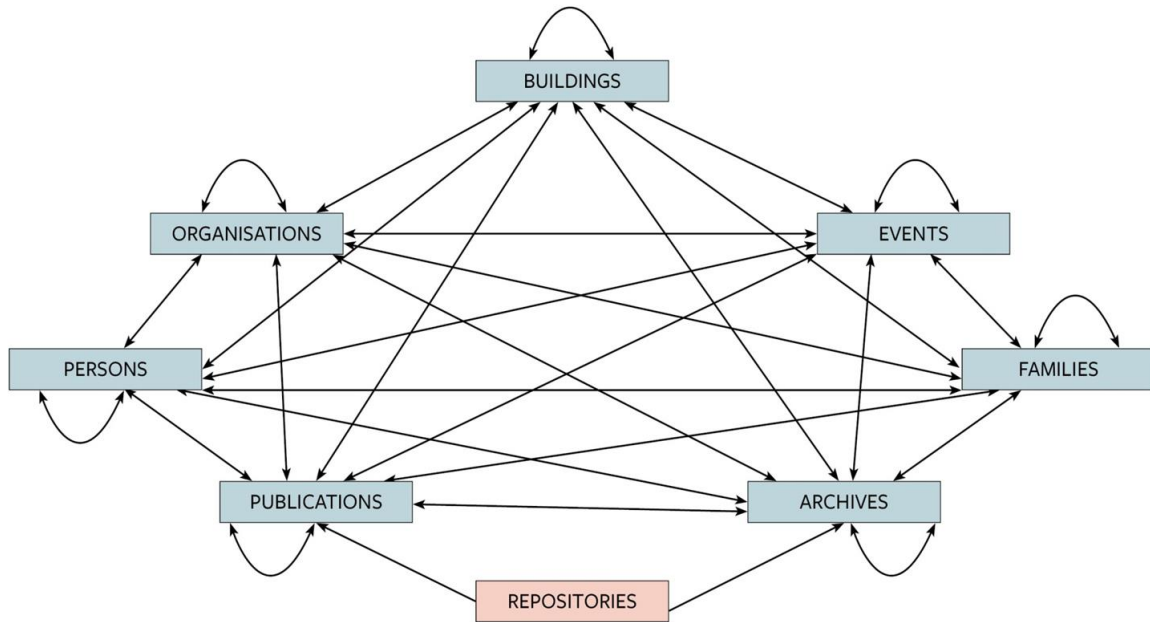
KADOC-KU Leuven

- Interfaculty documentation and research centre, cultural and societal impact of religion and its diverse material and immaterial manifestations (1750-), from a broad, interreligious and transnational perspective
- recognized Flemish cultural heritage organisation with a vast collection of documentary heritage

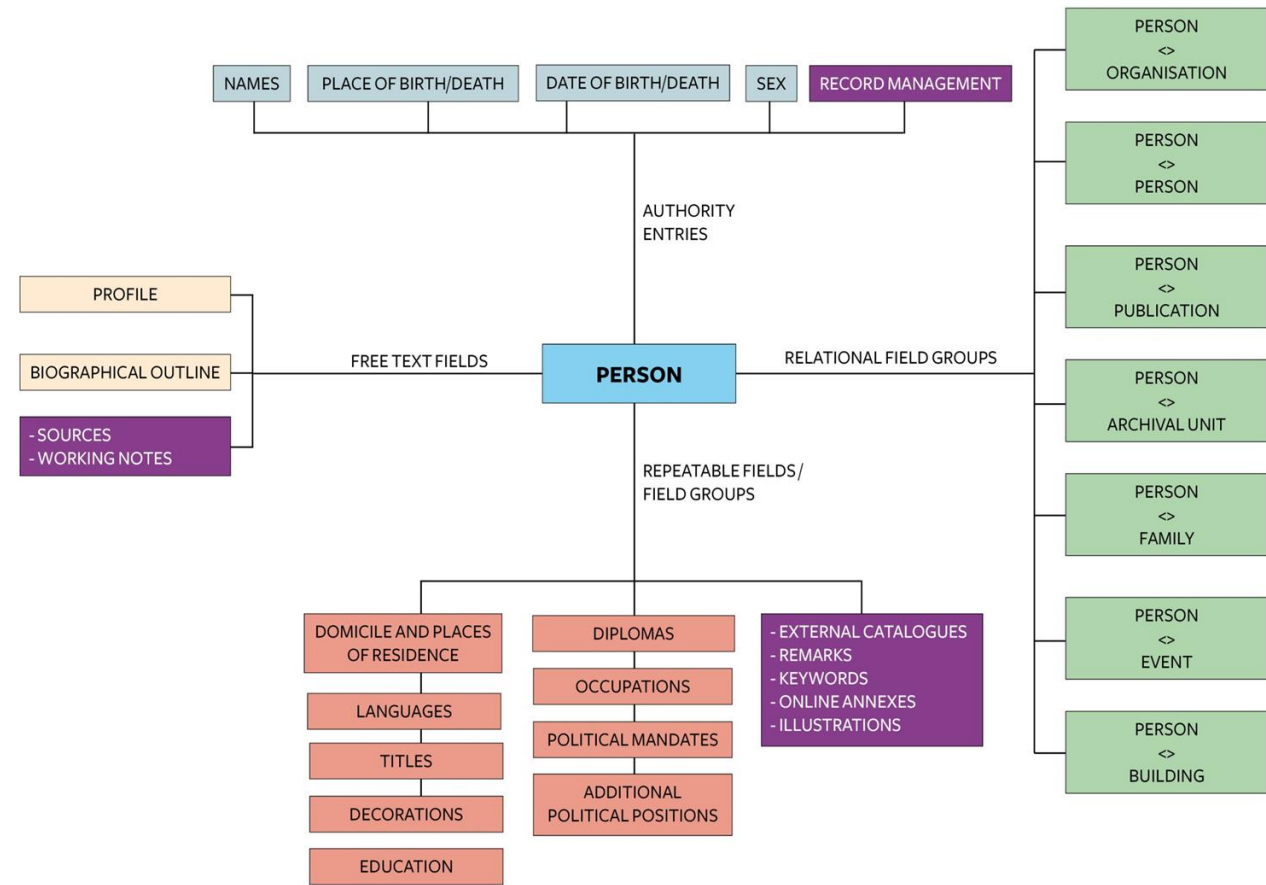


ODIS

- relational web-database / online data-pool (www.odis.be / www.odis.eu)
 - history and heritage of multifold **civil society**; jan. 2023: 295.000 records
 - **data discovery and knowledge integration**, bridging worlds of research and heritage (care)
 - **validated** information; source materials ; older research data and digitized repertories
 - **open partnership** : research units, cultural heritage institutions, experts of KU Leuven and other Flemish universities, 15 structural partners and many different research initiatives/projects supported.
 - **Community**: growing public & volunteer involvement and active dialogue with users. Test-practice of **citizen science in humanities research**.
 - hosted by ICTS-KU Leuven ; technical support by Libis



interconnected data-series on organisations, persons, their heritage, buildings,...



well-structured data following international standards: ISAD-G, ISAAR(CPF), Docomomo....

Timeline

- 2000-2003 : design and construction of ODIS thanks to grant of FWO Max Wildiersfund (G.4423.00N)
- 2006 : vzw ODIS created.
- 2009-2011 : renewal of the system and its vocabularies; new modules and interfaces, also in English, thanks to a grant of the Hercules Foundation (AKUL043)
- May 2021 : core research facility KU Leuven
- September 2021: new application for FWO funding, granted on 31 March 2022 (I011122N; 3H220231).
 - Supervisor: Kim Christiaens (KADOC)
 - Co-supervisors: Jo Rademakers (Libis) & Peter Heyrman (KADOC)
 - Team: Joris Colla, Winand Van Meerbeek, Bert Aernouts; Mehmet Celik; Stephan Pauls; Michiel De Clerck; Luc Schokkaert; Ganesh Venkatasubban,

Program

- data processing, analysis and visualization layer, commonly referred to as '**big data layer**' Including Instruments and features for data-visualization, graphically and spatially exploring, querying and analyzing datasets,
- constructing a state-of-the-art **interoperability and discovery layer** fostering better connections to other research instruments, platforms and Linked Open Data resources.
- building a so-called **statistical datawarehouse**, a platform for preserving and contextually disclosing old statistics and other numerical datasets
- overall upgrade of the **database's technical environment**: from Oracle to Virtuoso Triple store
- Support burgeoning **research lines** on **religion-culture-society**
 - spatial and territorial impressions of civil society
 - religiously inspired associational life and sociability networks
 - prosopography of religious institutes
 - religious history from below
 - transmission of ideas within learned networks...

Experiences & takeaways

- Preparing a RI proposal takes **time and effort**
- Conducting a **thorough needs analysis** and designing a **coherent technical programme** requires a broad and time-consuming consultation, a long 'incubation' period;
- Provide a transparent plan and prove its **feasibility and relevance**;
- Consider and argue the **management and sustainability** of the infrastructure in the mid- and long-term, linked to the usage plan.
- Don't hesitate to **flip the perspective**: instead of focusing all too exclusively on specific (envisaged) research lines and projects, evaluate the versatility and flexibility of the infrastructure and consider its broader research-supportive functions. Not merely what will, but also what can we do with the RI, how can it support/**strengthen already existing instruments**?
- Consequently, design the project in close consultation with many **different (possible) stakeholders** and possible partners.
- Call in the **assistance** of specialists, e.g. feedback of DOC KU Leuven and an experienced technical partner.

Contact

Dr. Peter Heyrman

Head of Research

KADOC-KU Leuven

peter.heyрман@kuleuven.be

info@odis.be