

Joint (internal) Researcher meeting by
SIM² KU Leuven & Materials Research Centre Leuven

Pushing the boundaries of advanced materials characterisation

Heverlee - June 3, 2022 (12-18h)

Credits image: Fernando Prado Araujo



PROGRAMME

12-13.15h Lunch & poster Session

13.15-13.45h Introductions by **Dr. Marion Bechtold (MRC)** & **Dr. Peter Tom Jones (SIM²)**

13.45-15h Guest Lecture **Dr. Gilles Mertens (Qmineral)** (*XRD, the most important mineral characterisation tool*)

KU Leuven contributions by **Dr. Annelies Malfliet (EPMA-WDS)**, **Fernando Prado Araujo** (*Shine on you crazy materials: Raman microscopy for advanced characterisation*)

15-15.30h Coffee & Poster session

15.30-17h KU Leuven contributions by **Prof. Erik Smolders (LA-ICP-MS)**, **Prof. David Seveno** (*Liquids and gases as probes to characterise surface properties*), **Prof. Claudia Fleischmann** (*Atom probe tomography: materials characterisation at the nanometer-scale*), **Prof. André Vantomme** (*Ion beam analysis: a family of versatile techniques for materials characterisation*)

17-18h Closing reception & poster Session

What is MRC?

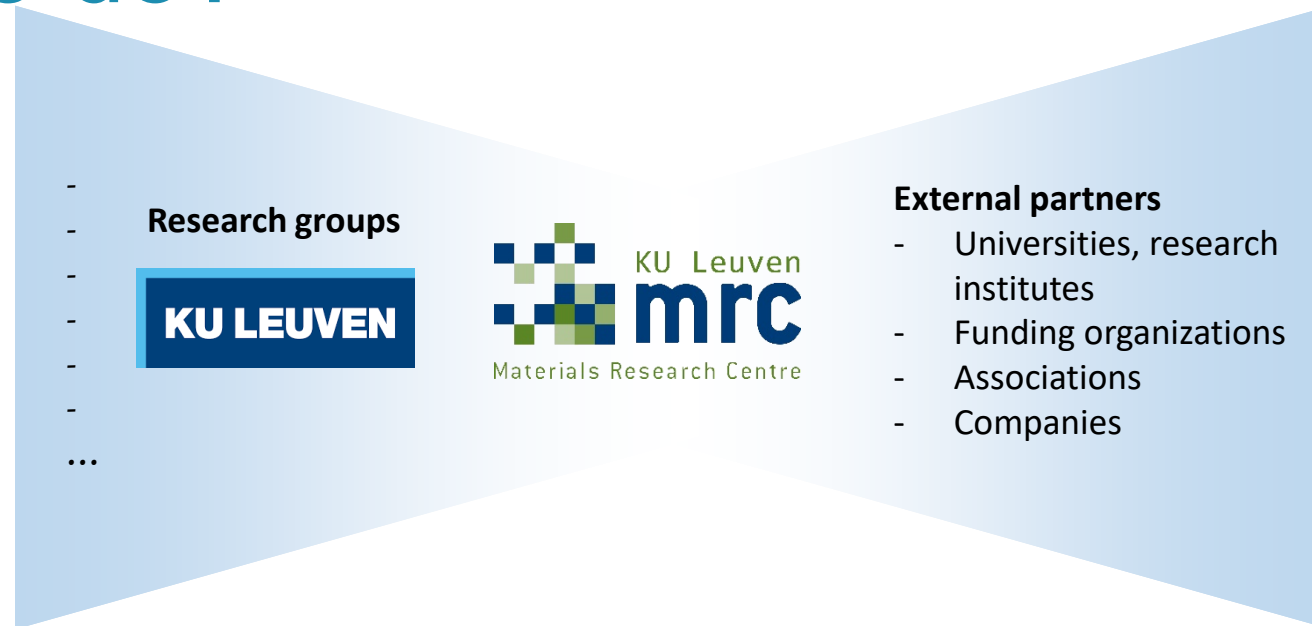
MRC

- is a platform to cluster and initiate materials research activities with a challenge-driven, innovation-oriented or blue-sky perspective.
- provides a coordinative link between the member research groups and our external partners and stakeholders and strengthens their interactions



**KU Leuven's interdisciplinary platform
to develop innovative materials
solutions for a sustainable future**

What do we do?

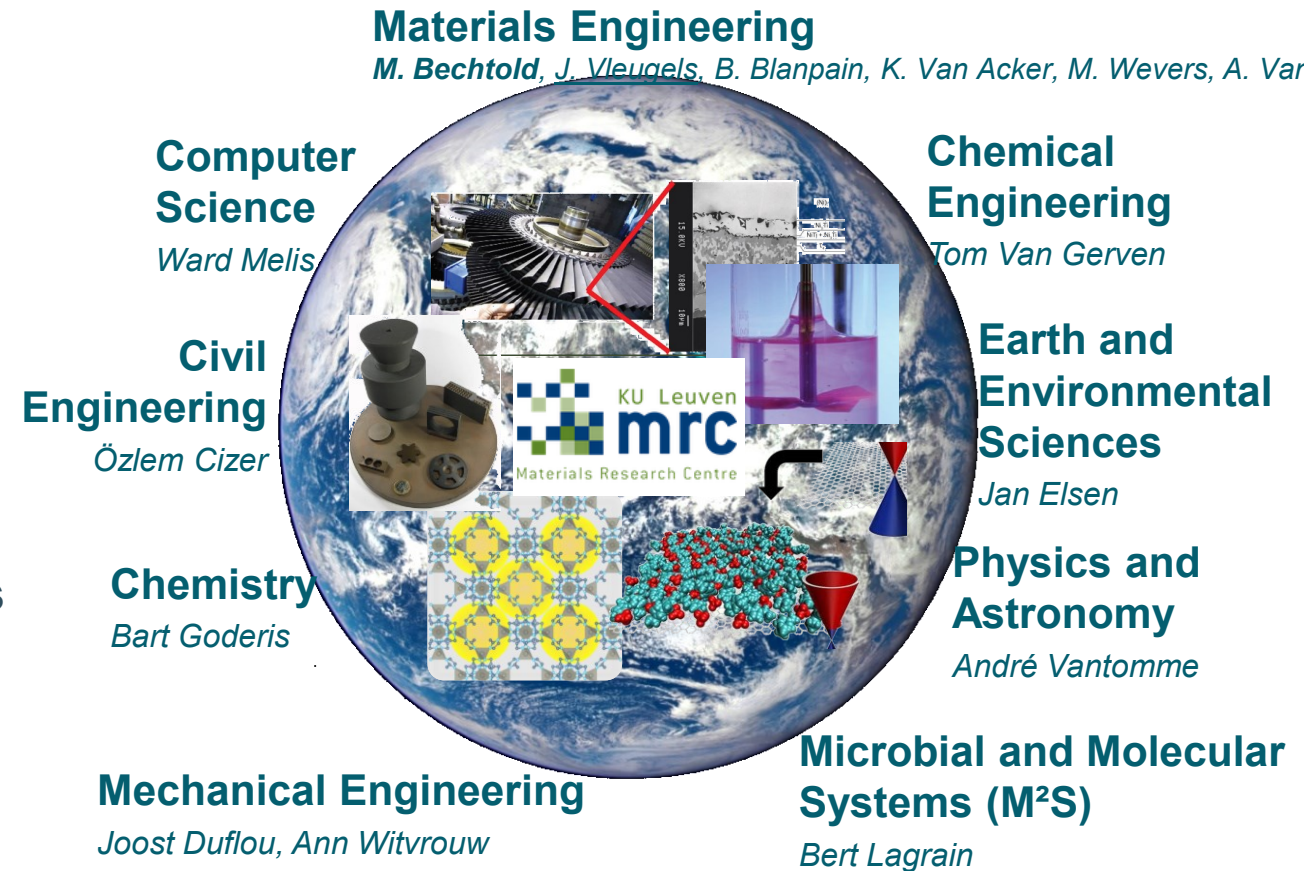


- Workshops and networking events
- Personalized information on funding opportunities
- Personalized information on partner requests
- Increase visibility: homepage, newsletter, events
- Facilitation of industrial collaborations: *access point*
- Representation at external organizations (SIM, EIT RM)
- Annual research meeting (internal / external)
- Facilitation of interdisciplinary research projects (internal / external)
 - initiation of **research lines**

Who are we?

MRC brings together

- 5 faculties
 - 9 departments
 - 36 research groups
 - 80+ professors
- to facilitate interdisciplinary **collaborations**
- to initiate **projects** with external partners
- to enhance the **impact** of their research.

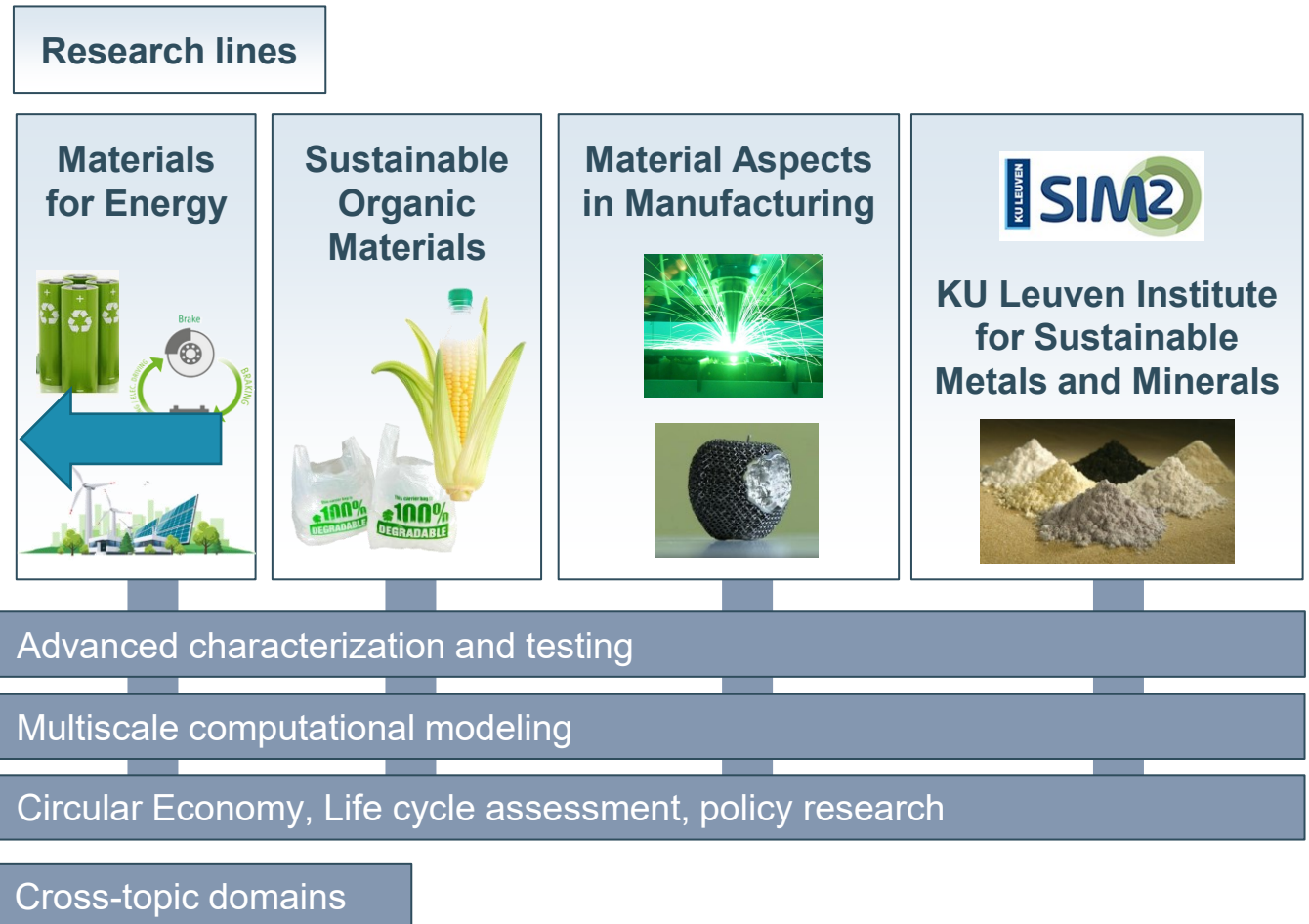


Steering committee members
Chair
Coordinator

Current research lines in MRC

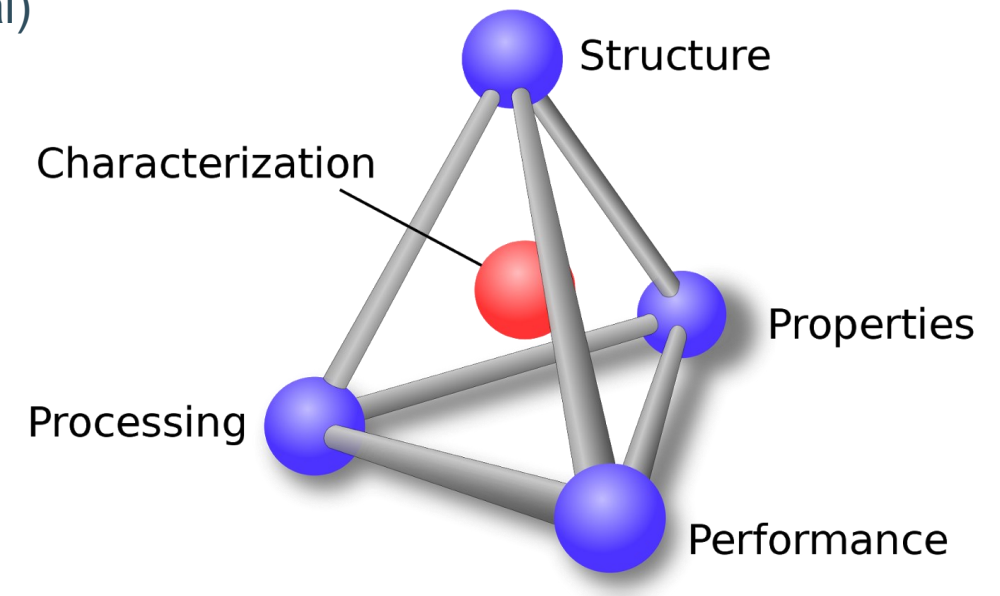
A research line

- Is a **topic of broad interest** and **impact** from a fundamental, industrial or societal point of view
- Acts as a **cluster to set up interdisciplinary research projects** having the potential of excellent results and breakthrough technologies
- A research line is **promoted** through the MRC coordinator at external platforms, funds and companies
- **facilitate** interdisciplinary research within KU Leuven and with external partner
- is **dynamic** in terms of matter and staff



Materials Characterization...

- Unites researchers
- Lies in the core of materials development
- Is an excellent case for MRC
 - Easy entrance door for collaborations (internal / external)
 - Find most appropriate tools next door
 - Increase visibility of KU Leuven's materials researchers
 - Find and be found → Database under development (see next slide)



Characterization...

- Creation of a database (ongoing)
- Search by department or category
- Further refinement needed



*Nguyen Hong Hai (Henry)
MSc student Nanosciences*

Equipment Search

Coulomat 702 SO/CS

This coulometric method is not limited in its range and can be used to analyse both small ppm values and very high carbon contents in the percent range.

[Read more](#)

ICP-OES Varian 720 ES

Inductively Coupled Plasma Optical Emission Spectroscopy is a quantitative gas analysis instrument, also for non-polar molecules, inert gasses, etc..., up to atmospheric pressure. On-line calculation of concentrations.

[Read more](#)

Prima Additive Print Genius 150

Additive manufacturing machine

[Read more](#)

3DSystems ProX320 DMP

Additive manufacturing machine

[Read more](#)

Tensile tester ZWICK Z050/TH3A 50 kN with thermostat chamber

This tensile tester can perform tensile and compressive tests up to 50 kN (= ca. 5 ton) under a temperature range of -80°C to 240°C. Standards for tensile testing on plastics and 3 point or 4 point bending tests, creep testing and compressive testing are available.

[Read more](#)

DASGIP bioreactor setup

The Eppendorf parallel bioreactor setup with DASGIP technology consists of four vessels that can run individually but can be controlled simultaneously. Temperature, stirring, aeration and pH can be controlled very accurately during experiments.

[Read more](#)

In-situ UPV setups, automated viscomat, calorimeters

Approximating Functions with Frames

Search for equipment

Search

Equipment by department

Earth and Environmental Sciences

Chemistry

Materials Engineering

Mechanical Engineering

Chemical Engineering

Civil Engineering

Computer Science

Physics and Astronomy

Microbial and Molecular Systems

[More... >](#)

Equipment by category

X-ray techniques

Chromatography

Membrane techniques

Rheometry

Reactor

Mechanical characterization

Thermal analysis

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