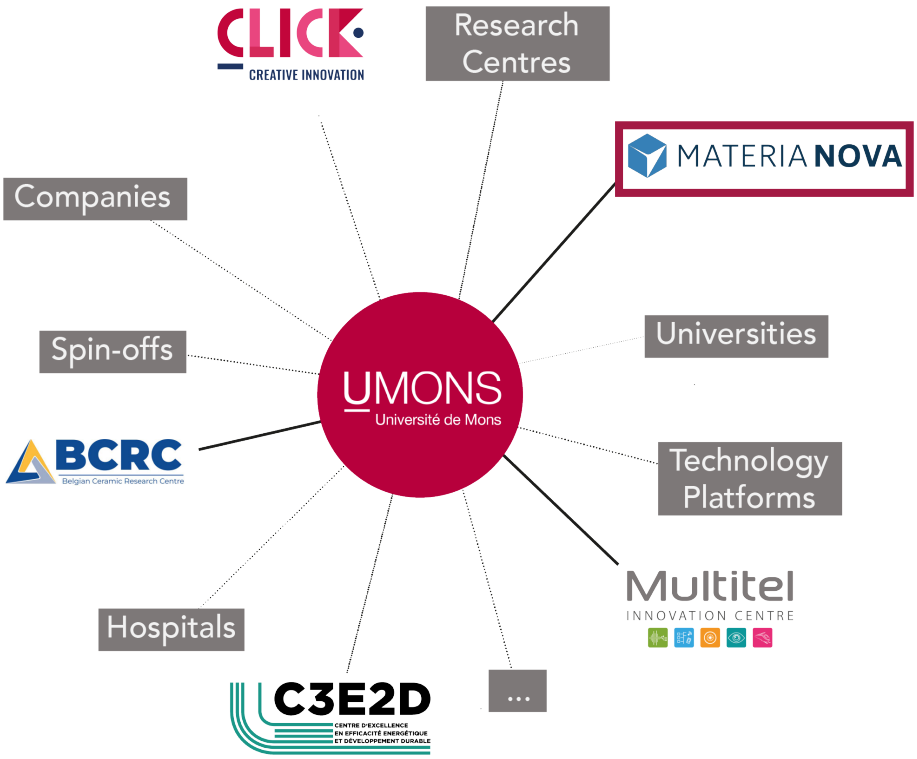
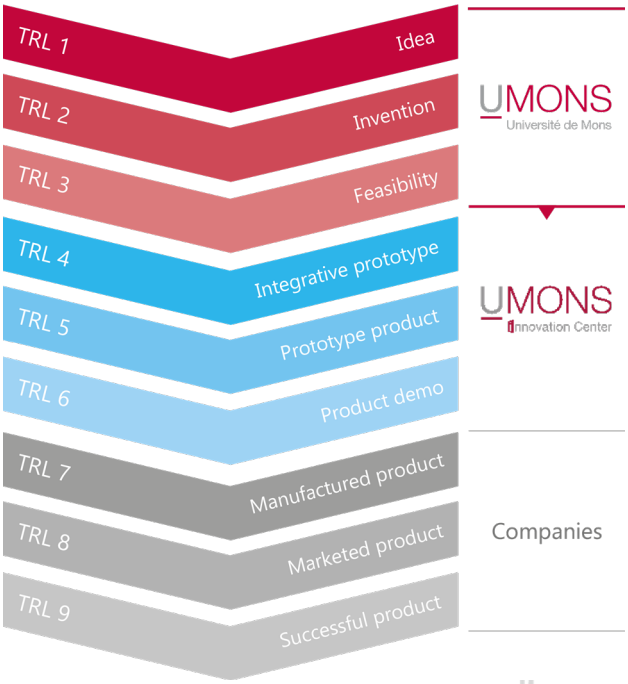
UMONS
innovation Center

## UMICS, UMONS Innovation Centers




## Where do the UMICs stand on the TRL scale ?




UMONS and its Innovation Centers form a unique structure.
These associations allow us to work with any socio-economic organisation regardless of the TRL of the results.

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# MATERIA NOVA Materials R&D Center

Materia Nova is a research and development centre for materials and processes. Created by UMONS in 2000, the two institutions work very closely together, combining their technological expertise to provide innovative solutions to the challenges our society is facing, particularly those related to the energy transition incorporating all aspects of the circular economy.

## What is Materia Nova ?

A multidisciplinary team of experts, specialized in advanced materials, multifunctional surfaces, and processes with a reduced environmental footprint. Materia Nova has a wide range of state-of-the-art equipment, supported by an open and collaborative innovation strategy at both national and international level. Its innovative projects are developed for and with industry, drawing on a solid network of industrial partners, spin-offs and start-ups. Decarbonization, circularity, waste reduction, reduced toxicity, health protection, improved performance and longer life expectancy are all themes that Materia Nova gives priority to in order to generate positive impacts at local, regional and international level.

### SHAPING THE FUTURE OF HEALTHCARE AND DIAGNOSTICS THROUGH INNOVATIONS

Materia Nova is at the forefront of R&D driving projects with direct social impact. The center expertise includes the development of **tailored biomaterials** (polymers and metals) with specialized properties and advanced surface modifications using **chemical methods, plasma treatments, and coatings** are developed. Materia Nova specializes also in **biosensors** and **cutting-edge technologies** playing a key role in **healthcare diagnostics** and **medical device prototyping** using biocompatible materials such as thermoplastics, hydrogels, and micro- and nanostructures (fibers and capsules).

## Different services

- Analysis and Characterization
- Life Cycle Thinking
- Project Development and Management
- Tailor-Made products development
- Engineering and industrialization

## And materials

- Hybrid coatings (sol-gels)
- Paints, varnishes and inks
- Metallic, alloys and ceramic coatings
- (Bio) polymers and (nano) composites

### SELECTED PROJECTS ACTIVITIES

- Smart wound dressings for diabetic wound treatment.
- Plasma grafted coatings for improved implant vascularization.
- Electronic nose for early lung cancer detection via patient breath.
- 3D bioresorbable implants for breast reconstruction.
- Bioresorbable threads and meshes for genital prolapse treatment.
- Plasma-treated biomaterials for enhanced osteointegration.
- Biosourced antimicrobial surgical masks.
- Anti-virucidal and CO2-capturing building ventilation filters.
- Medical waste and polymer recycled materials.

### SELECTED INUSTRIAL COLLABORATIONS

- Saliva-based tests for malaria detection
- Biomimetic nipples for infants
- Development of acoustic lenses

Interreg France-Wallonie-Vlaanderen · Wallonie recherche SPW · GREEN WIN Cleantech Innovation Booster


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