ABOUT **MATERIA NOVA**

Materia Nova is recognized as a technological accelerator of sustainable innovations in the field of new materials and processes.

The R&D center offers five different services:

- **Materials and Processes conception and innovation**
- **Equipment Design and Process Upscaling**
- **Analysis and Characterization**
- **Life Cycle Thinking**
- **Project Development and Management**

The approach of Materia Nova is based on an open and collaborative innovation.

From the understanding of the problems and requirements of our customers, we jointly select the best scientific and technical solutions which are then tested on a pilot-scale before industrialization. The development and the service provided are always unique and customized and give effective solutions as well as a major competitive advantage to our customers.

OUR **TECHNOLOGIES** AND **SOLUTIONS**

Our expertise in **surface coatings and treatments**, in **polymers and composites** and in **biotechnology** is fertile ground for:

- **developing new functional performances of materials,**
- **taking up the energy and environmental challenges of our society,**
- **protecting and promoting the health sector.**

OUR **STRENGTHS**

- A multidisciplinary team of experts
- A wide range of cutting-edge equipment
- An open and collaborative innovation strategy at national and international level
- Innovative projects for and with industrial companies
- Collaborations with R&D centers and universities worldwide
- A strong network of companies, spin offs and start-ups (B-SENS, ESIX, IONICS and NANO4)

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UMONS Innovation Center

MATERIA NOVA Materials R&D Center

SUSTAINABLE ENERGY

MATERIA NOVA, THE TECHNOLOGY ACCELERATOR OF THE ENERGY TRANSITION

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SUSTAINABLE ENERGY

Life Cycle Thinking

Innovative Materials

Tailored & Agile Processes

Demonstrators

Our innovative know-how facilitates the Energy Transition

Advanced materials, organic electronics, plasma treatment, biotechnology and multifunctional coatings, substrates and nanocomposites.

Energy Control & Efficiency

Health, demographic change and wellbeing

– **Passive & Active coatings**: heating/cooling, opto-thermal management superblack, EMI shielding...

– **Sensors**: water/air pollutants and biological species detection, optical and conductimetric sensors; Multipoint sensitive detection along the H_2 supply chain.

Energy Transport & Storage

Smart, green and integrated transport

– New Solid-State components of future batteries [Li and non-Li)

– New H_2 tanks technologies

ENERGY TRANSITION

Energy Harvesting & Conversion

Climate action, environment, resource efficiency and raw materials

– Organic & hybrid semiconductors for Smart Energy devices

– Solid-State Lighting devices (OLED, Light guiding)

– Solar cells (CIGS, CZTS, OPV, DSSC and Perovskite)

– Proton Exchange Membrane Fuel Cells

– High temperature Selective Solar Thermal Absorbers

– Thermoelectric devices

Clean Energy production

Secure, clean and efficient energy

– Clean Chemicals & Fuels (Biogas, CH_4, H_2)

– Waste and pollutants reforming technologies