

Bioenergies, Biobased molecules et Biobased materials from Renewable CARbone

3BCAR Carnot Institute mobilizes two key levers for Bioeconomy emergence: Biotechnologies and Green chemistry; gathering multidisciplinary approaches from biomass production, biorefinery until functional properties.

Circular economy is considered by waste and byproducts valorization, cascading uses and eco-design.



Innovate and support Bioeconomy emergence with Biotechnologies and Green chemistry

Bioeconomy: a model for the future

Faced with diverse actual challenges (sustainable development, fossil resources depletion, climate change...), Bioeconomy is recognised in Europe as a model for the future. Based on production from biological renewable resources conversion, this economical strategy benefits from both technological and systemic approaches.

3BCAR: a multidisciplinary skills offer

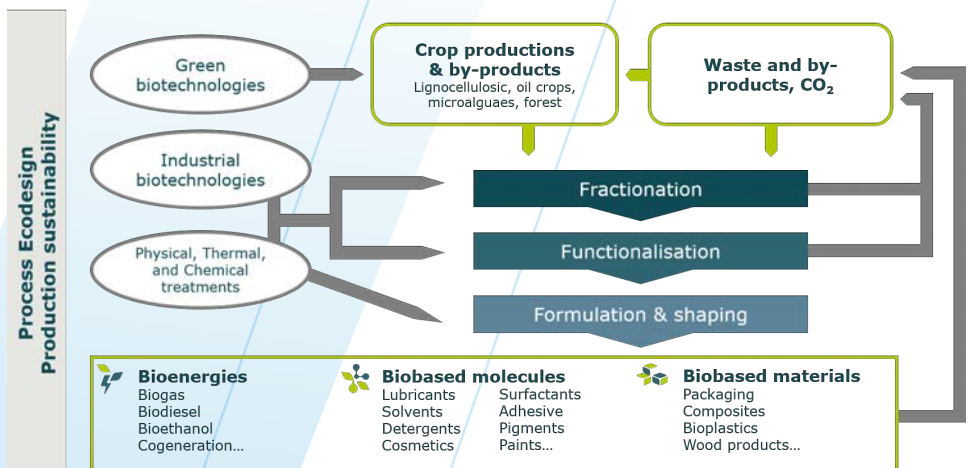
- Plant biomass production with enhanced properties
- Biomass fractionation and biorefinery
- Functionalisation for obtaining building blocks
- Bioproducts formulation and shaping
- Process ecodesign and Production sustainability



Target markets

- Biomass production (crops, microalgae) and plant biotechnologies
- Biorefinery
- Industrial biotechnologies
- Green chemistry: lubricants, surfactants, solvents
- Fine chemistry: cosmetic and biologically active molecules
- Bioenergies: biofuel, biogas
- Biobased materials
- Ferments and enzymes
- Environment and waste valorization
- Agro-industry
- Territories management

From biomass... to functional properties





Plants on high-throughput phenotyping system - © INRA/Nicolas Bertrand

Microorganisms culture in bioreactor - © INRA/Maitre Christophe

Analysis of materials' mechanical properties © INRA/Slagmulder Christian

Threedimensional structure of a phytoalexine - © INRA/Ponchet Michel

Fermentation platform © INRA/Cattiau Gilles

Experimental cultivation of Miscanthus © INRA/Paillard Gérard

Oleo-chemistry hall © ITERG

A scientific network of excellence available to boost your innovation

Our engagements to facilitate partnership

- One stop shop



Listening to your needs in order to orientate you towards competencies of more than 500 scientists

- Contractualisation quality



Professionalism, tools and procedures for steering contractual relationship. Action certified ISO9001

- Defined IP policy



Good practices for intellectual property and technology transfer, to ensure results traceability and protection

A french structured R&D network, from laboratory to pilote scale

→ Skills and technological capacities to support partners climbing on TRL scale, from upstream research in laboratory until pilote scale (TRL 6).

→ 12 research laboratories
 4 centers for technological resources (CRT Bio, CATAR, GPTE, ITE)
 1 preindustrial demonstrator (TWB)
 1 industrial technical center (ITERG)

Research staff (full-time equivalent): 1 082 including PhD students: 305

Partnership incomes with industry: 26,7 M€

Global budget: 81,2 M€

CONTACTS

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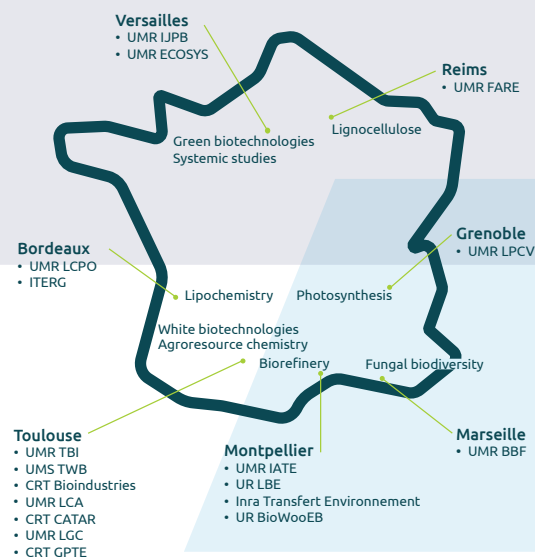
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