



**Regione
Lombardia**

Cluster Tecnologici Lombardi

The Lombardy Green Chemistry Association

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@Cluster_LGCA

Shaping the bio-based bioeconomy as one of the most powerful tools for sustainable development



Funded in 2013 and recognised in 2015 by the Lombardy Region as the regional Cluster of Bioeconomy and Green Chemistry



Since 2016 technical coordinator of the Bioeconomy Pilot of the **Vanguard Initiative**

50+ members

4 value chains

50+



- 27 SMEs
- 7 Big industries
- 6 NGOs
- 6 Universities
- 6 Research Institutes



- AGROFOOD
- GREEN CHEMISTRY
- FOOD/PHARMA
- WOOD



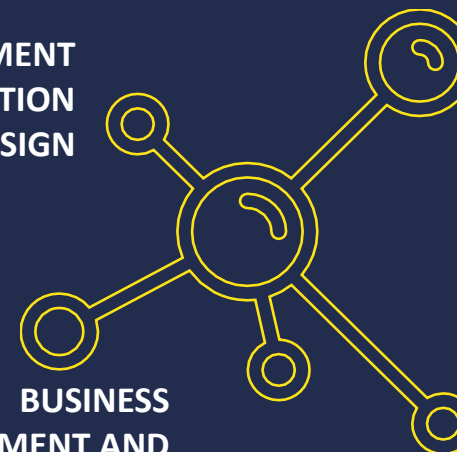
- European, national and regional funded projects on bioeconomy, circular economy fields.
- 65% beyond TRL 6 with validation of pilot plan at industrial level

POLICIES DEVELOPMENT
AND GOVERNANCE ACTION
PLAN DESIGN

BUSINESS
DEVELOPMENT AND
MARKET UPTAKE

KNOWLEDGE TRANSFER
AND NEW BUSINESS
OPPORTUNITIES
CREATION

NETWORKING &
CONSORTIA BUILDING



Cluster's activities areas

CIRCULAR BIOECONOMY & BIOECONOMY MANAGEMENT

Promote the bio-based products market uptake, the implement policies tools, education and training



BIOREFINERY & ADVANCED BIOFUELS

Creating biorefineries for the integrated production of value-added products from no food crops and waste biomass

GREEN CHEMISTRY

Products and processes for replacing and / or reducing the use of rare, toxic and polluting substances and reducing energy consumption



NEW BIO-BASED PRODUCTS

Applications of synthetic and systemic biology for the bioeconomy

Artificial intelligence for a safer and sustainable chemistry

UNIVERLAB

Analisi e Ricerche



CHLOE -Collaboration at Highest Level Of Efficiency- the collaborative robot that will lead us to a 4.0 industry.



1. measure different parameters to **identify the situations of danger** during the normal analytical workflow
2. increase business productivity **reducing the standard cost** associated with the analysis
3. create a **secure system** in which the COBOT operates closer to the laboratory operator in a shared work environment
4. detect **dangerous chemical dispersions** with a VOC sensor preventing the operator exposition and increase safety

The use of a COBOT system in laboratory chemical analysis allows overcoming some safety problems