



Horizon Europe Brokerage Event
Cluster 6 Calls 2025

Warsaw , 27 May 2025

Catalytic Reaction Engineering for Sustainable Technologies (CREST) Group - 1

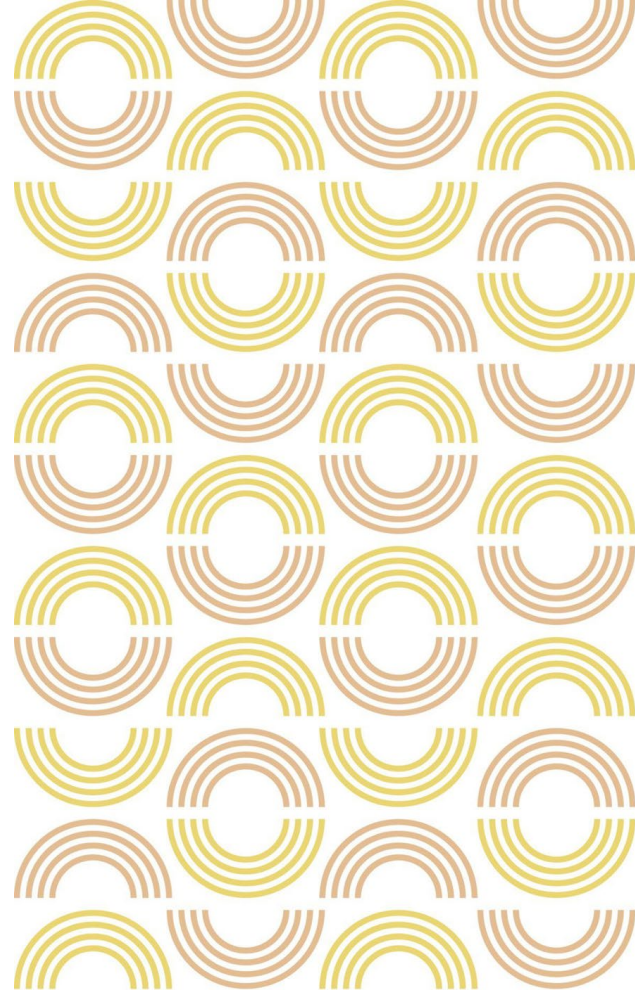
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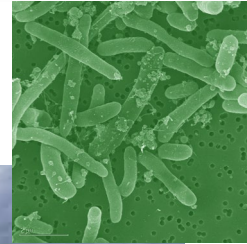
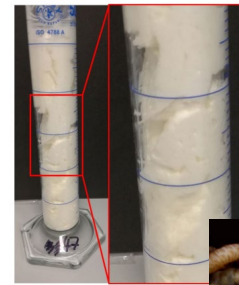


Topic(s) addressed :

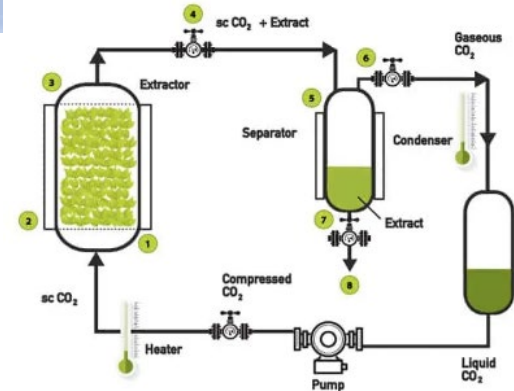
- **HORIZON -CL6-2025-02-FARM2FORK -07:** Fostering animal breeding and genetics for climate change adaptation and mitigation, improved robustness and resilience
- **HORIZON -CL6-2025-02-FARM2FORK -08:** Exploring the potential of controlled environment agriculture (CEA)
- **HORIZON -CL6-2025-02-FARM2FORK -14: Nutrients** produced by microbes utilising primarily CO₂ from the air, with the support of biotechnology
- **HORIZON -CL6-2025-02-FARM2FORK -02-two -stage :** Open topic: Innovating for on-farm post-harvest operations, storage and transformation of crops into food and non-food products
- **HORIZON -CL6-2025-02-FARM2FORK -03-two -stage :** Making food systems more resilient to food safety risks through the deployment of technological solutions

Project ideas

- Extraction and refining of oil & fats from different crops (including agri-food waste) – *process design & control (PAT tools, machine learning), enzymes*
- Evaluation of chemical and functional properties (+LCA) of *new sources of oil & fats* (e.g., insects, seaweed, microbes, new crops from CEA)
- Novel oil & fat processing techniques to develop new ingredients (*olegels & oleocolloids*) with improved sustainability and functionality



Happy to join an existing consortium and lead a WP related to oil & fats extraction, processing and product formulation



Main expertise offered

- Design of crystalline materials for multiphase formulations (food, pharma, agrochemical) – ERC StG Cryform (PI)
- Fat crystallization & novel sources of fats – CSP (PI), Nestlé
- Understanding multicomponent inorganic & organic crystallization processes – with Lavazza, Syngenta, FIS and Nestlé
- Waste valorization – PNRR Agritech
- Novel oleogels for food applications – ERC PoC NewOilFactory (PI)
- Crystal Engineering & complex material modelling – with CCDC

European Research Council
Established by the European Commission

ERC StG – CryForm (PI)

ERC PoC – NewOilFactory (PI)

Fondazione
Compagnia
di San Paolo

- Elena Simone, Professor of **Chemical Engineering**, elena.simone@polito.it
- Politecnico di Torino (public university), Italy

- Academic Expertise:
 - *Crystallization process design* ([complex media](#), organic & inorganic species, [fats and oils](#))
 - Design of *oil-based, crystalline materials with tailored functionality* ([Oleogelations, oleocolloidal structures](#) – [modeling](#), [formulation](#) & [advanced material characterization](#))
 - Extraction technologies for new lipid sources (CO₂ supercritical, insect oils, rice bran oil, coffee oil)
 - *Monitoring techniques and control strategies* (e.g., [model-free](#), [machine learning](#)) for continuous and batch multiphase processes ([Process Analytical Technology tools](#))

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