FAST industrialisation by CAtalyst Research and Development (FASTCARD)

Call FP7–NMP-2013-LARGE-7 - 2nd Stage Project Proposal submitted

For the FP –NMP-2013-LARGE-7 Call, the FASTCARD consortium has submitted a proposal to the EC for a large European collaborative project to accelerate the industrialization within Europe of processes for the conversion of biomass to biofuels. The focus of FASTCARD is on the development of nano-catalysts applied to the 4 key catalytic steps within the two major value chains from biomass to biofuels. FASTCARD brings together a strong European consortium of 14 partners comprising premier universities, R&D institutes, catalyst and materials producers, energy companies and innovative SMEs, to address the major scientific and technological challenges of the day.

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Europe today faces major energy challenges and the conversion of biomass into advanced fuels, can significantly contribute to the achievements of the 20-20-20 objectives, and the reduction in greenhouse gas emissions by 80-95%, as targeted in the European Energy Roadmap 2050

Catalysis plays a pivotal role in the conversion of renewable resources to fuel for transport.

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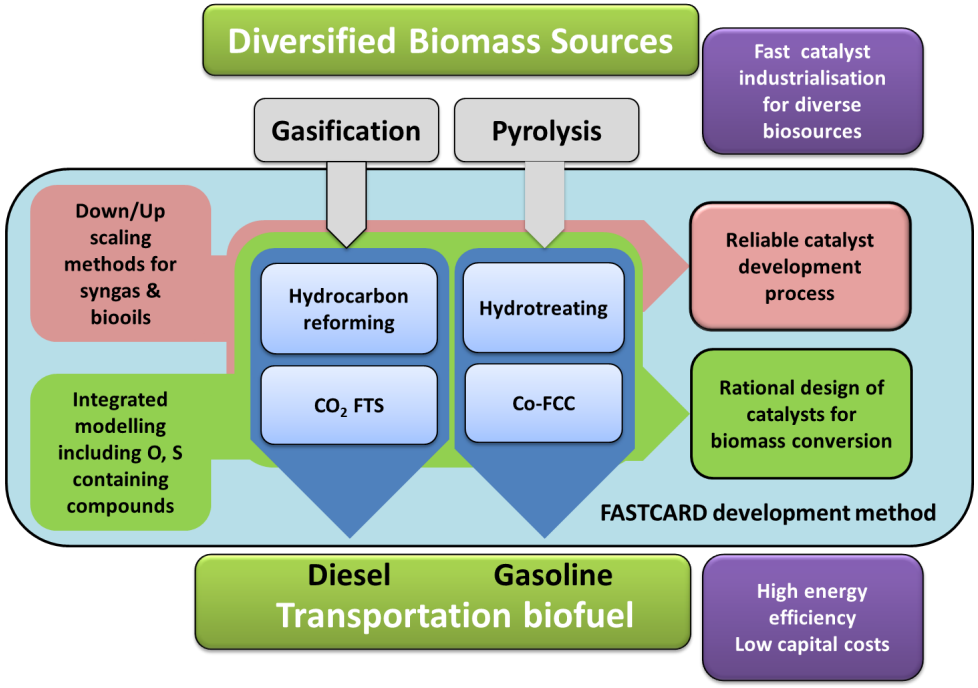
The objective of the FASTCARD project is to speed up the implementation of bio-based processes in Europe through innovations in nano-catalysts.



Main benefits for Europe

- Speed-up of industrialization of bio-based processes
- Replacement/reduction of strategic resources
- Lower energy consumption and optimum feedstock utilization.

→ Strengthen economical top-position of EU and secure a sustainable and long lasting energy supply.

Key features

- **Industrial relevance**: Industrial partners involved in benchmarking and validation at pilot level at all key stages of the project
- Development of **catalysts through "rational design"** from nano to large scales in order to address selectivity, energy efficiency and durability.
- **Balanced strategy** addressing challenges of key catalytic steps in bio-based processes:
  - Near term implementation in existing refining units via the Pyrolysis liquid value chain (Hydrotreating and co-Fluid Catalytic Cracking) to achieve the 20-20-20 objectives
  - Longer term implementation via the 100% green Gasification value chain (Hydrocarbon reforming and CO_2 tolerant Fischer Tropsch) according to Energy Roadmap 2050
- **Multidisciplinary approach**, bringing partners spanning key areas of: catalyst development, scale-up, advanced characterisation, atom scale and microkinetic modelling, reactor and process design