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.

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.

**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 CO₂ 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.

**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.