SusChem 2017 Brokerage Event

ARKEMA: Calls of interest
ARKEMA TODAY

€7.5 bn sales

19,700 employees worldwide

Worldwide presence in 50 countries

133 industrial sites

3 R&D and innovation geographical hubs
SIMPLIFIED PORTFOLIO WITH 9 BUSINESS LINES

2016 SALES
€7,535 m

- Coating Resins and Additives: 14%
- Acrylics: 10%
- Technical Polymers: 11%
- Performance Additives: 14%
- Specialty Adhesives (Bostik): 21%
- Hydrogen Peroxide: 4%
- Fluorogases: 8%
- Thiochemicals: 9%
- PMMA: 9%

HIGH PERFORMANCE MATERIALS: 46%
INDUSTRIAL SPECIALTIES: 30%
COATING SOLUTIONS: 24%

2017 CORPORATE PRESENTATION
• Modelling to speed up product development. Case study in following slides.

**DT-NMBP-10-2019: Adopting materials modelling to challenges in manufacturing processes (RIA)**

**DT-NMBP-09-2018: Accelerating the uptake of materials modelling software (IA)**

• Keep current assets in operation. Looking for technologies that can fit in existing plants.

**DT-FOF-06-2019: Refurbishment and re-manufacturing of large industrial equipment (IA)**

**CE-SPIRE-05-2019: Adaptation to variable feedstock through retrofitting (IA 50%)**

• Use renewable energy through new energy sources (Microwaves, ultrasounds…)

**CE-SPIRE-02-2018: Processing of material feedstock using non-conventional energy sources (IA)**

• Plastics recycling (interest for Arkema’s polymers). Looking for partners on the value chain.

**CE-SPIRE-10-2018: Efficient recycling processes for plastic containing materials (IA)**

**CE-NMBP-26-2018: Smart plastic materials with intrinsic recycling properties by design (RIA)**

• Catalytic processes. Arkema as end user.

**CE-NMBP-24-2018: Catalytic transformation of hydrocarbons (RIA)**

• Marie Curie calls (ITN, IF).
The project aims at developing combined tools to enhance the development of new products & applications in the adsorption area and to accelerate the decision making:

- pre-screening of materials with promising adsorption and molecular transport properties and
- selection of the optimal one on the basis of the process simulation results.

- By coupling recent molecular modelling tools with well-known process simulation softwares.
- The selected zeolites will be produced at the laboratory and their performances will be verified through pilot scale tests.

- Arkema’s contribution:
  - Arkema is a Zeolite producer (through our Business Unit CECA)
  - Arkema’s Modellization team

Relevant H2020 call: DT-NMBP-10-2019 – Adopting materials modelling to challenges in manufacturing processes (RIA) - End 2018

Or DT-NMBP-09-2018: Accelerating the uptake of materials modelling software (IA)
The data compiled from the molecular scale modelling is then integrated in a chemical process model concerning the industrial application (petrochemistry, refining, industrial gases).

- This **multiphysics** process model couples the distinct phenomena taking place in a real industrial unit:
  - Mass transfer.
  - Heat transfer.
  - Adsorption.
  - Hydrodynamic.

- The **multiscale** aspect of this approach grants the process model an extreme representativity.
  - The macroscale parameters provide a fine description of adsorption phenomena since they are derived from molecular modelling simulations.

- This approach provides a substantial time saving in zeolite structure research and development and is able to cover their behavior in all the concerned dimensions: from the molecule to the process application.
Contact details for project idea(s):

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