Horizon2020 Information Days on Public-Private Partnerships

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APPLICATION OF NANOFILTRATION AS A SMART TECHNOLOGY TO IMPROVE INDUSTRIAL WATER MANAGEMENT ACROSS RELEVANT MANUFACTURING SECTORS IN EUROPE (NANOWATER)

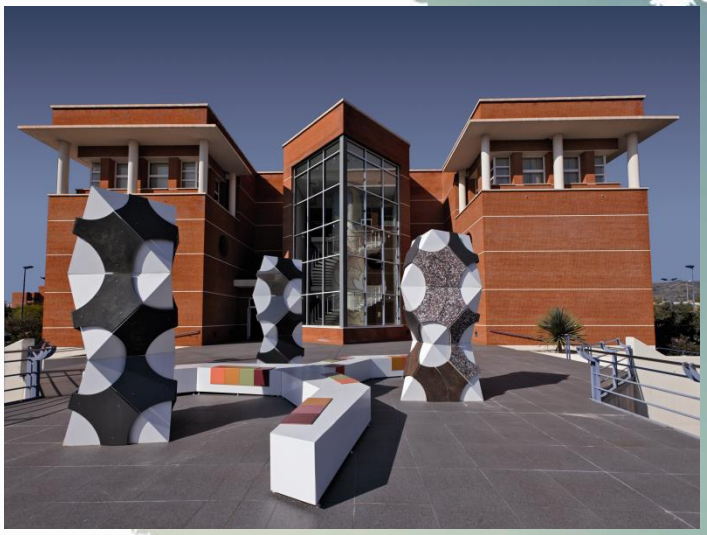
Emilie Bannier
Emilie.bannier@itc.uji.es

AICE jtc Universitat Jaume I
Instituto de Tecnología Cerámica

SPIRE
Sustainable Process Industry through Resource and Energy Efficiency

Instituto de Tecnología Cerámica – Asociación de Investigación de las industrías cerámicas (ITC-AICE)

The Technological Institute for Ceramic (ITC) is a research centre created by agreement between the Ceramic Industry Research Association (AICE) and University Jaume I (UJI) of Castellón (Spain).



ITC-AICE capabilities and research interests include notably:

- Smart manufacturing and process control
- Resource Efficiency, waste recovery and waste management
- Energy Efficiency and heat recovery
- Environmental technologies (water treatment, air quality, Life Cycle Assessment)
- Simulation of processes and materials
- Occupational safety and health
- Standardization

PROJECT IDEA

Title:

Application of nanofiltration as a smart technology to improve industrial water management across relevant manufacturing sectors in Europe (NANOWACER)

Project idea:

The main objective is to achieve maximum optimization in the water management in manufacturing industries by applying nanofiltration techniques using ceramic industry experience.

The project focuses to promote water treatment to increase the amount of purified wastewater in the production process, for a better conservation for an optimal usage lately, increasing the business efficiency.

Topic:

SPIRE-1-2016 "*Systematic approaches for resource-efficient water management systems in process industries*"

PROJECT IDEA

Relation with the SPIRE Roadmap:

THE RELEVANT KEY COMPONENT / KEY ACTION:

Key Component Feed

KA 1.1: Enhancing the availability and quality of existing resources

KA 1.2: Optimal valorisation of waste, residue streams and recycled end-of-life materials as feed

KA 1.3: Optimal and integrated (re) use of water

Key Component Waste2Resource

KA 4.1: Systems approach: understanding the value of waste streams

KA 4.2: Technologies for separation, extraction, sorting and harvesting of gaseous, liquids and solid waste streams

KA 4.3: Technologies for (pre)treatment of process and waste streams (gaseous, liquids, solids) for re-use andrecycling

EXPECTED IMPACT

1. NANOWACER aims are in line with different EC policies and initiatives, such as:
   - **Europe 2020 Flagship Initiative–A resource-efficient Europe**
   - **Europe 2020 Flagship Initiative – Innovation Union**
   - **Directive 76/464/EEC - Water pollution by discharges of certain dangerous substances**
   - **European Innovation Partnership on Water (EIP Water),**
     - ***Water reuse and recycling and Water and wastewater treatment***
     - ***Water-energy nexus***

2. Impact on the competitiveness of SMEs: Growth in sustainability due to improvements in waste water management
3. NANOWATER transfer of knowledge to other industrial sectors
4. Impact on new markets opportunities in waste-water treatment (NF membranes)
5. Impact on the employment growth in existing and new possible SMEs

EXPECTED IMPACT

All impacts have been considered in term of SPIRE-1-2016 objectives:

- Reduction of the water consumption in relevant manufacturing processes (>20%)
- Lower wastewater production (reduction of at least 30%)
- Minimisation of the Water footprint

  → *as a result of an increase in wastewater recycling and reuse*

- Lower energy consumption (reduction of at least 15%)

  → *due to the use materials and energy with less environmental impact, e.g. renewables or waste as inputs for production processes*

- New technologies development:

→*Introduction of new and cleaner technologies which improves existing processes in terms of material, resource and energy efficiency*

EXISTING PROJECT CONSORTIUM

COORDINATOR: ITC-AICE (Spain)

PARTNERS:

- RTOs from different sectors (textil, food, membranes, ceramic) and countries (France, Italy, Turkey, Spain)
- INDUSTRIAL PARTNERS
  - 1 Ceramic company (Spain)
  - 1 Frit company (Italy)
  - 1 Plastic company (Belgium)
  - 1 Membrane company (France)
  - 1 Food company (Turkey)
  - 1 Textil company (Spain)
- Other partners
  - 2 Public authorities (Spain and Italy)
  - 1 European Business association (Belgium)

LOOKING FOR PARTNERS

- NANOWATER consortium needs to include new partners, especially:
  - Other companies and/or RTOs from food, textil and plastic sectors
  - Companies and RTOs from manufacturing sectors intensive in water and willing to apply nanofiltration for wastewater treatment

- NANOWATER consortium can also join another consortium with complementary skills, such as:
  - Consortium wishing to implement nanofiltration as another possible wastewaster treatment method
  - Consortium wishing to implement a case-study in the ceramic industry

CONTACT DETAILS

ITC-AICE
Av. Vicente Sos Baynat s/n
12006 Castellón (SPAIN)
☎ (+34) 964-34-24-24

Emilie Bannier (European Project Office):
emilie.bannier@itc.uji.es

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