SPIRE and Catalysing the Circular Economy BROKERAGE EVENT

3-4 October 2017

PLASTMIX

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ORGANIZATION/COMPANY

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- **ICT**
  - Automation
  - Biomedicine

- **SYSTEMS**
  - Mechanical Design
  - Materials

- **MECHANICAL ENGINEERING**
  - Energy Efficiency
  - Renewable Energy
  - Smart Cities

- **ENERGY**
  - Environment
  - Chemical Processes
  - Agrofood Laboratories

- **AGROFOOD AND SUSTAINABLE PROCESSES**
  - Mobile Robotics
  - Technology Watch
• Innovative **process** for recycling EPS buildings waste for the effective recovery of EPS beads. EPS beads are the raw material necessary in the production of new EPS materials.
• Demonstration EPS recycling plant with capacity of 500 kg/day, unique throughout Europe
• Design of eco-innovative **products** made from recycled EPS, validating and demonstrating their quality and properties in an industrial sector.
• New **business models** and exploitation plan to improve economic viability of recycling process
PROJECT IDEA

- Other chemical recycling of plastic wastes
  - Flexible polyurethane foams (i.e. from car seats) → glycolysis to obtain polyol with high quality, polyol/PUR = 80%
  - Rigid polyurethane foams (footwear sector) → glycolysis to obtain polyol with high quality, polyol/PUR = 50%. 20% of recycled polyol can be used to manufacture again shoe soles with the same properties
  - PET waste (post-consumed, multilayered, strongly colored, etc.) → glycolysis to obtain BHET with a purity of 98% and yield of 80%
  - Film PE waste → fluidized bed pyrolysis to obtain gases, in particular methane and ethylene.
  - Carbon fibre composites from aeronautic sector → fluidized bed pyrolysis, 85% resin remove.
PROJECT IDEA

Key component/key action in Spire Roadmap

4. WASTE2RESOURCE
   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 and recycling

Horizon 2020 call topic addressed

CE-SPIRE-10-2018: Efficient recycling processes for plastic containing materials (IA)
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<td>3 TECHNOLOGY PROVIDERS</td>
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