Workshop Programme

4th October, 2018 - Avilès, Spain

Sustainable Process and Optimized Technologies for Efficient Water Usage in the Steel, Dairy & Paper Industry

8:30 Registration and welcome coffee

9:00 Welcome and introduction of the Workshop

Maria Theresa Rodriguez Montequin (Global R&D Portfolio Process Director, ArcelorMittal)
Mihai Barcanescu (Programme Manager, A.SPIRE)
Eric Fourest (SpotView coordinator, Centre Technique du Papier)

Session 1: Steel Industry (Chairing by Elorri IGOS, LIST)

9:30 Innovative water treatment and use of alternative water resources in iron and steel industry

Martin Hubrich, Matthias Kozariszczuk, (VDEh-Betriebsforschungsinstittut GmbH)
Elena Piedra Fernandez, Beatriz Padilla Vivas (ARCELORMITTAL Innovacion)

10:00 Efficient water use in steel industry by innovative and sustainable solutions (INSPIREWATER Project)

Martin Hubrich, Matthias Kozariszczuk, Beatriz Padilla Vivas (ARCELORMITTAL Innovacion)

10:30 Break – Posters session

Session 2: Dairy Industry (Chairing by Narinder BAINS, SERE)

11:00 Issues and strategies for effluent stream valorization and water conservation in the Dairy industry

Sioutopoulos Dimitrios, Anastasios Karabelas (Centre for Research and Technology-Hellas)
Konstantinos Georgakidis (MEVGAL)

11:30 Innovative technologies for valuable substance recovery and water reuse in the Dairy industry

Sioutopoulos Dimitrios, Anastasios Karabelas (Centre for Research and Technology-Hellas), Narinder Bains (SERE-Tech), Konstantinos Georgakidis (MEVGAL)

12:30 Networking Lunch – Posters session

Session 2: Paper Industry (Chairing by Serge ANDRES, SAICA)

14:00 Effluent reuse for fresh water reduction in the Pulp and Paper Industry

Stéphanie Prasse, Patrick Huber (Centre Technique du Papier)

14:30 Onsite generation of biocides for process water and effluent reuse, Pauliina Tukiainen, Heikki Pajari and Antti Grönroos (VTT)

15:00 Strategies and Technologies for valuable substance recovery in the Paper Industry

Christophe Neyret, Eric Fourest (Centre Technique du Papier), Serge Andres (SAICA), Pauline Thibault, Xavier Lacour, Alain Lascar (KADANT)

15:30 Break – Posters session

16:00 Pitching session: new technologies for process water efficiency (Chairing by Hank VLEEMING, Process Design Center, NL)

16:00 Chemical Heat Pump application in Steel and Paper Industries

Wouter Ducheyne (QPinch)

16:10 AkvoFloat: Innovative Flotation - Ceramic Filtration Process for Low energy Oily Wastewater Treatment.

Mario Rizkallah (AKVOLa Technologies)

16:20 SERE-Tech Elevated Pressure Sonication

Narinder Bains (SERE-Tech)

16:30 Valmet Ultrafiltration for Tissue mills

Timo Sutela (VALMET Technologies)

16:45 Discussion and Conclusions: future prospects for technology demonstration, exploitation scenarios and market assessment.

Venue and accommodation

Place of the Workshop is Niemeyer Center, Avda del Zinc, s/n 33400 Avilés, Spain.

The nearest Airport is Asturias Airport: http://www.aena.es/en/asturias-airport/index.html

From the airport to Avilés there are buses (Ticket/Info: turismovialasturias@elturismoasturias.com).

The nearest hotel is Palacio Centro. A menu del Zinc (€20 a la carta).

For more information, please contact: Ioana Stancu: Ioana.Stancu@webCTP.com
Global Research and Development

SpotView

A new industrial partnership for water efficiency

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1/22/2018

"The projects have received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreements No 723577"

Mayte Rodriguez
ArcelorMittal
Global R&D Process Portfolio Director -

The right formula for the steels of the future

Rain: 1000 l/m²

Welcome to Asturias “Natural Paradise”
Asturias 2017: Water Scarcity

Water Supply Constraints (Jun-Nov 2017)

ArcelorMittal: Sincerely committed to

Circular economy

Ecological responsibility

Water: A Raw Material mandatory to survive
Our Environmental roadmap

1. **REDUCE**
   Avoid or minimize generation
   - Efficient use of resources

2. **REUSE**
   Internal recycling
   - With increased VALUE of the ByProducts

3. **RECYCLE**
   External recycling

4. **RESTORE**
   Assure discharged fumes and water meet all the legal requirements

To minimize environmental footprint

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**Focus on Environmental research**

**Our MISSION**
Find innovative ways to enhance positive impacts and mitigate negative impacts of our operations on the environment, focusing on:
- Water Management
- By-Products
- Air Quality

**Our RESOURCES**
Specialized team and internal laboratories:
- **Pilot Plants** at semi-industrial scale
- Co-innovation with scientific partners and suppliers

- a. Air Lab: End of pipe technologies (6000 Nm³/h)
- b. Water Lab: Water Treatments (300 l/h)
Big Challenges - Big Solutions

Building Synergies – Developing Knowledge and Technology
c PPPs characteristics

- A public procurement arrangement (business relationship) between the **public sector and business** where risks, rewards and responsibilities are shared.
- The contractual arrangement specifies an indicative **7 years EU funding**

- **Budget** is only committed on an **annual basis** through H2020 calls in bi-annual Work Programmes
- Work Programmes are prepared on the basis of an **industry-led multi-annual roadmap**
- **Calls are open to all** and come with high leverage factors (not legally binding)

- **Industry has a leading role** in defining research & innovation priorities in this roadmap (allowing long-term investment plans)
- More emphasis on relevance of industry and **impact towards sustainability**
- Focused on **enabling industrial technologies** - European competitiveness
• Contractual Public-Private Partnership between European Commission & A.SPIRE supporting R&I for Process industries

• SPIRE Budget: €850M (DG RTD) + €50M (DG ENER) = €900M

• Participation under Horizon 2020 rules

SPIRE 2030 roadmap

TO TOMORROW’s SCENARIO:

- (Re)invent feedstock (waste, bio, CO₂)
- Reduce emissions; (re)invent energy & resource management concepts, incl. industrial symbiosis
- Introduce digital devices for better monitoring and control
- (Re)invent materials for optimised processes
- (Re)invent processes & materials with a significantly increased impact on resource & energy efficiency down the value chain: transport, housing
- Reduce waste & (re)invent technologies for valorisation of waste streams within and across sectors
**Expected Impacts**

R+I to integrate and demonstrate at least 40 innovative systems and technologies:

- 7 in Adaptable processes able to use different feedstocks
- 6 in Reduction and re-use of waste with ambition to close the loop
- 9 in Innovative processes leading to CO₂ reduction
- 8 in Green technologies to develop novel materials for new and existing markets
- 6 in Industrial processes reducing water use
- 4 using Technology uptake within/between sectors to enable industrial symbiosis

...and capable of achieving across process industry (by 2030):

- A reduction in fossil energy intensity of up to 30%
- A reduction in non-renewable, primary raw material intensity of up to 20%
- Efficiency improvement of CO₂-equivalent footprints of up to 40%
- 10 new types of high-skilled jobs

**KPIs at Project impact level**

- **KPI I.** Scale of reduction in energy, material resources and waste
- **KPI II.** Project results taken-up for further investments (into higher TRLs)
- **KPI III.** Trainings for a higher quality workforce
- **KPI IV.** Patents and activities leading to standardisation
**QUESTIONNAIRE FOR SPIRE PROJECTS’ COORDINATORS**

The survey is divided into five parts. Each part can be filled in by the coordinator or by a project partner considering the specific input required:

- **PART A: Project Fundamentals**
- **PART B: Innovation outcomes - Business impact**
- **PART C: Environmental impact**
- **PART D: Socio-economic impact**
- **PART E: Success Stories**

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**The Governance**

- **Private Partner Association**
  - Discuss priorities
  - Propose call topics
  - Form consortia
  - Apply to calls

- **Partnership Board**
  - Discuss priorities & call topics
  - Assess progress

- **European Commission**
  - Develop work programme
  - Publish open calls
2018 Membership

<table>
<thead>
<tr>
<th>Member type</th>
<th>Count of membership</th>
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<tbody>
<tr>
<td>Industry - large</td>
<td>29</td>
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<tr>
<td>Industry - intermediate</td>
<td>3</td>
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<tr>
<td>Industry - small</td>
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<tr>
<td>Research - large</td>
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<td>Research - small</td>
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<td>13</td>
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<tr>
<td>Total</td>
<td>152</td>
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Projects are core for a PPP

70 running projects + 7 finished = 77 SPIRE Projects
35 RIAs / 34 IAs / 8 CSAs

Results - Impact + Synergies

www.spire2030.eu
Cross-sectorial approach

Cross-sectorial collaboration is cornerstone for SPIRE projects:

- Minimum: 2 sectors/project
- 7 or 8 sectors together are collaborating in various projects
- Average: +2.67 sectors/per project

SPIRE PROJECTS

Projects – EC / A.SPIRE – Industry

WIN – WIN – WIN

- Keep track of impact
- Foresee feasibility in industrial environments
- Identify & evaluate non-technological barriers
- Identify skills needs

- You are / should NOT be alone
- Find synergies with other projects
- Use & support A.SPIRE
- Use & feed A.SPIRE tools
  - Events
  - Projects brochure / newsletter
  - SPIRE Knowledge platform

www.spire2030.eu
A.SPIRE communication tools

Projects
- Videos of projects 2014 - 2016
- Communication support document
- SPIRE label

Publications & stands
- SPIRE Roadmap
- SPIRE Brochure (A4)
- SPIRE Projects’ Portfolio (A5)
- Roll-up
- Pop-up stand
- Business cards
- Folders

Presentations

Social media

Events
www.spire2030.eu

MAIN SPIRE 2018 EVENTS

- EU INDUSTRY DAYS, 22-23 February 2018, Brussels
- ACHHEMA 2018 (11 - 15 June 2018) + Brokerage, Frankfurt am Main, Germany (A.SPIRE booth) + 14 June – 3rd SPIRE Thematic Workshop
- cPPPs Conference 26 June 2018, Brussels
- SPIRE Projects’ day (tbd)
- ProcessNet-Jahrestagung 2018, 10-13 September 2018, Aachen, Germany (A.SPIRE booth)
- SPIRE Digital Workshop, 1 October 2018, Brussels
- SPIRE 2050 Stakeholders’ Workshop, 2 October 2018, Brussels
- Industrial Technologies Conference 2018, 29-30 October 2018, Vienna
- SPIRE at K4I Innovation week, End November (date tbc), Brussels
- UN Climate Change Conference COP24 Conference, SPIRE Workshop, 11 December, Katowice
SPIRE 2050 VISION

Towards the Next Generation of Process Industry