Integrated Control and Sensing for Sustainable Operation of Flexible Intensified Processes

Fact Sheet

Project Information

CONSENS
Grant agreement ID: 636942

Funded under H2020-EU.2.1.5.3.

Overall budget € 5,997,550

EU contribution € 5,997,550

Project website

Start date 1 January 2015
End date 31 December 2017

Coordinated by BAYER AKTIENGESELLSCHAFT Germany

Objective

Intensified continuous processes are a key innovation of the last decade for the production of high quality, high value and customer-specific products at competitive prices in a sustainable fashion. To realize the potential of this technology, key steps must be made towards long-term stable, tightly controlled and fully automated production. The goal of the CONSENS project is to advance the continuous production of high-value products meeting high quality demands in flexible intensified continuous plants by introducing novel online sensing equipment and closed-loop control of the key product parameters. CONSENS will focus on flexible continuous plants but the results will be transferable also to large-scale continuous processes. The research and development is driven by industrial case studies from three different areas, spanning the complete value chain of chemical production: complex organic synthesis, speciality polymers, and formulation of complex liquids. Innovative PAT technology will be developed for online concentration measurements (mid-resolution process NMR) for the online non-invasive measurement of...
mid-resolution process NMR), for the online non-invasive measurement of rheological properties of complex fluids, and for continuous measurements of fouling in tubular reactors. New model-based adaptive control schemes based on innovative PAT technology will be developed. The project results will be validated in industrial pilot plants for all three types of processes, including validation in production containers that have been developed in the F3 Factory project. Further, methods for sensor failure monitoring, control performance monitoring and engineering support for PAT-based solutions will be developed.

The exploitation of the new technologies will be facilitated by a tool for technology evaluation and economic impact assessment. A Cross-sectorial Advisory Board supports the transfer of PAT technologies and adaptive control to neighboring sectors of the European processing industry.

Field of science
/social sciences/economics and business/economics/sustainable economy

Programme(s)

Topic(s)

Call for proposal

H2020-SPIRE-2014

Funding Scheme

RIA - Research and Innovation action

Coordinator

BAYER AKTIENGESELLSCHAFT

Address
Kaiser-wilhelm-allee 1
51373 Leverkusen
Germany

Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)

EU contribution
€ 914 000

Website
Contact the organisation

Participants (14)
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<tr>
<th>Organisation</th>
<th>Country</th>
<th>EU contribution</th>
<th>Address</th>
<th>Activity type</th>
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<tr>
<td>ARKEMA FRANCE SA</td>
<td>France</td>
<td>€ 139 500</td>
<td>Rue Estienne D Orves, 92700 Colombes</td>
<td>Private for-profit entities (excluding Higher or Secondary Education Establishments)</td>
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<td>TECHNISCHE UNIVERSITAT DORTMUND</td>
<td>Germany</td>
<td>€ 626 000</td>
<td>August Schmidt Strasse 4, 44227 Dortmund</td>
<td>Higher or Secondary Education Establishments</td>
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<td>NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK TNO</td>
<td>Netherlands</td>
<td>€ 804 865</td>
<td>Anna Van Buerenplein 1, 2595 DA Den Haag</td>
<td>Research Organisations</td>
</tr>
<tr>
<td>PROCTER &amp; GAMBLE SERVICES COMPANY NV</td>
<td>Belgium</td>
<td>€ 312 210</td>
<td>Temselaan 100, 1853 Strombeek Bever</td>
<td>Private for-profit entities (excluding Higher or Secondary Education Establishments)</td>
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CLARIANT PRODUKTE (DEUTSCHLAND) GMBH
Germany
EU contribution
€ 400 000
Address: Bruningstrasse 50
65929 Frankfurt Am Main
Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)
Website
Contact the organisation

INVITE GMBH
Germany
EU contribution
€ 645 023,75
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Activity type: Research Organisations
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BASF SE
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EU contribution
€ 300 250
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Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)
Website
Contact the organisation

BUNDESANSTALT FUER MATERIALFORSCHUNG UND -PRUEFUNG
Germany
EU contribution
€ 365 000
Address: Unter Den Eichen 87
Activity type: Research Organisations
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<td>UNIVERSITA DEGLI STUDI DI CAGLIARI</td>
<td>Italy</td>
<td>€ 207 000</td>
<td>Via Universita 40, 09124 Cagliari</td>
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<tr>
<td>KROHNE MESSTECHNIK GMBH</td>
<td>Germany</td>
<td>€ 326 875</td>
<td>Ludwig Krohne Str 5, 47058 Duisburg</td>
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<td>RHODIA OPERATIONS</td>
<td>France</td>
<td>€ 300 625</td>
<td>25 Rue De Clichy, 75009 Paris</td>
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<td>INNO TSD</td>
<td>France</td>
<td>€ 210 875</td>
<td>Place Joseph Bermond</td>
<td>Private for-profit entities</td>
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</table>
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Website  
Contact the organisation  

COATEX SAS
France

EU contribution
€ 188 326,25

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Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Website  
Contact the organisation  

ATLAN-TEC SYSTEMS GMBH
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EU contribution
€ 257 000

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Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Contact the organisation  

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