Obiettivo

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 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.

**Campo scientifico**

/scienze sociali/economia e commercio/scienze economiche/economia sostenibile

**Programma(i)**

**Argomento(i)**

**Invito a presentare proposte**

H2020-SPIRE-2014

**Meccanismo di finanziamento**

RIA - Research and Innovation action

**Coordinatore**

BAYER AKTIENGESELLSCHAFT

Indirizzo

Kaiser-wilhelm-allee 1
51373 Leverkusen
Germania

Tipo di attività

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

Contributo UE

€ 914 000

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**CLARIANT PRODUKTE (DEUTSCHLAND) GMBH**

Germania

Contributo UE
€ 400 000

Indirizzo
Bruningstrasse 50
65929 Frankfurt Am Main

Tipo di attività
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Sito web
Contatta l'organizzazione

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**INVITE GMBH**

Germania

Contributo UE
€ 645 023,75

Indirizzo
Kaiser Wilhelm Allee 50
51373 Leverkusen

Tipo di attività
Research Organisations

Contatta l'organizzazione

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**BASF SE**

Germania

Contributo UE
€ 300 250

Indirizzo
Carl Bosch Strasse 38
67063 Ludwigshafen Am Rhein

Tipo di attività
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Sito web
Contatta l'organizzazione

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**BUNDESANSTALT FUER MATERIALFORSCHUNG UND -PRUEFUNG**

Germania
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Ultimo aggiornamento: 16 Luglio 2020
Numero di registrazione: 193445

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