

R&D detail:

Program: ERA-Net SUSFOOD

Call: SUSFOOD's 2nd Joint Call for Proposals

Topic: Redesign input, waste and side flow strategies to increase resource efficiency and provide added value in food processing, manufacture *etc.*

Deadlines:

Deadline for proposals: 1 April 2014, 15:00 p.m. Brussels time

Research institution details:

Name: Blaž Likozar

Institution: National institute of Chemistry, Laboratory of Catalysis and Chemical Reaction Engineering

Web-site: <http://www.ki.si/en/materials-engineering-and-analytics/l13-laboratory-of-catalysis-and-chemical-reaction-engineering/>

Country: Slovenia

Address: Hajdrihova 19, 1000 Ljubljana

Email address: blaz.likozar@ki.si

Phone: +386 1 4760 283

Research institution description:

National Institute of Chemistry is a **public research organization** in Slovenia. It has 14 laboratories that cover different topics of chemical research. The Laboratory of Catalysis and Chemical Reaction Engineering main fields of research are: hydrogen production and use, biofuel production, pyrolysis, combustion and gasification, micro-process engineering, process and product modelling, sensitivity analysis, optimization, intensification, economical valorization, reaction kinetics, transport phenomena and fluid mechanics.

Industrial cooperation and references:

The laboratory was and is currently cooperating with several **Slovenian industrial partners** as well as **international ones**. The latter among others include:

- Renault, Paris, France
- European Space Agency (ESA)
- Bayer Technology Services GmbH, Leverkusen, Germany
- Sandoz, Holzkirchen, Germany
- Mannesmann, Düsseldorf, Germany
- Süd-Chemie, Muttenz, Switzerland
- Inser, Torino, Italy
- Hana, Korea

Proposed project:

Laboratory of catalysis and chemical reaction engineering (National Institute of Chemistry) would like to cooperate in a project based on our (below described) potential contributions to the project. We would preferentially research and develop the catalytic processes for the synthesis of renewable chemicals (catalytic upgrade of food waste and side flow-derived precursors) and fuels (biodiesel using transesterification, hydrocracking, hydro-de-oxygenation, Fischer–Tropsch, *etc.*) from food waste and side flows using the catalysts, developed by other potential project partners. As an alternative, the optimization and intensification of the existing processes, related to food processing technology, may be proposed, focusing on increasing the extent of renewable resources and energy use, and the optimization production waste- and side streams.

Type of partner sought:

We are interested in **all eligible organizations** with complementary fields of research.

Expected partners' roles in the project:

Laboratory of catalysis and chemical reaction engineering is looking for a suitable **project coordinator or project consortium** for ERA-Net SUSFOOD 2nd Joint Call for Proposals 2014 (Redesign input, waste and side flow strategies to increase resource efficiency and provide added value in food processing, manufacture *etc.*), in which we would prefer to serve as partners.

Contribution to the project:

- **hydrogen production and use** (sorption-enhanced steam reforming, fuel cells, hydrogenation processes...)
- **biofuel production** (biodiesel; batch/continuous and conventional/heterogeneous/enzymatic production; liquefied biomass; batch/continuous hydrogenation)
- **pyrolysis, combustion and gasification** (coal, biomass, polymer waste...)
- **micro-process engineering** (lab-on-a-chip, steam reforming, catalyst screening...)
- **distillations, extractions, absorptions**
- **process and product modelling, sensitivity analysis, optimization, intensification, economical valorization**
- **reaction kinetics, transport phenomena and fluid mechanics**