

PRINTCR3DIT: Process Intensification through Adaptable Catalytic Reactors produced by 3D Printing

The project will be completed by 30/9/2018. The first results of the project are now published. There are until now, two peer reviewed published publications: "[Pressure drop and heat transfer properties of cubic iso-reticular foams](#)" and "[Process Intensification in Nitric Acid Plants by Catalytic Oxidation of Nitric Oxide](#)". Other results are on the way to be published.

Our project will have several presentations in [CHISA conference](#) in Prague. After that conference, the [First European school](#) for additive manufacturing applied to chemical industries will be held. The school attendance is now fully booked, and the registered participants are coming from more than 10 different countries. The agenda and venue are available on our [webpage](#).

Acknowledging that we have the need to develop new knowledge for additive manufacturing to take up within the chemical industries, we have also published an open deliverable regarding the connections between 3D printing and education. The report is available free of charge in our [project webpage](#).



The second edition of the contest of 3D printing reactor design was finalised. A group from the Faculty of Chemical Engineering and Technology from the University of Zagreb got the first price with the design of a millireactor that was tested using a Base catalyzed aldol condensation.

A detailed 3D wireframe rendering of a complex industrial system, likely a chemical reactor or processing unit. The image shows a dense network of pipes, valves, flanges, and cylindrical vessels, all rendered in a light gray wireframe style. The perspective is from a slightly elevated angle, looking down into the machinery. The background is a light, neutral color, making the intricate structure stand out.

All our demonstrators are now in place. We have three demonstrators for the different applications of the project; two of them fully built within the project. One of the demonstrators was prepared in Germany and installed in France (see figure below – the 3D printed part is to be tested in the unit). Another demonstrator is located in YARA facilities in Porsgrunn, Norway and will be shown in the Dissemination event of the project in September (see the Save the Date section in this newsletter). The demonstrator has a length of 7.5 meters and will be filled with a catalyst prepared by three partners of the consortium in three different countries (Spain, United Kingdom and Norway), making it a truly European demonstrator. This catalyst could not be prepared by traditional methods which will enhance the benefits of using additive manufacturing for novel developments in chemical industries. Please contact us if you are interested in participating in the dissemination event.