

## News Release



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# UvA-chemist discovers new chemical catalyst for ammoximation

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**Dr. N. Raveendran Shiju**, a researcher at the University of Amsterdam's Heterogeneous Catalysis and Sustainable Chemistry group, has discovered a new catalyst for ammoximation reactions. This catalyst is suitable for the production of nylon, fine chemicals and pharmaceutical intermediates. The discovery of Shiju promises to be a significant contribution to an economically attractive process for cleaner ammoximation.

The current industrial ammoximation processes generate as much as 2.5 kilograms of waste for every kilogram of end product. The new catalyst can significantly reduce this. Moreover, the catalyst is easy to make and cheaper to achieve, because less chemical additives are needed. Shiju and his fellow researchers are now concentrating on further research. To further optimize the process, a better understanding of the relationship between structure and activity at the catalyst surface is needed. In order to find answers to these fundamental research questions, Shiju applied for a 'Vidi' grant, part of the Innovational Research Incentive Scheme offered by the Netherlands Organisation for Scientific Research (NWO).

Shiju's invention is a good example of the use of heterogeneous catalysis for sustainable chemical processes. The new catalyst could possibly be used for the production of several important chemicals such as caprolactam and nylon, and even in a clean and efficient synthesis of paracetamol. Due to the potential uses for the industry, patent applications have been filed in the EU and US with help from the Knowledge Transfer Office of the UvA.

### *About the scientist:*

Shiju, trained as a chemical engineer, is an assistant professor in the research group of Prof. Gadi Rothenberg.

He specialises in the nanostructure of heterogeneous catalysts. Previously, he worked at the University of Cincinnati and the Royal Institution of Great Britain. In Amsterdam he is working with Rothenberg on the further development of the Heterogeneous Catalysis field. The group will shortly move to a brand new laboratory at the Science Park Amsterdam.