Clean Catalysis: Prof. Dr. Martin Oschatz receives ERC Starting Grant

Start Time: Thursday, January 20, 2022

End Time:

Every year, the European Research Council (ERC) supports young researchers with an ERC Starting Grant of up to 1.5 million Euro to be used within five years for pioneering work in science and finding answers to urgent questions of the future. This year, the former UniSysCat researcher Prof. Dr. Martin Oschatz from the University of Jena is receiving this coveted grant for his "CILCat" project, with which he aims to revolutionize catalysis.

In his new project CILCat, Oschatz wants to develop promising concepts for catalysis "and also realize unconventional, completely new ideas. New challenges in the field of energy and the environment first need new physical-chemical approaches to be solved," says Martin Oschatz. His group in Jena is working on new materials for catalysis: Instead of using conventional materials with individual catalytic centers on their surfaces, they want to develop materials with an overall catalytically active surface - and all without rare, expensive or toxic metals that are typically employed for catalytic processes. "We want to achieve this by creating 'artificial bonding states' of molecules between the surfaces of sustainable porous carbon materials and ionic liquids on top of them.“, as the chemist describes the idea behind CILCat. The project shall make catalysis cleaner, more sustainable and less dangerous: „We will look at activating nitrogen, a very inert molecule. With the help of water and electricity from renewable energies, we want to produce ammonia, which can then be further processed into fertiliser or basic chemicals that can be used to produce medicines.“ The approach of CILCat is moreover very

promising to make the Haber-Bosch process for the production of ammonia significantly more sustainable.

In UniSysCat, the chemist Martin Oschatz had been working on functional porous materials for catalysis, gas adsorption and energy storage. He was a group leader at the Max-Planck-Institute of Colloids and Interfaces in Postdam before he became a Professor at the University of Jena, where he now holds the Chair for Chemistry of Materials for Energy Applications.

Martin Oschatz explains how his new project at the University of Jena arose from his research within UniSysCat: "The idea for the CILCat project is in large parts based on the experience we gained through the research performed in the UniSysCat framework. Preliminary works in electrocatalysis and in investigating the influence of the distance of two catalytically active centers has inspired me to investigate the activation of molecules in electric double-layers. The experience as a board member and PI in UniSysCat helped me a lot when I started my new position in Jena and I am still very thankful to all collaborators in UniSysCat for a fruitful time".

UniSysCat congratulates to the ERC Starting Grant and wishes good luck with the CILCat project!

Please find further information on the new CILCat project of Prof. Martin Oschatz in the press release of the University of Jena and in a TV report by MDR.