UniSysCat - Colloquium

Dr. Majd Al-Naji

Max Planck Institute for Colloid and Interface Science, Potsdam

Start Time: Wednesday, January 5, 2022 05:15 pm

End Time: Wednesday, January 5, 2022 07:00 pm

Online

Novel heterogeneous catalytic systems for greener biorefinery and sustainable chemical processes

Dr. Majd Al-Naji

Max Planck Institute for Colloid and Interface Science, Potsdam

Intensive utilization of fossil resources for the production of energy, liquid transportation fuels, chemicals and plastics in the past century led to the current great environmental challenge of global warming, as well as the large plastic waste in oceans and the land.[1-3] Therefore, the transition towards carbon neutral societies with a circular economy independent of fossil resources is greatly needed to mitigate the influence of climate change. For this purpose, my research aims to design and develop sustainable multifunctional solid catalysts for green processes such as biorefinery in flow systems and chemical plastic recycling, which are in line with the *United Nations Sustainability Plan* and *European Union 2050 vision* (climate neutrality) for climate protection. In this seminar, I will present the synthesis of novel solid catalysts, and their applications at different biorefinery processes in continuous flow systems, i.e., production of different building blocks from cellulosic fraction and lignin first approach. Moreover, the chemiocatalytic plastic recycling mainly for Polyethylene terephthalate (PET) and Polyethylene (PE) will be discussed.

unisyscat

References
[1] X. Wang, K. Maeda, A. Thomas, K. Takanabe, G. Xin, J. M. Carlsson, K. Domen, M. Antonietti, Nat. Mater., 8 (2009) 76-80.
[2] M. Al-Naji, J. Van Aelst, Y. Liao, M. d'Halluin, Z. Tian, C. Wang, R. Gläser, B. F. Sels, Green Chem., 22 (2020) 1171-1181.
[3] M. Al-Naji, H. Schlaad, M. Antonietti, Macromol. Rapid Commun., 42 (2021) 2000485.

Prof. Dr. Matthias Drieß

Organizer

FHI