



CatLab Lecture Series hosted by FHI and HZB

Friday, October 27th 2023, 10:30-12:00

BESSY II, Seminar Room at the Entrance, Albert-Einstein-Straße 15, Berlin Adlershof

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Modelling catalyst degradation through experiment and computation

Catalysts degrade over time during reactor operation, resulting in loss of activity, as well as selectivity. A variety of physical and chemical phenomena contribute toward catalyst degradation, such as particle growth, coking, poisoning, or chemical reactions between the catalyst and the reaction medium, or between the active material and the catalyst support. Catalyst degradation is not always well-understood, and improving a catalyst's life time is often a trial-and-error process. This lecture will cover the fundamental causes of typical catalyst deactivation phenomena, introduce computational and experimental techniques to analyse catalyst degradation, and demonstrate practical examples to a rational approach to make catalysts more resistant to degradation.