

CatLab Lecture Series hosted by FHI and HZB

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**Friday, October 20<sup>th</sup> 2023, 10:30-12:00**

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

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## **Tailoring thin films for catalysis: Thin film growth methods and properties**

Thin film technology is a key technology in many high-tech sectors today and plays a crucial role in the development of photovoltaics. It allows to control of a very broad set of material (e.g. electronic or optical) properties down to the atomic level, yet can be compatible with high-volume low-cost manufacturing.

The CatLab project aims to exploit exactly these characteristics of thin film technology for use in catalytic reactions, especially for chemical energy carriers, such as (green) hydrogen and carbon- or nitrogen-based chemicals derived from it.

In this introductory lecture, the fundamentals of thin film technology are presented, with a particular focus on vacuum-based deposition methods and how the versatile use of these methods can influence the resulting material properties, drawing on examples from related applications and from the first period of CatLab experiments.