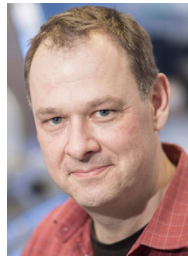


Liquid-Phase Quasi-Epitaxial Growth of Highly Stable, Monolithic UiO-66-NH₂ MOF thin Films on Solid Substrates



Tawheed Hashem

Elvia P. Valadez
Sánchez

Hartmut Gliemann

Mohamed H.
Alkordi

Christof Wöll



Invited for this month's cover is the group of Dr. Tawheed Hashem from the Karlsruhe Institute of Technology. The cover picture shows a successful synthesis of high quality, monolithic UiO-66-NH₂ MOF thin films on diverse solid substrates via a low-temperature liquid phase epitaxy method. The achievement of continuous MOF-coatings with low defect densities and pronounced stability against high temperatures and hot water was proven. The new type of coatings clearly outperforms other reported types of MOF thin films. Read the full text of their Communication at 10.1002/open.201900324.

Is your current research mainly curiosity driven (fundamental) or rather applied?

It is really a combination of both approaches. Since the stability of previously known MOF thin films under aqueous conditions was not sufficient, we investigated novel synthesis methods for other, more stable types of MOFs. Understanding fundamentals is always interesting, but so is developing in parallel creative ideas pursuing real world applications.

Did you initially have to motivate prospective team members to tackle this topic?

Motivation is always important, not only at the beginning of a project, but constantly and in this case it came from all team members. We worked collaboratively and used the expertise of each of us, accomplishing the goals we were aiming for in this research work.

What future opportunities do you see (in the light of the results presented in this paper)?

Currently, we are conducting an in-depth exploration and characterization of the new type of coating. We also seek to optimize the synthesis process on diverse supports to exploit the material's potential on diverse applications. The latter include in particular biological and medical applications, as well as water treatment.

