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30. Januar 2015

Bachelor/Master Thesis

Continuous synthesis of ordered mesoporous silica

Since its discovery in the early 1990s, ordered mesoporous silica (OMS) has attracted a lot of attention due to the myriad of possible applications that this material encompasses. Applications of OMS in catalysis and microreactos, drug delivery, molecular sieving, storage, etc. are currently under investigation.

OMS is normally synthesized in small scale batches, yielding on average less than 10 grams of powder. This study focuses on optimizing a continuous OMS synthesis process aimed at producing quantities of OMS closer to industrial scale.

Methods and techniques that will be used:

- OMS batch synthesis
- OMS continuous synthesis: initial testing and optimization
- Determination of the specific surface area and pore size using nitrogen adsorption (BET)
- Determination of pore ordering using small-angle X-ray spectroscopy (SAXS)
- Particle morphology studies via scanning electron microscopy (SEM)

The candidate will be assisted during the project. Master students with excellent course achievements (*mit exzellenten Studienleistungen*) have the possibility to apply for a fellowship.

If you wish more information about the project please contact:

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