

## Ordered mesoporous metallo-silicates

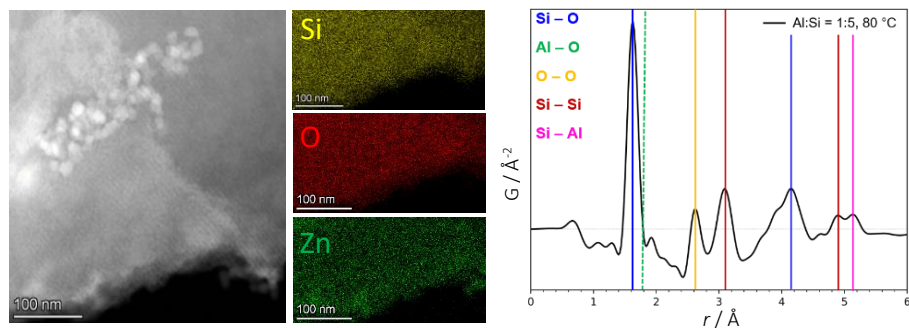
Selina Itzighel<sup>1</sup>, Tom Ott<sup>1</sup>, Theresia Krol<sup>1</sup>, Damjana Takeva<sup>1</sup>, Jong Hyun Jung<sup>2</sup>, Tom Schächtel<sup>2</sup>, Blazej T. Grabowski<sup>2</sup>, Johanna R. Bruckner<sup>1</sup>

<sup>1</sup>Institute of Physical Chemistry, University of Stuttgart, 70569 Stuttgart, Germany

<sup>2</sup>Institute of Materials Sciences, University of Stuttgart, 70569 Stuttgart, Germany

selina.itzighel@ipc.uni-stuttgart.de:

Ordered mesoporous silica (OMS) materials, prepared by true liquid crystal templating (TLCT), exhibit highly ordered pore structures and narrow pore size distributions.<sup>[1]</sup> Therefore they represent excellent catalyst carrier materials.<sup>[2]</sup> By addition of Lewis and Brønsted acid sites in the form of metal centres, these materials can be elevated to catalytically active materials. For this purpose, it is vital to understand the incorporation and final position of the metal atoms inside of the silica matrix. Here, we show possible metal centres that can be incorporated into our OMS materials (OM<sup>2</sup>S) as well as joint characterisation efforts in theory and experiment to elucidate the structure of ordered metallo-silicates.



**Figure 1:** TEM and EDX images of zinc OMS. Measured pair distribution function (PDF) of Al-OMS.

- [1] J. R. Bruckner, J. Bauhof, J. Gebhardt, A.-K. Beurer, Y. Traa, F. Giesselmann, *J. Phys. Chem. B* **2021**, 125, 3207.
- [2] F. Ziegler, H. Kraus, M. J. Benedikter, D. Wang, J. R. Bruckner, M. Nowakowski, K. Weißer, H. Solodenko, G. Schmitz, M. Bauer, N. Hansen, M. R. Buchmeiser, *ACS Catalysis* **2021**, 11.

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