



EINLADUNG

zum Vortrag von

Ass.Prof. Dr. Jia Min Chin

Institut für Physikalische Chemie, Universität Wien

Chemistry at Interfaces – MOF materials and beyond

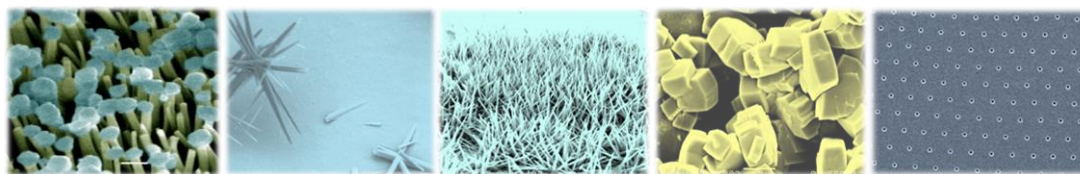
am

Dienstag, 24. März 2020, um 17:30 Uhr

Ort: Lise-Meitner-Hörsaal, Fakultät für Physik, Universität Wien,
1090 Wien, Strudlhofgasse 4 / Boltzmannngasse 5, 1. Stock

Barrierefreier Zugang: Boltzmannngasse 5, Lift, 1. Stock rechts über den Gang zum Hintereingang des Hörsaals

Abstract



This talk addresses some of my group's research highlights on MOFs and other functional materials, whereby we take a curiosity-driven approach to structure and derive novel applications for MOF materials, dry liquids and polymer films. I will discuss coordination modulation of MOFs to tune crystal morphology to produce micro and nanoparticles as well as strategies to produce MOF grass, microflower and micro-mushroom structures for imparting omniphobicity to a surface. I will also explore ways to dynamically control MOF orientation within their composites, and to create non-close-packed pore arrays in polymer films in a one-step manner. Fabrication of complex microstructures for surface functionalization often requires lithographic techniques and specialized equipment. By exploiting physicochemical interactions at air/liquid/solid interfaces, in combination with simple processing methods and benchtop techniques, we can create typically difficult-to-access microstructures, and show the importance of chemistry at interfaces to a wide variety of materials.

References:

- "Dynamic electric field alignment of metal-organic framework microrods" Cheng, F.; Young, A. J.; Bouillard, J-S. G.; Kemp, N. T.; Guillet-Nicolas, R.; Hall, C. H.; Roberts, D.; Jaafar, A. H.; Adawi, A. M.; Kleitz, F.; Imhof, A.; Reithofer, M. R.*; Chin, J. M.* *J. Am. Chem. Soc.*, *Just Accepted*.
- "Direct ink writing of catalytically active UiO-66 polymer composites" Young, A. J.; Guillet-Nicolas, R.; Marshall, E. S.; Kleitz, F.; Goodhand, A. J.; Glanville, L. B. L.; Reithofer, M. R.*; Chin, J. M.* *Chem. Commun.*, 2019, 55, 2190-2193
- "Magnetic Control of MOF Crystal Orientation and Alignment" Cheng, F.; Marshall, E. S.; Young, A. J.; Robinson, P. J.; Bouillard, J-S. G.; Adawi, A. M.; Vermeulen, N. A.; Farha, O. K.; Reithofer, M. R.*; Chin, J. M., *Chem. Eur.* 2017, 23, 15578.
- "Capture by Dry Alkanolamines and an Efficient Microwave Regeneration Process" Yang, J.; Tan, H. Y.; Low, Q. X.; Binks, B. P.* and Chin, J. M.* *J. Mater. Chem. A*, 2015, 3, 6440.
- "Non-Close-Packed Breath Figures via Ion-Partitioning-Mediated Self-Assembly" Aw, J. E.; Goh, G. T. W.; Huang, S.; Reithofer, M. R.; Thong, A. Z. and Chin, J. M.* *Langmuir*, 2015, 31, 6688.
- "Motorized Janus metal organic framework crystals" Tan, T.T. Y.; Cham, J. T. M.; Reithofer, M. R.; Hor, T. S. A.*; Chin, J. M.* , *Chem. Commun.*, 2014, 50, 15175.
- "Photoreponsive Liquid Marbles and Dry Liquids" Tan, T.T. Y.; Ahsan, A.; Reithofer, M. R.; Tay, S. W.; Tan, S. Y.; Xu, J.; Hor, T. S. A.*; Chin, J. M.*; Chew, B. K. J.; Wang, X. B. , *Langmuir*, 2014, 30, 3448.
- "Tuning Omniphobicity via Morphological Control of Metal-Organic Framework Functionalized Surfaces" Tan, T. T. Y.; Reithofer, M. R.; Chen, E. Y.; Menon, A. G.; Hor, T. S. A.; Xu, J.; Chin, J. M.* , *J. Am. Chem. Soc.*, 2013, 135, 16272.
- "Tuning the aspect ratio of NH₂-MIL-53(Al) microneedles and nanorods via coordination modulation" Chin, J. M.; Chen, E. Y.; Menon, A. G.; Tan, H. Y.; Hor, T. S. A.; Schreyer, M. K.; Xu, J. *CrystEngComm*, 2013, 15, 654.

Kaffee und Getränke werden bereitgestellt

CHEMISCH-PHYSIKALISCHE GESELLSCHAFT

c/o Universität Wien, Fakultät für Physik, 1090 Wien, Strudlhofgasse 4/Boltzmannngasse 5, Austria

Generalsekretär: Christl Langstadlinger

Tel.: +43-(0)1-4277/51108 - Mobil: 0664-60277 51108 - E-Mail: christl.langstadlinger@univie.ac.at

ZVR-Zahl: 513907440 - <http://www.cpg.univie.ac.at>

Konto: Bank Austria - IBAN: AT22 1100 0086 4440 8000 - BIC: BKAUATWW