

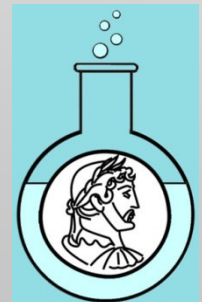
Vorstellung der Preisträgerinnen und Preisträger des Römer-Preises 2022

Mit herzlichem Dank an die Römer-Stiftung
für die großzügige Förderung
der Departments Biochemie und Chemie.

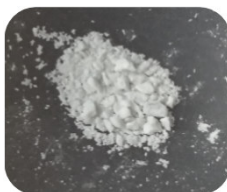
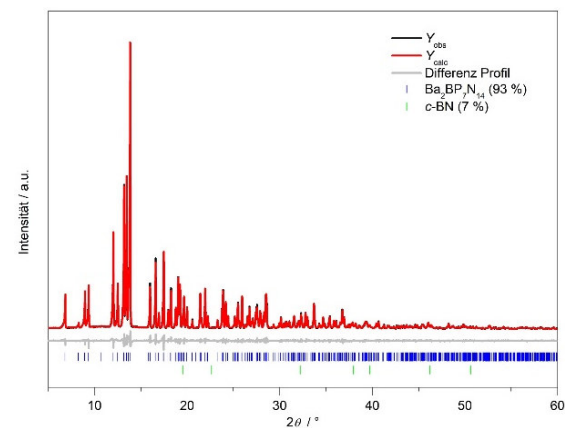


Mit Preisen in Höhe von 500 € wurden für exzellente Leistungen während ihrer Master-Arbeiten ausgezeichnet:

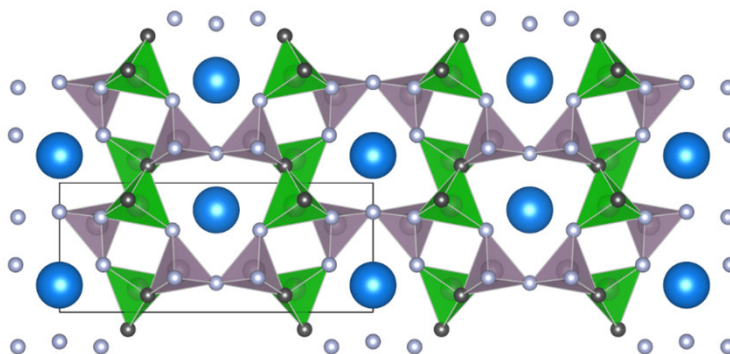
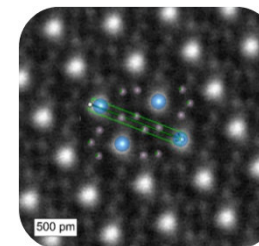
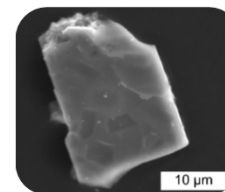
Amalina Tiziana Buda
Patrick Ganswindt
David Helming
Jan Kruse
Julia Rauh
Doreen Reuter
Alexandra Stan
Andreas Wiest



High-pressure/ High-temperature Synthesis of $\text{Ba}_2\text{BP}_7\text{N}_{14}$



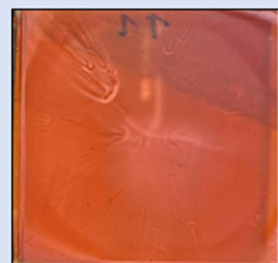
Amalina Tiziana Buda
AK Schnick



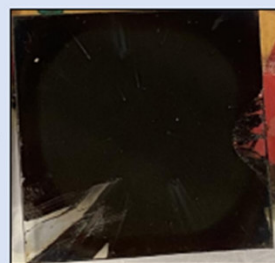
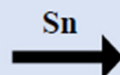
$\text{Ba}_2\text{BP}_7\text{N}_{14}$

Tin Alloying of an Antimony-Based Perovskite-Like System for Photovoltaic Application

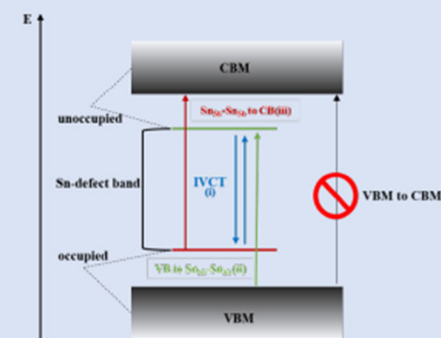
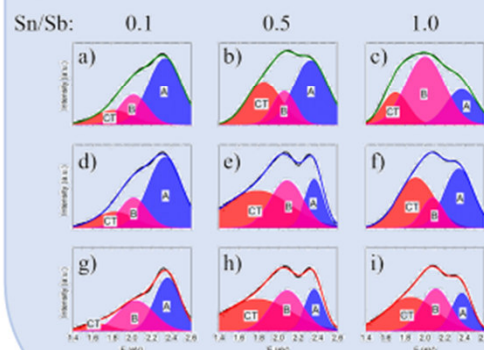
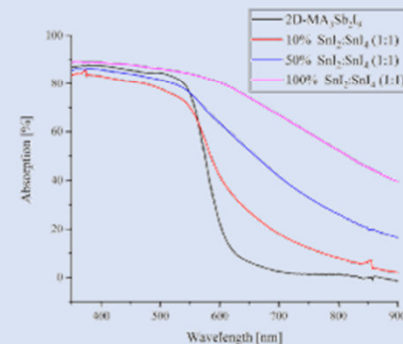
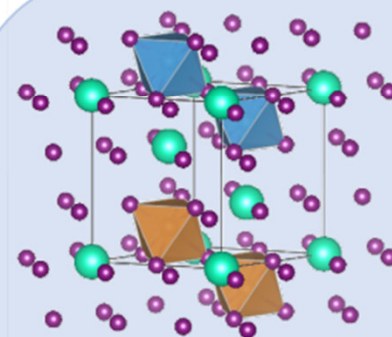
By Patrick Ganswindt
AK Bein



$\text{MA}_3\text{Sb}_2\text{I}_9$



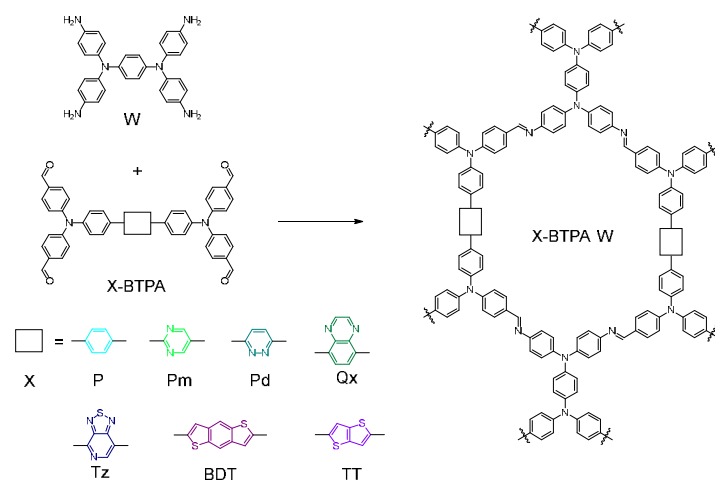
$\text{MA}_3\text{Sb}_{2-y}\text{Sn}_y\text{I}_{9-y}\text{X}_y$



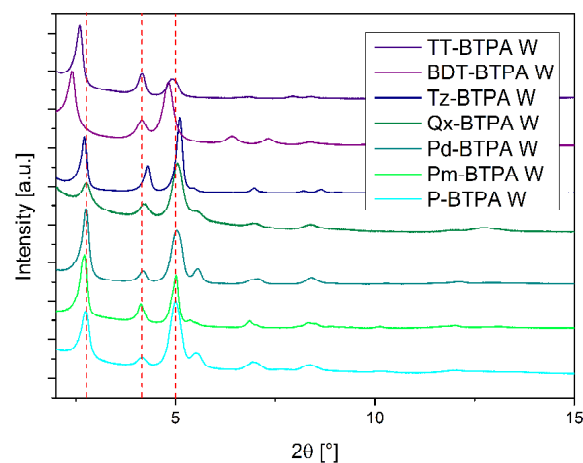
J. Phys. Chem. C 2022, 126, 49, 21040–21049

Selective Modification of Donor-Acceptor Molecules in Wurster-Type Covalent Organic Frameworks

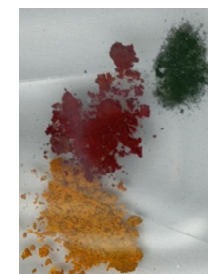
Masterarbeit von David Helminger im
AK Bein unter Aufsicht von Roman Guntermann



Synthesereaktionen

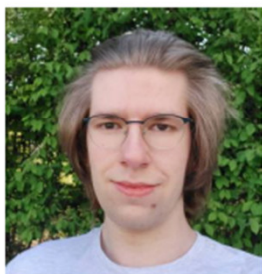


PXRD Daten



Farben der COF Pulver

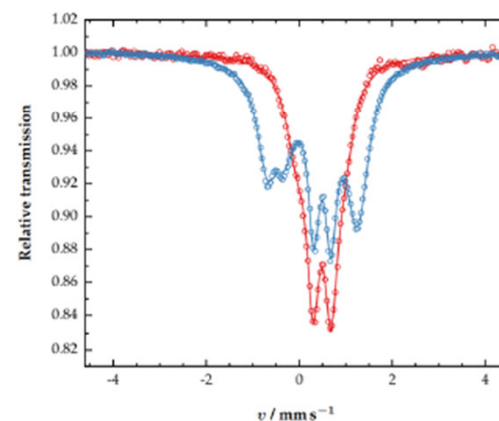
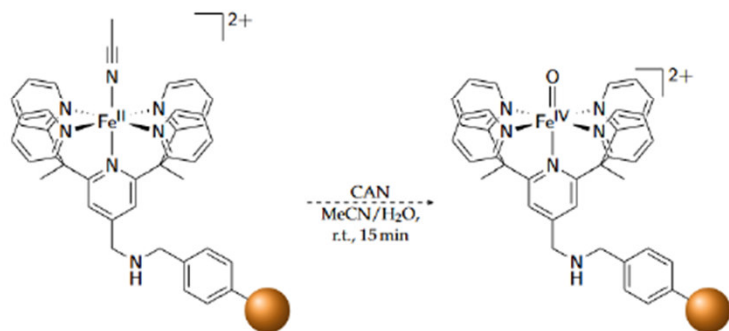
Immobilisation of high-valent iron(IV)-oxido complexes



Jan Kruse

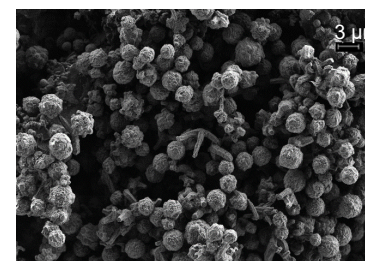
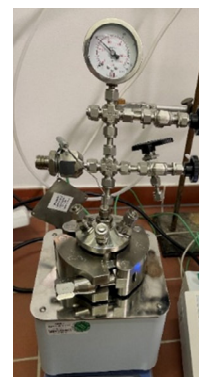
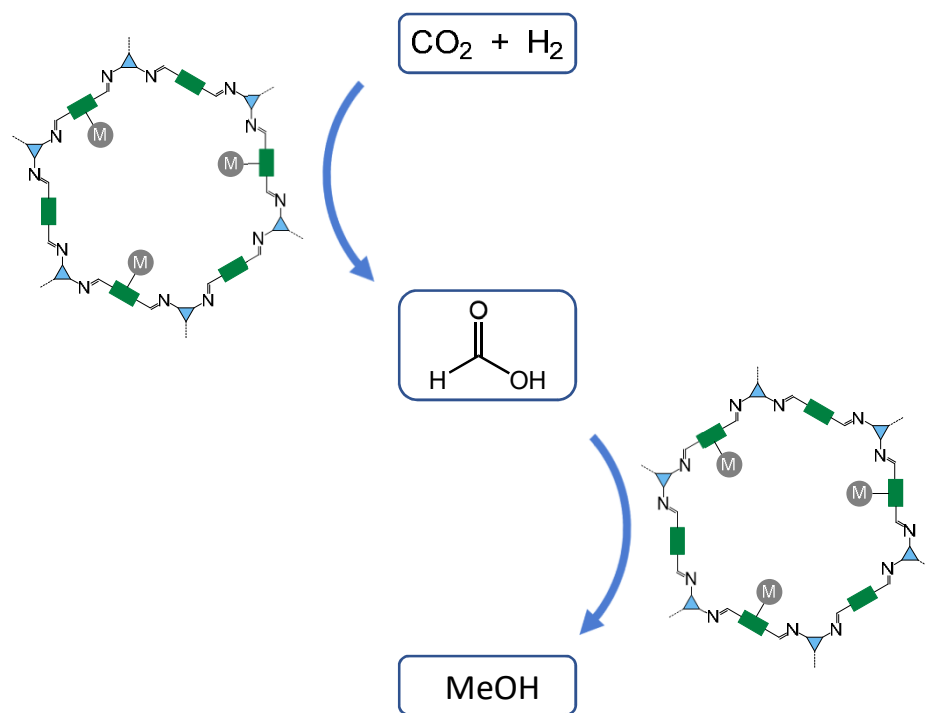
Bioinorganic chemistry – AK Daumann

DAUMANN
group



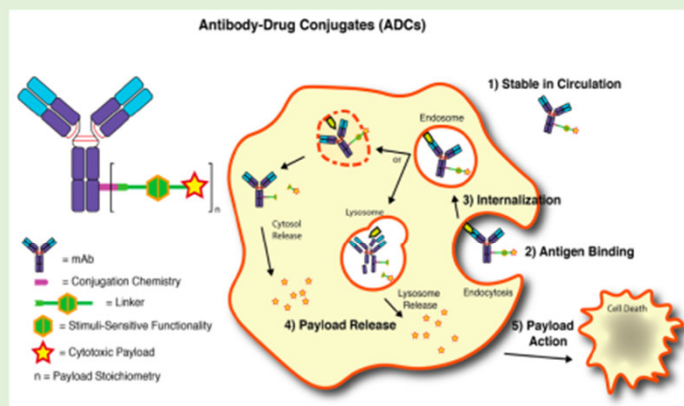
Covalent Organic Frameworks as Platforms for Carbon Dioxide Hydrogenation and Formic acid Disproportionation

by Julia Rauh (Lotsch group)

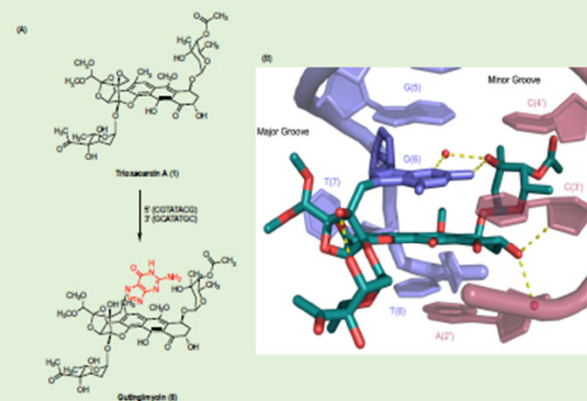


Synthesis of Trioxacarcin Drug-Linker Systems for Use in Antibody-Drug Conjugates

Preparation of this thesis in the research group of Prof. Dr. Andrew Myers, Harvard University
Under the supervision of Prof. Dr. Lena Daumann, LMU Munich



M. J. Gordon, M. Canakci, L. Li, J. Zhuang, B. Osborne, S. Thayumanavan, *Bioconjugate Chem.* **2015**, *26*, 2198-2215.



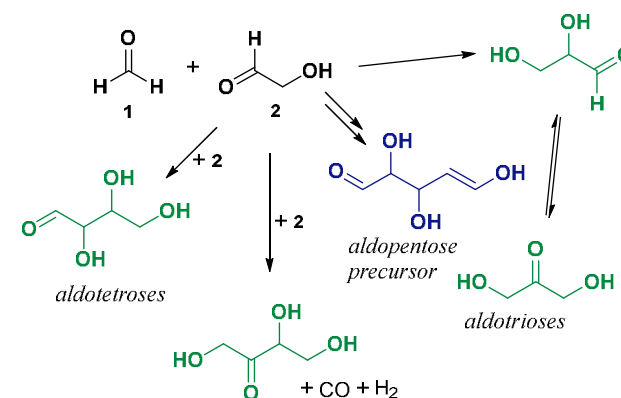
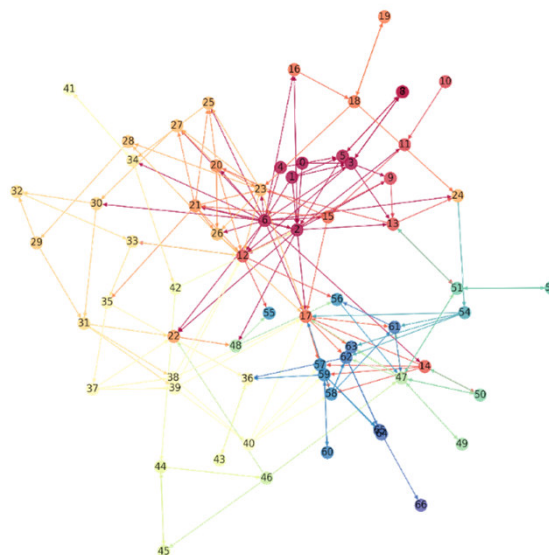
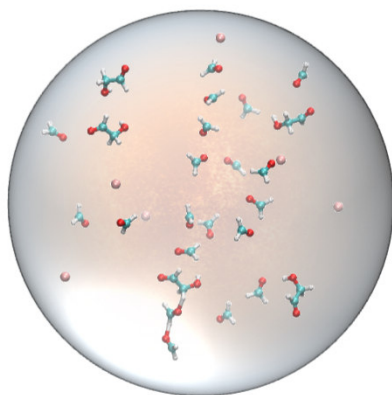
E. Magno, Doctoral thesis, Harvard, **2021**.
K. Pröpper, B. Dittrich, D. J. Smaltz, T. Magauer, A. G. Myers, *Bioorganic. Med. Chem.* **2014**, *24*, 4410-4413



Doreen Reuter
AK Daumann

Accelerated Reaction Network Exploration by Molecular Nanoreactor Simulations and Automated Processing

Alexandra Stan
AK Prof. Dr. C. Ochsenfeld



Enhanced Reactivity Molecular
Dynamics Simulations

Automated Processing and
Generation of Reaction Networks

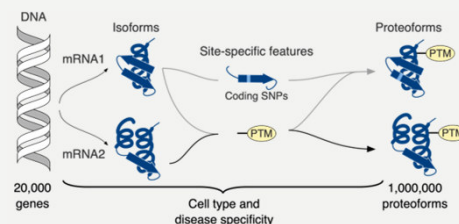
Selection of Plausible Reaction Paths

A. Stan, B. von der Esch, C. Ochsenfeld, *Journal of Chemical Theory and Computation* **2022**, 18, 6700.

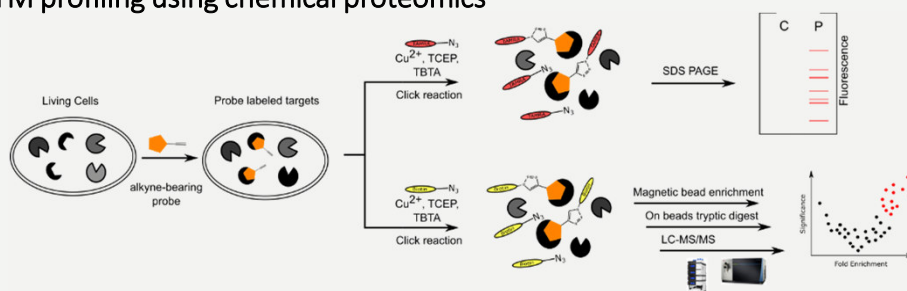
“Implementation of L-Gln-propargyl probe reveals a plethora of PTM targets in living cells”

Protein post-translational modifications (PTMs)

- Increase of proteome complexity
- Cell type / disease specificity
- Present in sub-stoichiometric amounts
- Enrichment is necessary
- Mass spectrometry – high-throughput

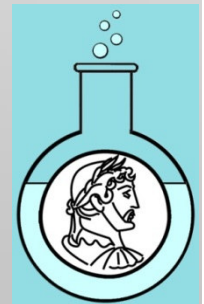


PTM profiling using chemical proteomics



Promotions-Preise in Höhe von 1.500 €
wurden für herausragende Leistungen verliehen an:

Dr. Lucien Eisenburger
Dr. Anna-Katharina Hatz
Henryk Laqua
Dr. Tim Schröder





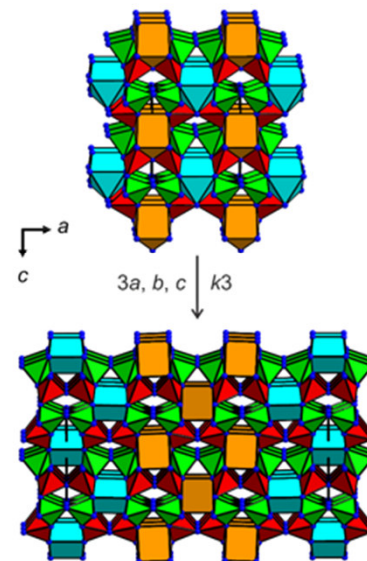
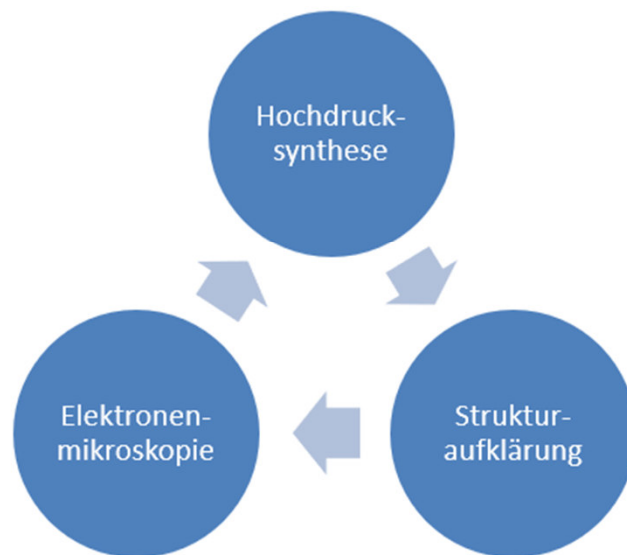
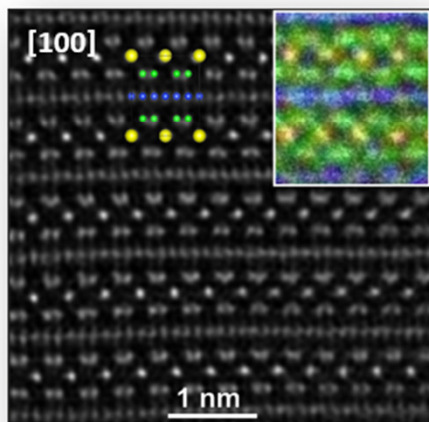
NH_4F -Assisted High-Pressure Synthesis of Novel Nitrides and Atomic-Resolution Chemical Mapping by STEM



Dr. Lucien Eisenburger
AK Schnick

Entdeckungen neuartiger Nitride durch harsche Reaktionsbedingungen: NH_4F -vermittelt, 1400°C , 80.000 bar.

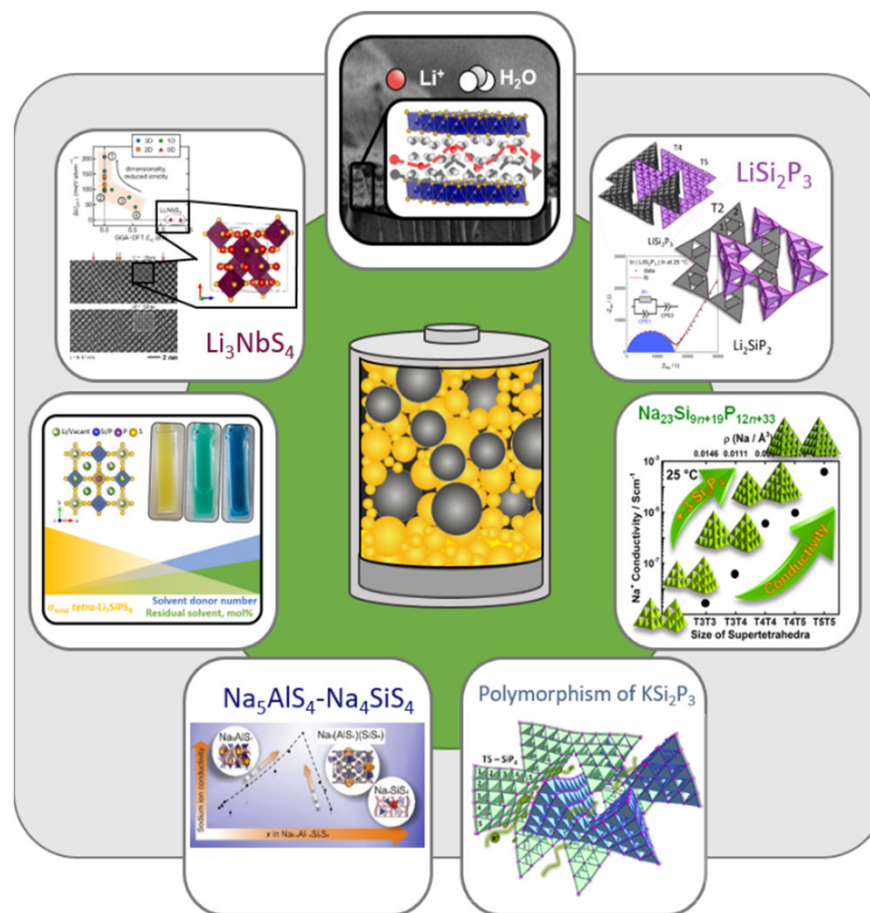
Aufklärung der räumlichen Atomanordnung durch hochintensive Röntgenstrahlung an Großforschungseinrichtungen (DESY, ESRF) sowie durch atomar aufgelöste Elektronenmikroskopie und energiedispersive Röntgenspektroskopie.



Dr. Anna-Katharina Hatz

Prof. Bettina V. Lotsch –
Nanochemistry

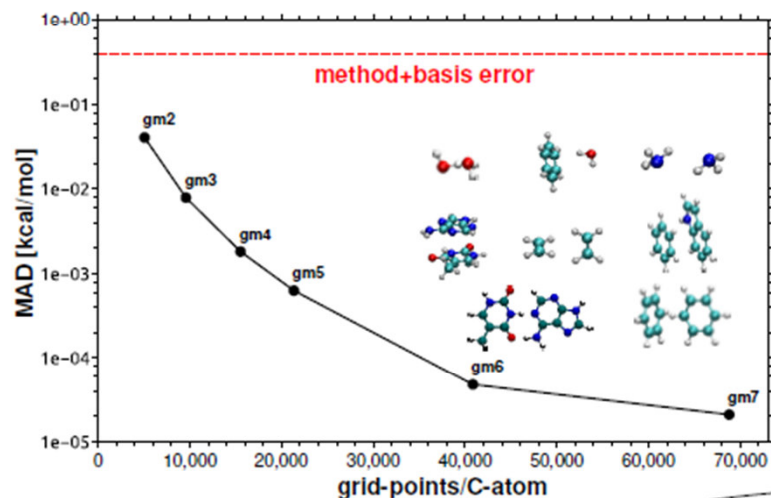
Solid electrolytes and sulfide-
based cathode materials for
Batteries



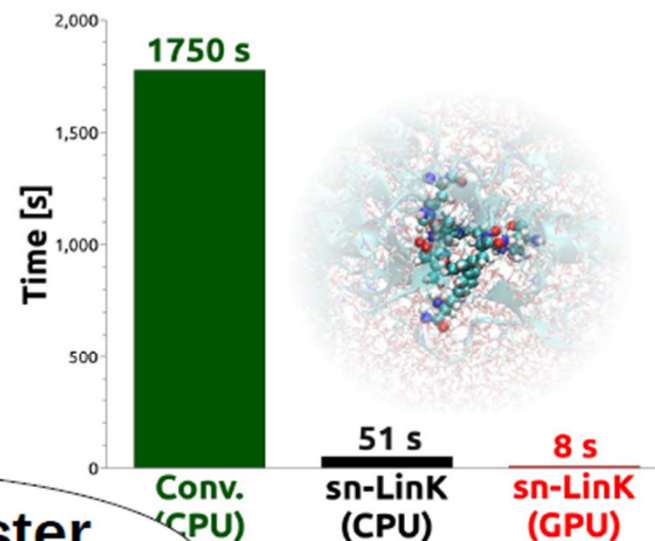
sn-LinK: Fast and Accurate Fock-Exchange

Henryk Laqua - AK Ochsenfeld

Grid-Error (S22)



Sirtuin-5/TZVPPD



100-1000 Faster
<0.01kcal/mol Error



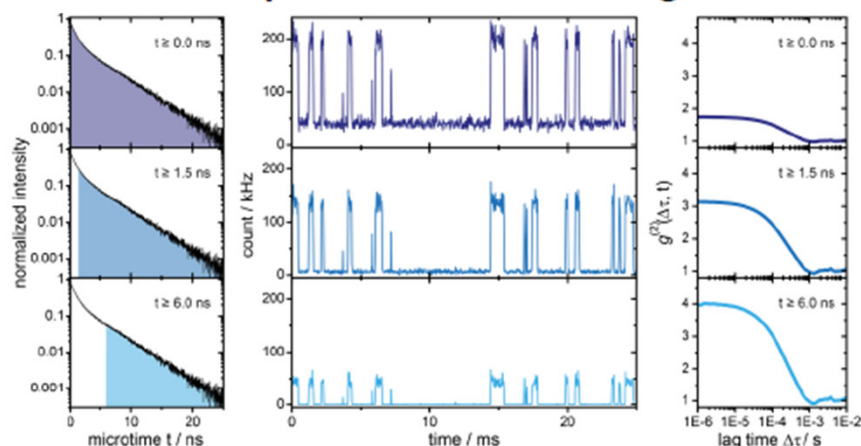
$$K_{\mu\nu} = \sum_{\lambda\sigma} P_{\lambda\sigma}(\mu\sigma|\lambda\nu)$$

$$\approx \sum_{\lambda\sigma g} w_g P_{\lambda\sigma} \chi_{\mu}(\mathbf{r}_g) \chi_{\sigma}(\mathbf{r}_g) (g|\lambda\nu)$$

$$(g|\lambda\nu) = \int d\mathbf{r} \frac{\chi_{\lambda}(\mathbf{r}) \chi_{\nu}(\mathbf{r})}{|\mathbf{r} - \mathbf{r}_g|}$$

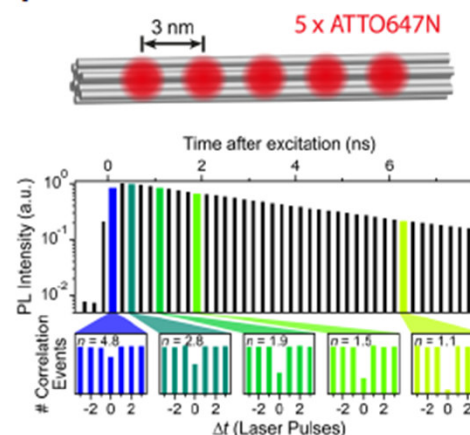
Intensity correlations are used to analyze intensity fluctuation and the photon statistics of quantum emitters.
Connecting lifetime information and intensity correlations gives new information for analyzing:

photon bunching



- reveals blinking mechanism
- recovers transition rates for a two state model

photon antibunching

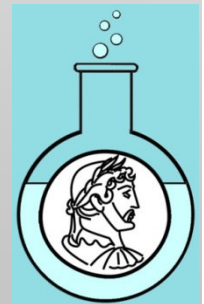


Dr. Tim Schröder
AK Tinnefeld

- reveals blinking mechanism for correct counting of emitters
- recovers number of emitters despite efficient annihilation
- yields annihilation rate constants

Einen mit 3.000 € dotierten Preis für
Nachwuchsgruppenleiter*innen erhielt

Dr. Evelyn Plötz

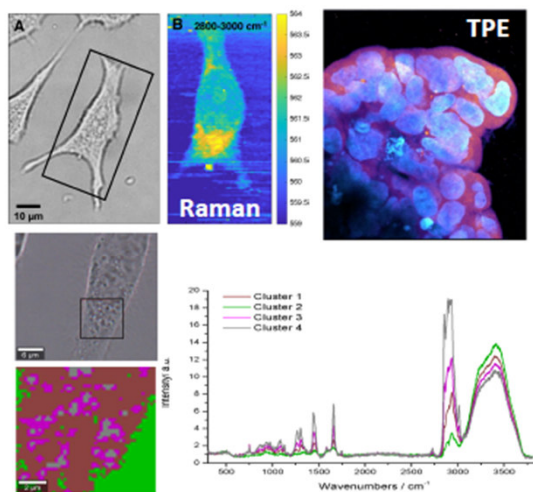




Dr. Evelyn Ploetz

Habilitandin
AK Lamb

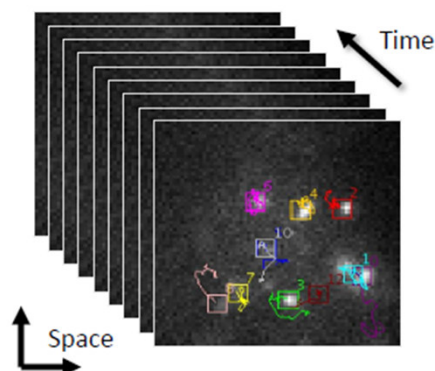
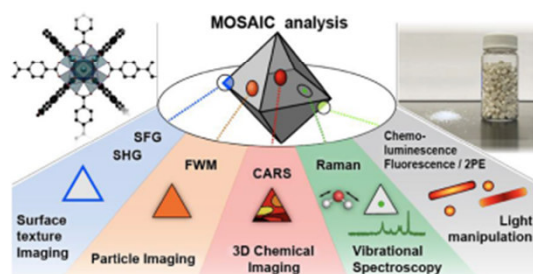
Imaging of transport processes: *Reactions in time and space.*



Ploetz, Zimpel et al. *Adv. Mater.* (2020)
Guo et al. *Adv. Funct. Mater.* (2021)
Illes et al. *iSciences* (2021) / *Angewandte* (2021),

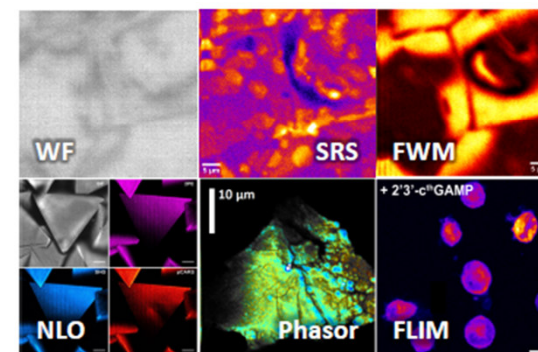
Multimodal, correlative imaging and spectroscopy

Methods development: MOSAIC *Correlative, multi-modal optical spectroscopy and imaging*

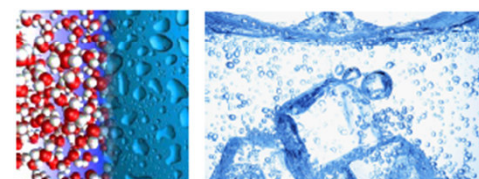


Fuchs et al. *Adv. Mater.* (2022) / Fuchs, et al. (Under review)

Application of MOSAIC: *Host-guest interactions in advanced materials*



Water harvesting



Gas uptake and transport in porous materials

Girard et al. *Environ. Pollut.* (2021) / Krause et al. *ACS Nano* (2021),
Andreo et al. *JACS* (2022) / Canossa et al. *Nat. Rev. Mater.* (2022) /
Veth et al. *ChemBioChem* (2022) /

Die Römer-Stiftung sowie
die Dozentinnen und Dozenten der
Departments Chemie und Biochemie
gratulieren den Preisträgern und
Preisträgerinnen herzlich!