Philipps Universität Marburg

Fachbereich Chemie

Kurzversion der wissenschaftlichen Aktivitäten im Jahr 2020

Diese Übersicht ist in einem neuen Format unter Mitwirkung der Lehrenden des Fachbereichs Chemie vom Dekanat des Fachbereichs Chemie der Philipps-Universität Marburg, Hans-Meerwein-Straße 4, 35032 Marburg, zusammengestellt.

Die Tradition jährlicher Berichte über die wissenschaftlichen Aktivitäten des Fachbereichs Chemie – und früher der Chemischen Institute - geht bis auf das Jahr 1887 zurück (siehe Chronik der Königlich-Preußischen Universität, Marburg, **1887**)

Nach der Aufstellung der einzelnen Fachgebiete und Lehrenden findet sich abschließend die Publikationsliste des gesamten Fachbereichs.

Marburg, im Mai 2021

Inhalt

Analytische Chemie

Apl. Prof. Dr. Ute Pyell

Publikationen[1]

1. Rageh, A. H., Abdel-Aal, F. A. M. & Pyell, U. Optimization of a sensitive and robust strategy for micellar electrokinetic chromatographic analysis of sofosbuvir in combination with its co-formulated hepatitis C antiviral drugs. *Journal of chromatography. A* **1616,** 460795; 10.1016/j.chroma.2019.460795 (2020).

Prof. Dr. Andreas Seubert

Publikationen[2,3,4]

1. Warmbold, B. *et al.* Two MarR-Type Repressors Balance Precursor Uptake and Glycine Betaine Synthesis in Bacillus subtilis to Provide Cytoprotection Against Sustained Osmotic Stress. *Frontiers in microbiology* **11,** 1700; 10.3389/fmicb.2020.01700 (2020).
2. Rath, H. *et al.* Management of Osmoprotectant Uptake Hierarchy in Bacillus subtilis via a SigB-Dependent Antisense RNA. *Frontiers in microbiology* **11,** 622; 10.3389/fmicb.2020.00622 (2020).
3. Mais, C.-N. *et al.* Degradation of the microbial stress protectants and chemical chaperones ectoine and hydroxyectoine by a bacterial hydrolase-deacetylase complex. *The Journal of biological chemistry* **295,** 9087–9104; 10.1074/jbc.ra120.012722 (2020).

Masterarbeiten

1. Schmitt, Matthias:
   Entwicklung modular funktionalisierbarer stationärer Phasen für die Ionenchromatographie

2. Lorenz, Sabrina Galaxina:
   Vergleich verschiedener Betriebsmodi des ICP-MS zur Quantifizierung von Nukleotiden mittels Phosphor-Detektion

Dissertationen

1. Bohra, Lea:
   Untersuchungen zur Hydrophilie und Selektivität polymerer stationärer Phasen für die Ionenaustauschchromatographie

Patente

1. Method for producing a hydrophilic surface on PS/DVB copolymer particles
   Seubert, Andreas; Tripp, Jonathan Sebastian; Aeschlimann, Rudolf; Ott, Michael; Brand, Bastian
   From PCT Int. Appl. (2020), WO 2020208026 A1 20201015.
   From Eur. Pat. Appl. (2020), EP 3721998 A1 20201014.

Prof. Dr. Ulrich Tallarek

Publikationen[5–12]

1. Hochstrasser, J. *et al.* Morphology-transport relationships for SBA-15 and KIT-6 ordered mesoporous silicas. *Physical chemistry chemical physics : PCCP* **22,** 11314–11326; 10.1039/d0cp01861a (2020).
2. Kohns, R. *et al.* In situ synthesis and characterization of sulfonic acid functionalized hierarchical silica monoliths. *J Sol-Gel Sci Technol* **96,** 67–82; 10.1007/s10971-020-05383-z (2020).
3. Svidrytski, A., Hlushkou, D., Thommes, M., Monson, P. A. & Tallarek, U. Modeling the Impact of Mesoporous Silica Microstructures on the Adsorption Hysteresis Loop. *J. Phys. Chem. C* **124,** 21646–21655; 10.1021/acs.jpcc.0c07571 (2020).
4. Haas, C. P., Biesenroth, S., Buckenmaier, S., van de Goor, T. & Tallarek, U. Automated generation of photochemical reaction data by transient flow experiments coupled with online HPLC analysis. *React. Chem. Eng.* **5,** 912–920; 10.1039/d0re00066c (2020).
5. Baranau, V. & Tallarek, U. Relaxation times, jamming densities, and ideal glass transition densities for hard spheres in a wide range of polydispersities. *AIP Advances* **10,** 35212; 10.1063/1.5140365 (2020).
6. Gritti, F., Hlushkou, D. & Tallarek, U. Multiple-open-tubular column enabling transverse diffusion. Part 1: Band broadening model for accurate mass transfer predictions. *Journal of chromatography. A* **1625,** 461325; 10.1016/j.chroma.2020.461325 (2020).
7. Gritti, F., Hochstrasser, J., Svidrytski, A., Hlushkou, D. & Tallarek, U. Morphology-transport relationships in liquid chromatography: Application to method development in size exclusion chromatography. *Journal of chromatography. A* **1620,** 460991; 10.1016/j.chroma.2020.460991 (2020).
8. Reinhardt, H. *et al.* Nanoscaled Fractal Superstructures via Laser Patterning—A Versatile Route to Metallic Hierarchical Porous Materials. *Adv. Mater. Interfaces* **8,** 2000253; 10.1002/admi.202000253 (2021).

Masterarbeiten

1. Biesenroth, Simon:
   Anwendung von Multiple Heart-Cutting Ventilen in zweidimensionalen Reaktions–Analytik Systemen auf transiente Flow-Chemie Experimente

2. Karstens, Sarah:
   Tomography-based reconstruction and morphological analysis of Li-ion all-solid-state battery cathodes

3. Pyschik, Markus:
   Catalysis under spatial confinement: Olefin metathesis studies with continuous-flow microreactors

4. Steinhoff, Andreas:
   Molecular dynamics investigation of nonlinear behavior in reversed-phase liquid chromatography with water–acetonitrile mobile phases

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1. Svidrytski, Artur:
   Diffusion, Adsorption und Reaktion in ungeordneten porösen Materialien

2. Kohns, Richard:
   Understanding sol-gel processing: Hierarchical silica monoliths towards applications in chemical reaction engineering

3. Haas, Christian:
   Automated generation and acquisition of reaction data: combining continuous-flow chemistry and analytical instrumentation

Anorganische Chemie

Dr. Magnus R. Buchner

Publikationen[13–24]

1. Müller, M. & Buchner, M. R. Beryllium triflates: synthesis and structure of BeL 2 (OTf) 2 (L=H 2 O, THF, n Bu 2 O). *Zeitschrift für Kristallographie - Crystalline Materials* **235,** 263–268; 10.1515/zkri-2020-0016 (2020).
2. Spang, N., Müller, M., Augustinov, W. & Buchner, M. R. Behavior of beryllium halides and triflate in acetonitrile solutions. *Zeitschrift für Naturforschung B* **75,** 939–949; 10.1515/znb-2020-0141 (2020).
3. Müller, M. & Buchner, M. R. Diphenylberyllium Reinvestigated: Structure, Properties, and Reactivity of BePh2 , (12-crown-4)BePh+ , and BePh3. *Chemistry (Weinheim an der Bergstrasse, Germany)* **26,** 9915–9922; 10.1002/chem.202000259 (2020).
4. Müller, M., Karttunen, A. J. & Buchner, M. R. Speciation of Be 2+ in acidic liquid ammonia and formation of tetra- and octanuclear beryllium amido clusters. *Chemical science* **11,** 5415–5422; 10.1039/D0SC01112F (2020).
5. Müller, M. & Buchner, M. R. Formation of amidoberyllates from beryllium and alkali metals in liquid ammonia. *Zeitschrift für Naturforschung B* **75,** 483–489; 10.1515/znb-2019-0215 (2020).
6. Buchner, M. R., Müller, M. & Spang, N. Probing the electronic boundaries between trigonal and tetrahedral coordination at beryllium. *Dalton transactions (Cambridge, England : 2003)* **49,** 7708–7712; 10.1039/D0DT01442G (2020).
7. Buchner, M. R. Beryllium-associated diseases from a chemist's point of view. *Zeitschrift für Naturforschung B* **75,** 405–412; 10.1515/znb-2020-0006 (2020).
8. Buchner, M. R. Beryllium coordination chemistry and its implications on the understanding of metal induced immune responses. *Chemical communications (Cambridge, England)* **56,** 8895–8907; 10.1039/D0CC03802D (2020).
9. Buchner, M. R., Dankert, F., Spang, N., Pielnhofer, F. & Hänisch, C. von. A Second Modification of Beryllium Bromide: β-BeBr2. *Inorganic chemistry* **59,** 16783–16788; 10.1021/acs.inorgchem.0c02832 (2020).
10. Dankert, F. *et al.* C–F Bond Cleavage Reactions with Beryllium, Magnesium, Gallium, Hafnium, and Thorium Halides. *Z. Anorg. Allg. Chem.* **646,** 1501–1507; 10.1002/zaac.201900297 (2020).
11. Fella, V. *et al.* Magnetic moment of Pb207 and the hyperfine splitting of Pb81+207. *Phys. Rev. Research* **2**; 10.1103/PhysRevResearch.2.013368 (2020).

12. Buchner, M. R. *et al.* Di- ortho -beryllated Carbodiphosphorane: A Compound with a Metal–Carbon Double Bond to an Element of the s-Block. *Organometallics* **39,** 3224–3231; 10.1021/acs.organomet.0c00434 (2020).

Bachelorarbeiten

1. Augustinov, William:
   Darstellung und Charakterisierung von Berylliumtriflaten

2. Blanc, Max:
   Synthese und Reaktivität von Berylliumorganylen in Dimethylsulfid

3. Sommer, Johannes:
   Untersuchung der Lewis-Acidität des Berylliums anhand von Lewis-Säure-Base-Addukten mit Beryllium(trispyrazolyl)borat-Komplexen

Dissertationen

1. Müller, Matthias:
   Die Chemie des Berylliums: Bio-Anorganische Grundlagenforschung

Prof. Dr. Stefanie Dehnen

Publikationen[25–38]

1. Peters, B., Reith, S. & Dehnen, S. A Methylated Oxo-Thio Stannate Cluster from a Non-Innocent Ionic Liquid. *Z. Anorg. Allg. Chem.* **646,** 964–967; 10.1002/zaac.202000037 (2020).
2. Hanau, K., Rinn, N. & Dehnen, S. Variations in the Interplay of Intermetallic and Metal Chalcogenide Units in Organotin-Copper Selenide Clusters. *Inorganic chemistry* **59,** 198–202; 10.1021/acs.inorgchem.9b03173 (2020).
3. Peters, B., Krampe, C., Klärner, J. & Dehnen, S. Structural Expansion of Chalcogenido Tetrelates in Ionic Liquids by Incorporation of Sulfido Antimonate Units. *Chemistry (Weinheim an der Bergstrasse, Germany)* **26,** 16683–16689; 10.1002/chem.202003887 (2020).
4. Peters, B., Lichtenberger, N., Dornsiepen, E. & Dehnen, S. Current advances in tin cluster chemistry. *Chemical science* **11,** 16–26; 10.1039/C9SC04363B (2020).
5. Guggolz, L. & Dehnen, S. Systematic DFT Studies on Binary Pseudo-tetrahedral Zintl Anions: Relative Stabilities and Reactivities towards Protons, Trimethylsilyl Groups, and Iron Complex Fragments. *Chemistry (Weinheim an der Bergstrasse, Germany)* **26,** 11819–11828; 10.1002/chem.202001379 (2020).
6. Engel, A., Dewald, H., Reuter, A., Klippstein, J. & Dehnen, S. Protolysis of Amino Acid-Functionalized Tin Sulfide Clusters. *Eur. J. Inorg. Chem.* **2020,** 2809–2815; 10.1002/ejic.202000290 (2020).
7. Wolf, S., Wei, S., Klopper, W., Dehnen, S. & Feldmann, C. BMIm2Mn(CO)3(GeI3)3: Carbonyl Compound with an {MnGe3} Cluster Unit. *Inorganic chemistry* **59,** 12895–12902; 10.1021/acs.inorgchem.0c01948 (2020).
8. Geringer, E. *et al.* Trapping of ZnCl2 by bipyridyl-functionalized organotin sulfide clusters, and its effect on optical properties. *Chemical communications (Cambridge, England)* **56,** 4769–4772; 10.1039/D0CC01887B (2020).
9. Peters, B., Santner, S. & Dehnen, S. Dimensional Reduction of a Selenido Stannate Salt in Ionic Liquids to form 2D-K 2 Sn 2 Se 5 , a Direct Heavy Analogue of an Oxo Silicate. *Z. Anorg. Allg. Chem.* **646,** 1466–1469; 10.1002/zaac.202000162 (2020).
10. Klee, B. D. *et al.* Generating large starting configurations for molecular Reverse Monte Carlo modelling of an unique non-linear optical amorphous solid. *J. Phys. Commun.* **4,** 35004; 10.1088/2399-6528/ab756c (2020).
11. Duchardt, M., Diels, M., Roling, B. & Dehnen, S. Flow-Oriented Synthesis of Li 2 S and Li 3 PS 4 ·3THF: Opening Up a Completely Solvent-Based Solid Electrolyte Value Chain. *ACS Appl. Energy Mater.* **3,** 6937–6945; 10.1021/acsaem.0c01007 (2020).

12. Pan, F., Guggolz, L., Weigend, F. & Dehnen, S. Atom Exchange Versus Reconstruction: (Gex As4-x)x- (x=2, 3) as Building Blocks for the Supertetrahedral Zintl Cluster Au6 (Ge3 As)(Ge2 As2)3 3. *Angewandte Chemie (International ed. in English)* **59,** 16638–16643; 10.1002/anie.202008108 (2020).
13. Eulenstein, A. R. *et al.* Stabilizing a metalloid {Zn12} unit within a polymetallide environment in K2Zn20Bi166. *Nature communications* **11,** 5122; 10.1038/s41467-020-18799-6 (2020).
14. Wilson, R. J., Weigend, F. & Dehnen, S. The Arachno-Zintl Ion (Sn5 Sb3)3- and the Effects of Element Composition on the Structures of Isoelectronic Clusters: Another Facet of the Pseudo-Element Concept. *Angewandte Chemie (International ed. in English)* **59,** 14251–14255; 10.1002/anie.202002863 (2020).

Editorials[244–248]:

1. Chan, J. Y., Dehnen, S. The Benefit of Leaving Your Synthetic Comfort Zone: Reactions in Uncommon Media. *Inorg. Chem.* **59**, 17823–17825; 10.1021/acs.inorgchem.0c03428 (2020).

2. Beck-Sickinger, A.G., Carell, T., Dehnen, S., Leitner, W., Schreiner, P. R., Wennemers, H. From Scientists to Scientists—Moving Angewandte into the Future. *Angew. Chem. Int. Ed.* **59**, 12548–12549; 10.1002/anie.202008469 (2020).

3. Buonsanti, R., Buriak, J. M., Cabana, L., Cossairt, B. M., Dasog, M., Dehnen, S., Dempsey, J. L., Grace, A. M., Koziej, D., McElwee-White, L., Thomas, C., Yang, J. Y. Checking in with Women Materials Scientists During a Global Pandemic: May 2020. *Chem. Mater.* **32**, 4859–4862; 10.1021/acs.chemmater.0c02211 (2020).

4. Dehnen, S., Bart, S. C., Tolman, W. B. The Art of Synthesis: From a (Social) Distance. *Inorg. Chem.* **59**, 5791–5795; 10.1021/acs.inorgchem.0c01090 (2020).

5. Kanatzidis, M., Sun, H., Dehnen, S. Bismuth—The Magic Element. *Inorg. Chem.* **59**, 3341–3343; 10.1021/acs.inorgchem.0c00222 (2020).

Bachelorarbeiten

1. Heimel, Alexander:
   Untersuchung zur templatgesteuerten Synthese von Telluridomerkuraten in ionischen Flüssigkeiten

2. Hoffmann, Kevin:
   Reaktivität von binären ZINTL-Anionen der Gruppe 14/15 gegenüber 3d-Übergangsmetall(II)-bis(hexamethyldisilazanid)komplexen

3. Dewald, Hendrik:
   Untersuchung zur Synthese von bioorganisch funktionalisierten Tetrelchalkogenidclustern mit Adamantanstruktur

4. Krampe, Chloé:
   Untersuchungen zum Ionothermalen Einbau von Pentelatomen in Sulfidiometallate

5. Ringelband, Sven:
   Synthese von ternären Organotetrelchalkogenid Clustern mit adamantanartigem Grundgerüst

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1. Hanau, Katharina:
   Synthese und Eigenschaften von Organozinnselenid- und Organosiliciumsulfid-Clustern

2. Peters, Bertram Georg Helmut:
   Synthese und Funktionalisierung von Verbindungen mit binären, ternären und quarternären Chalkogenido-Metallat-Anionen

Prof. Dr. Carsten von Hänisch

Publikationen[21,22,39–47]

1. Buchner, M. R., Dankert, F., Spang, N., Pielnhofer, F. & Hänisch, C. von. A Second Modification of Beryllium Bromide: β-BeBr2. *Inorganic chemistry* **59,** 16783–16788; 10.1021/acs.inorgchem.0c02832 (2020).
2. Dankert, F. *et al.* C–F Bond Cleavage Reactions with Beryllium, Magnesium, Gallium, Hafnium, and Thorium Halides. *Z. Anorg. Allg. Chem.* **646,** 1501–1507; 10.1002/zaac.201900297 (2020).
3. Dankert, F., Erlemeier, L., Ritter, C. & Hänisch, C. von. On the molecular architectures of siloxane coordination compounds: (re-)investigating the coordination of the cyclodimethylsiloxanes D n (n = 5–8) towards alkali metal ions. *Inorg. Chem. Front.* **7,** 2138–2153; 10.1039/D0QI00109K (2020).
4. Jost, M. *et al.* Coordination polymers of alkali metal cyclosiloxazanides with one- and two-dimensional structures. *Dalton transactions (Cambridge, England : 2003)* **49,** 5787–5790; 10.1039/D0DT01060J (2020).
5. Glowatzki, J. *et al.* Ga(N,P) Growth on Si and Decomposition Studies of the N–P Precursor Di- tert -butylaminophosphane (DTBAP). *Organometallics* **39,** 1772–1781; 10.1021/acs.organomet.0c00078 (2020).
6. Dankert, F., Feyh, A. & Hänisch, C. von. Chalcogen Bonding of SO 2 and s-Block Metal Iodides Near Room Temperature: A Remarkable Structural Diversity. *Eur. J. Inorg. Chem.* **2020,** 2744–2756; 10.1002/ejic.202000299 (2020).
7. Balmer, M. & Hänisch, C. von. Synthesis of the Cyclic Group 13 Phosphinidenides [(NHC)PMCl 2] 2 (NHC = SIMes, SIDipp; M = Al, Ga). *Z. Anorg. Allg. Chem.* **646,** 648–652; 10.1002/zaac.201900248 (2020).
8. Deubner, H. L., Koester, M., Haenisch, C. von & Kraus, F. Synthesis and crystal structure of tri-ethyl-ammonium hexa-bromido-uranate(IV) di-chloro-methane monosolvate. *Acta crystallographica. Section E, Crystallographic communications* **76,** 1587–1590; 10.1107/S205698902001169X (2020).
9. Fritz, M., Maser, L., Ringler, B., Hänisch, C. von & Langer, R. Small Chains of Main Group Elements by BH 3 Adduct Formation of t Bu 2 E-N(H)-E t Bu 2 (E = P, As). *Z. Anorg. Allg. Chem.* **646,** 992–998; 10.1002/zaac.202000034 (2020).
10. Ritter, C., Weigend, F. & Hänisch, C. von. Synthesis of a Molecule with Five Different Adjacent Pnictogens. *Chemistry (Weinheim an der Bergstrasse, Germany)* **26,** 8536–8540; 10.1002/chem.202002279 (2020).
11. Balmer, M., Franzke, Y. J., Weigend, F. & Hänisch, C. von. Low-Valent Group 14 Phosphinidenide Complexes ({SIDipp}P)2 M Exhibit P-M pπ-pπ Interaction (M=Ge, Sn, Pb). *Chemistry (Weinheim an der Bergstrasse, Germany)* **26,** 192–197; 10.1002/chem.201905061 (2020).

Bachelorarbeiten

1. Nitzsche, Joel David:
   Darstellung Donorstabilisierter 2,6-Diisopropylphenyl-substituierter Bismuthenium-Kationen
2. Rinow, Alina:
   Untersuchungen zur Darstellung von ternären Interpnictogenverbindungen

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1. Richter, Roman-Malte:
   Untersuchungen zur Darstellung von siliciumhaltigen Koordinationsverbindungen und potentiellen Präkursoren für die Halbleiterherstellung

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1. Köster, Marcel:
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2. Dankert, Fabian:
   Contributions to siloxane coordination chemistry and silicon based crown-ether analogues *via* s-block metal templated Si-O bond activation

Dr. Johanna Heine

Publikationen[48–52]

1. Möbs, J., Gerhard, M. & Heine, J. (HPy)2(Py)CuBi3I12, a low bandgap metal halide photoconductor. *Dalton transactions (Cambridge, England : 2003)* **49,** 14397–14400; 10.1039/D0DT03427D (2020).
2. Wagner, B. *et al.* Chemical Surface Reactivity and Morphological Changes of Bismuth Triiodide (BiI3) under Different Environmental Conditions. *Langmuir : the ACS journal of surfaces and colloids* **36,** 6458–6464; 10.1021/acs.langmuir.0c00740 (2020).
3. Dehnhardt, N., Paneth, H., Hecht, N. & Heine, J. Multinary Halogenido Bismuthates beyond the Double Perovskite Motif. *Inorganic chemistry* **59,** 3394–3405; 10.1021/acs.inorgchem.9b03287 (2020).
4. Dehnhardt, N. *et al.* Band Gap-Tunable, Chiral Hybrid Metal Halides Displaying Second-Harmonic Generation. *Chem. Mater.* **32,** 4801–4807; 10.1021/acs.chemmater.0c01605 (2020).
5. Dehnhardt, N., Berthold, C., Dollberg, K., Tambornino, F. & Heine, J. Synthesis and crystal structures of two layered Cu(I) and Ag(I) iodidometalates. *Zeitschrift für Kristallographie - Crystalline Materials* **235,** 269–273; 10.1515/zkri-2020-0021 (2020).

Bachelorarbeiten

1. Schipplick, Luca:
   Synthese und Charakterisierung neuer gemischter 14/15 Halogenidometallate

Masterarbeiten

1. Yang, Meng:
   Synthesis and Characterization of New Benzylammonium Halogenido Pentelates.

Dissertationen

1. Dehnhardt, Natalie
   Komplexe Halogenidometallate der Gruppe 15 - Struktur, Eigenschaften und neue Funktionalität

Prof. Dr. Florian Kraus

Publikationen[22,23,44,53–80]

1. Dankert, F. *et al.* C–F Bond Cleavage Reactions with Beryllium, Magnesium, Gallium, Hafnium, and Thorium Halides. *Z. Anorg. Allg. Chem.* **646,** 1501–1507; 10.1002/zaac.201900297 (2020).
2. Fella, V. *et al.* Magnetic moment of Pb207 and the hyperfine splitting of Pb81+207. *Phys. Rev. Research* **2**; 10.1103/PhysRevResearch.2.013368 (2020).
3. Deubner, H. L., Koester, M., Haenisch, C. von & Kraus, F. Synthesis and crystal structure of tri-ethyl-ammonium hexa-bromido-uranate(IV) di-chloro-methane monosolvate. *Acta crystallographica. Section E, Crystallographic communications* **76,** 1587–1590; 10.1107/S205698902001169X (2020).
4. Scheibe, B. *et al.* Difluorochloronium(III) Fluoridometallates – from Molecular Building Blocks to (Helical) Chains. *Eur. J. Inorg. Chem.* **2020,** 4483–4496; 10.1002/ejic.202000845 (2020).
5. Scheibe, B., Ivlev, S. I., Karttunen, A. J. & Kraus, F. Synthesis and Characterization of the Tetrafluoridochlorates(III) A [ClF 4] (A = K, Rb, Cs). *Eur. J. Inorg. Chem.* **2020,** 1319–1324; 10.1002/ejic.202000106 (2020).
6. Scheibe, B., Karttunen, A. J., Müller, U. & Kraus, F. Cs[Cl 3 F 10]: Eine Verbindung mit propellerförmigem [Cl 3 F 10] − -Anion, die im außergewöhnlichen A [5] B [5] -Strukturtyp kristallisiert. *Angew. Chem.* **132,** 18272–18276; 10.1002/ange.202007019 (2020).
7. Rudel, S. S., Karttunen, A. J. & Kraus, F. Rb 2 [U(NH 2) 6], a Rubidium Hexaamidouranate(IV) obtained from the Reaction of UI 3 with RbNH 2 in Anhydrous Ammonia. *Z. Anorg. Allg. Chem.* **646,** 1023–1029; 10.1002/zaac.202000086 (2020).
8. Wallauer, R. *et al.* Momentum-resolved observation of ultrafast interlayer charge transfer between the topmost layers of MoS2. *Phys. Rev. B* **102**; 10.1103/PhysRevB.102.125417 (2020).
9. Rudel, S. S., Deubner, H. L., Müller, M., Karttunen, A. J. & Kraus, F. Complexes featuring a linear N≡U≡N core isoelectronic to the uranyl cation. *Nature chemistry* **12,** 962–967; 10.1038/s41557-020-0505-5 (2020).
10. Rudel, S. S., Graubner, T., Karttunen, A. J. & Kraus, F. Reactions in Anhydrous Liquid Ammonia: Syntheses and Crystal Structures of [M (NH 3) 8]I 2 (M = Eu, Yb) with Bicapped Trigonal-Prismatic Octaammine Lanthanoid(II) Cations. *Z. Anorg. Allg. Chem.* **646,** 1396–1402; 10.1002/zaac.202000181 (2020).
11. Stene, R. E., Chemnitz, T., Petry, W. & Kraus, F. Reductive photo-chemical separation of the hexafluorides of uranium and molybdenum. *Journal of Fluorine Chemistry* **240,** 109655; 10.1016/j.jfluchem.2020.109655 (2020).

12. Stene, R. E., Scheibe, B., Petry, W. & Kraus, F. Synthesis and Characterization of the Hexafluoridomolybdates(V) A [MoF 6] (A = Li - Cs). *Eur. J. Inorg. Chem.* **2020,** 1834–1843; 10.1002/ejic.202000141 (2020).
13. Turner, M. *et al.* Experimental study of wakefields driven by a self-modulating proton bunch in plasma. *Phys. Rev. Accel. Beams* **23**; 10.1103/PhysRevAccelBeams.23.081302 (2020).
14. Scheibe, B., Patzschke, M., März, J., Conrad, M. & Kraus, F. A Molecular Octafluoridoneptunate(IV) Anion in (NH 4) 4 [NpF 8] and Theoretical Investigations of the [M F 8] 4– System (M = Th – Bk). *Eur. J. Inorg. Chem.* **2020,** 3753–3759; 10.1002/ejic.202000565 (2020).
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2. Graubner, Tim:
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3. Möbs, Martin:
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Dr. Frank Tambornino

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1. Anna Pachkovska:
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1. Clemens Trost:
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2. Korf, Lukas:
   Protein chemical and biophysical studies on non-canonical thioesterase domains of NRPS

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2. Krämer, Kai:
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   Qu, Hui:
   Solid Phase PCR and Femtoliter Array PCR

3. Griesel, Silvana:
   Correlation of the physical and functional interactions between PolA, ExoR and DnaN in Bacillus subtilis

4. Kilb, Alexandra:
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Prof. i. R. Dr. Bernhard Kadenbach (†)

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Dr. Barbara Waidner

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1. Lauer, Johannes:
   Interaktionsstudien zwischen Zellwand-Modifizierenden Enzymen aus *Helicobacter pylori*

Chemische Biologie

Prof. Dr. Eric Meggers

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1. Tan, Y. *et al.* Asymmetric Ring-Closing Aminooxygenation of Alkenes en Route to 2-Amino-1,3-Diols with Vicinal Stereocenters. *Organic letters* **22,** 6653–6656; 10.1021/acs.orglett.0c02452 (2020).
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1. Zhou, Wenjian:
   Synthesis of chiral-at-ruthenium catalyst and its application in asymmetric cyclopropanation

Dissertationen

1. Tan, Yuqi:
   Asymmetric catalysis with Chiral-at-Metal-Ruthenium and Tridium complexes

2. Zhou, Zijun:
   Asymmetric intramolecular C-H aminations with Chiral-at Ruthenium complexes

Prof. Dr. Dr. h. c. Manfred T. Reetz (Hans Meerwein-Senior-professur)

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Prof. Dr. Olalla Vázquez

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1. Abbas, Sajediabkenar:
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Dissertationen

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Organische Chemie

Prof. Dr. Armin Geyer

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1. Vaupel, Theresa:
   NEGISHI-Kreuzkupplung zur Synthese von Tryptophan-Derivaten

2. Wiederhold, Daniel:
   Synthese von β,β-Diaryl-α-aminosäuren zur Synthese von Antimikrobiellen Peptiden

Dissertationen

1. Nicke, Lennart:
   Die Synthese von β,β-Diaryl-α-Aminosäurehybriden zur Modifikation von Peptidhormonen

Prof. Dr. Ulrich Koert

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1. Volte, Timo Tjark:
   Beiträge zur Synthese eines partiell fluorierten DNTTs

2. Olszewska, Weronika:
   Untersuchungen zur Regioselektivität der Allylsubstitution an Fluorolefinen.

3. Burchert, Fabiana:
   Beiträge zur Totalsynthese von Preussochromon E und F

4. Thelemann, Jordan:

Synthese von bikfunkitonalisierten Cyclooctinen: Untersuchung der Hydrazonbildung und 1,3-dipolaren Cycloaddition zur additivfreien Multilagensynthese

5. Kolar, Fabian:
   Beiträge zur Totalsynthese von Preussochromon A

6. Janke, Kjell:
   Beiträge zur Synthese eines Testsystems bei der Totalsynthese von Collinolacton.

Masterarbeiten

1. Zhang, Yingling:
   Synthetic Studies of (E)-3-Fluoroallylic Alcohols.

2. Schmalz, Veronika:
   Photochemische Synthese von Perinaphthanen und Proaporphin-Alkaloid-Gerüsten.

3. Ullrich, Jana Christina:
   Untersuchungen zur Totalsynthese von Proaporphin-Alkaloiden mit photochemischem Schlüsselschritt.

Dissertationen

1. Hofmann, Philipp Eckhardt:
   Synthese eines teilfuorierten Pentacens und Tetracens sowie ein Beitrag zur Synthese Stickstoff-haltiger Pentacene mit alternierendem Substitutionsmuster

2. Zygalsi, Lukas:
   Synthese und Reaktivität flourierter Allylalkohole

3. Kerste, Eric:
   Totalsynthese von Preussochrom D und Beiträge zur Toitalsynthese von Preussochrom E und F

4. Susnik, Peter:
   Studien zur Totalsynthese von Pristinamycin II_A und Synthese biologischer Synthons

Prof. Dr. Alicia Casitas Montero

Masterarbeiten

1. Bothe, Daniel:
   Synthesis of chiral cyclopentadienyl iron complexes for asymmetric catalysis

apl. Prof. Dr. Michael Schween

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1. Magull, Sarah:
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2. Pröhm. Niklas:
   Nucleophile Additionsreaktionen an Carbonylverbindungen – Entwicklung neuer Modellversuche für das gymnasiale Lehramt und die Oberstufe

Prof. Dr. Paultheo von Zezschwitz

Physikalische Chemie

Prof. Dr. Michael Gottfried

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Bachelorarbeiten

1. Nußhär, Ruben:
   Reaktionen von dünnen Corrol- und Porphyrinschichten mit Magnesium im Ultrahochvakuum: Untersuchungen mittels Photoelektronenspektroskopie

Masterarbeiten

1. Heuplick, Lukas:
   Untersuchung der Reaktivität von PbTPP auf der Cu(111)- und Au(111)-Oberfläche

2. Chen, Mengyi:
   Hierarchical on-surface synthesis of carbon-based nanostructures with halogen substituted molecules

3. Neuhaus, Leonard:
   Metallierung von 3H-HEDMC auf der Au(111)-Oberfläche mit Hauptgruppenmetallen

Dissertationen

1. Krug, Claudio Kristoffer
   Structure and Reactivity of Aromatic Molecules on Metal Single-Crystal Surfaces and at Metal/Organic Interfaces

2. Kachel, Stefan Renato:
   Investigations of Metal/Organic Interfaces and Metalation Reactions of Organic Semiconductors

Prof. Dr. Norbert Hampp

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1. Winkler, Jacqueline:
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Dissertationen

1. Riedel, René:
   Moderne Analysemethoden zur Charakterisierung funktioneller Nanomaterialien

2. Pfeifer, Erik:
   Wechselwirkung und Zusammenhang der zugrundeliegenden Mechanismen von LIPSS und optischer Pinzette

apl. Prof. Dr. Wolf-Christian Pilgrim

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Staatsexamensarbeiten

1. Marc Zimmermann
   Messung der Primärstrahlintensität einer Au-Röntgenanode

Masterarbeiten

1. Jonathan Isbert Link Vasco, B.Sc.
   Strukturbestimmung eines Chalkogenidglases der Zusammensetzung $Ga_8Sb_{27}Se_{65}$ mit Hilfe von RMC-Simulationen

Disserationen

1. Klee, Benjamin:
   Strukturaufklärung in komplexen amorphen Systemen mittels Revers-Monte-Carlo-Simultationen

apl. Prof. Dr. Daniel Rhinow

Publikationen[189,190,196]

1. Dasbach, M. *et al.* Assembling Carbon Nanotube Architectures. *ACS nano* **14,** 8181–8190; 10.1021/acsnano.0c01606 (2020).
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7. Cronau, M., Kroll, M., Szabo, M., Sälzer, F. & Roling, B. Thickness-Dependent Impedance of Composite Battery Electrodes Containing Ionic Liquid-Based Electrolytes. *Batteries & Supercaps* **3,** 611–618; 10.1002/batt.202000023 (2020).
8. Badur, S. *et al.* Voltage- and Frequency-Based Separation of Nanoscale Electromechanical and Electrostatic Forces in Contact Resonance Force Microscopy: Implications for the Analysis of Battery Materials. *ACS Appl. Nano Mater.* **3,** 7397–7405; 10.1021/acsanm.0c00989 (2020).
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Bachelorarbeiten

1. Sartor, Janis:
   Untersuchung der Eigenschaften von lösungsbasiert synthetisierten Argyrodit Li_6PS_5Br

2. Marx, Anna:
   Entwicklung eines neuen Festkörperbatteriemessstandes

3. Upmeier, Till-Bjarne:
   Untersuchungen des Transports polarer und geladener Redoxmoleküle durch die SEI in Lithium-Ionen-Batterien

4. Seignou, Noella:
   Untersuchung der Tortuositäten von Festkörperbatteriekathoden auf Basis von β-LPS oder $2Li_3PS_4 \cdot LiI$

5. Xu, Yang:
   Elektrochemische und materialwissenschaftliche Untersuchungen der ionischen Leitfähigkeit des Festkörperelektrolytsystems $(1x)Li_3PS_4+xLiI$

6. King, Kester:
   Untersuchung neuer Konzepte für eine druckstabile Festkörperbatteriezelle

7. Lange, Fabio:
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8. Mekontso Ngaffo, Joelle:
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9. Weber, Paul:
   Quantitative Piezoantwort-Rasterkraftmikroskopie unter Zuhilfenahme eines theoretischen Modells der Federbalkendynamik

10. Loresch, Michael:
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11. Albers, Finn:
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1. Krauß, Falk:
   Bildung und Charakterisierung einer Festelektrolyt-Interphase auf der prismatischen Oberfläche einer HOPG-Elektrode

2. Ma, Xiaoqing:
   Metal-Metal Oxide Support Effects on Electrochemical Water Splitting

3. Yusim, Yuriy:
   Untersuchungen an Modell-Festelektrolyt-Interphasen in Lithium-Ionen-Akkus mittels in situ-Shell-Isolated Nanoparticle Enhanced RAMAN-Spectroscopy

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1. Duchardt, Marc:
   Fundamental and Applied Studies Towards the Development of All-Solid-State Batteries Based on Sulfide-Based Alkali-Ion Conductors

2. Pfeifer, Sandra:
   Ladungs- und Massentransport in lithiumbasierten Batterien: korrelierte Ionenbewegung und Elektronentransportmechanismen

3. Förster, Melanie:
   Untersuchung der Eignung von Nanopartikeln verstärkter RAMAN-Spektroskopie zur Charakterisierung der SEI in Batterien

4. Kranz, Sebastian:
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Prof. Dr. Karl-Michael Weitzel

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2. Botros, Demian:
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3. Janin, Laura:
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1. Plamper, Dominik:
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1. Kreuz, Oliver
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