GESELLSCHAFT DEUTSCHER CHEMIKER

GDCh

GDCH-Vortragsankündigung **6.12.2021** – **Hybrid-Format**

H46 17 Uhr c.t. (Platzangebot unter Einhaltung der 1.5 m Regel!)

Zoom-call: https://uni-regensburg.zoom.us/j/69555801005?pwd=Qmppa3pUMmtQL1FNZkovUjloSWFSQT09

Meeting-ID: 695 5580 1005; Kenncode: 486033

Photoacids - A unique combination of photochemistry and fluorescence

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Photoacids are aromatic alcohols or aniline derivatives which become more acidic upon electronic excitation by several orders of magnitude. Among the large variety of this kind of photochemically active molecules, pyrene-derivatives are our preferred substance class due to their visible luminescence and other beneficial fluorescence properties.[1] As the change of the protonation state is associated with a change of the emission color, dual emissive probes can be designed e.g. as enzyme substrates, and up to four emission colors are realizable.[2]

In my presentation, I will give an overview about our synthetic design and applications ranging from physicochemical fundamentals of the elementary reaction steps[3-9] to single-molecules experiments, dedicated to catalysis research,[10,11] and pH-sensitive nanoparticles.[12] Moreover, I will provide an outlook on future directions of the unique combination of photochemistry and fluorescence spectroscopy.

[1] B. Finkler et al., *Photochem. Photobiol. Sci.* **2014**, *13*, 548.
[2] B. Finkler et al., *Photochem. Photobiol. Sci.* **2016**, *15*, 1544.
[3] C. Spies et al., *Phys.Chem.Chem.Phys.* **2013**, *15*, 19893.
[4] C. Spies et al., *Phys.Chem.Chem.Phys.* **2014**, *16*, 9104.
[5] M. Vester et al *J. Phys. Chem. Lett.* **2015**, *6*, 1149.
[6] M. Vester et al., *Phys.Chem.Chem.Phys.* **2016**, *18*, 10281.
[7] D. Maus et al., *J. Phys. Chem. A* **2018**, *122*, 9025.
[8] A. Grandjean et al., *J. Phys. Chem. Lett.* **2021**, *12*, 1683.
[9] A. Grandjean et al., *ChemPhotoChem* **2021**, DOI: 10.1002/cptc.202100177.
[10] J. Menges et al., *Langmuir* **2019**, *35*, 2506.
[11] J. Menges et al.., *ChemCatChem* **2020**, *12*, 2630.
[12] A. Clasen et al., *RSC Adv.* **2019**, *9*, 35695.

Stand 26.11.2021, Achtung: kurzfristige Änderungen möglich, aktuelle Information auf: current lectures - GDCH UR (uni-regensburg.de); es gelten die Corona-Regeln der UR.