

Wintersemester 2025/26

Titel

Design and Serendipity in Fluorophore Chemistry

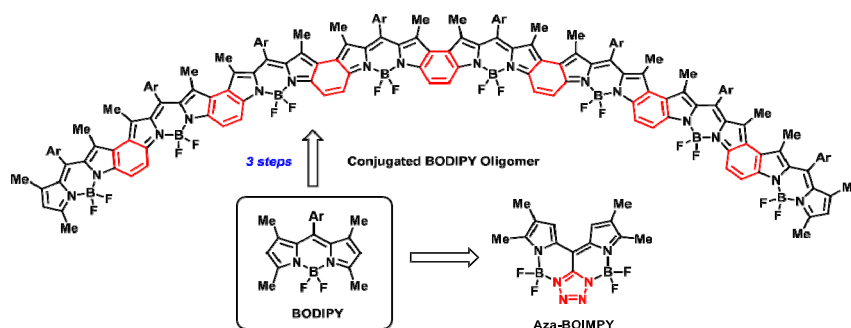
Vortragender

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Abstract

The rich chemistry of the BODIPY motif, together with its beneficial photophysical properties, has markedly boosted the popularity of this user-friendly fluorophore over the last few decades.^[1] The diversity of easily incorporated fluorescence modulation modes has set the stage for a variety of sensorically active species.

The talk describes which physical-organic rationalisation led to the development of the BOIMPY motif showing a significant red-shift with respect to the parent BODIPY.^[2] In addition, a simple synthetic route to oligomerized ethano-linked BODIPYs (up to an octamer) is presented which can be further oxidized to huge completely conjugated systems.^[3] Photophysical properties and biological properties are discussed by experimental and theoretical means.^[4] It is shown that the suprastructure of the oligomeric dyes plays a significant role for their absorption and emission properties and that the conjugated systems are interesting NIR fluorophores.



Scheme 1: BODIPY, (Aza-)BOIMPY and highly conjugated BODIPY oligomer.

[1] a) A. Loudet, K. Burgess, *Chem. Rev.* **2007**, *107*, 4891; b) G. Ulrich, R. Ziessel, A. Harriman, *Angew. Chem. Int. Ed.* **2008**, *47*, 1184.

[2] a) L. J. Patalag, P. G. Jones, D. B. Werz, *Angew. Chem. Int. Ed.* **2016**, *55*, 13340; b) L. J. Patalag, P. G. Jones, D. B. Werz, *Chem. Eur. J.* **2017**, *23*, 15903.

[3] a) L. J. Patalag, L. Phong Ho, P. G. Jones, D. B. Werz, *J. Am. Chem. Soc.* **2017**, *139*, 15104; b) A. Patra, L. J. Patalag, P. G. Jones, D. B. Werz, *Angew. Chem. Int. Ed.* **2021**, *60*, 747.

[4] L. J. Patalag, S. Ahadi, O. Lashchuk, P. G. Jones, S. Ebberhaus, D. B. Werz, *Angew. Chem. Int. Ed.* **2021**, *60*, 8766–8771.

Ort

Chemie, HS1 – Campus Nord, Otto-Hahn-Straße 6

Anfahrt: <http://www.ewit.ccb.tu-dortmund.de/gdch/anfahrt.html>

Zeit

Dienstag, 28.10.2025, Seminar 14.00 Uhr, Chemie HS3, Vortrag 17:00 ct, Chemie HS1**gez. Professor Dr. Andreas Steffen**

Gesellschaft Deutscher Chemiker

Ortsverband Dortmund