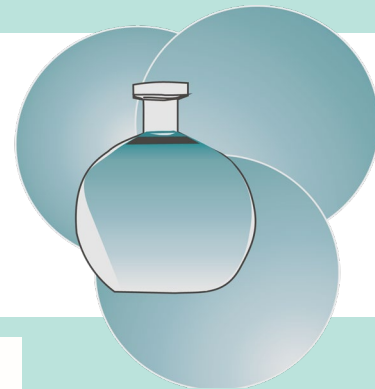


Fakultät für Naturwissenschaften

Institut für Chemie



lädt ein

gemeinsam mit der Gesellschaft
Deutscher Chemiker
zum



Vortrag
von Herrn

**JProf. Max Martin
Hansmann**

Lehrbereich Organische Chemie
**Technische Universität
Dortmund**

“From Organic Redox-Systems to Novel Carbon Compounds”

am: 13. Juli 2023

um: 16:00 Uhr

WO: im Raum 1/232

Die kleine Kaffeerunde vor dem Vortrag beginnt
um 15:30 Uhr im Raum 1/232.

Gäste sind herzlich willkommen!

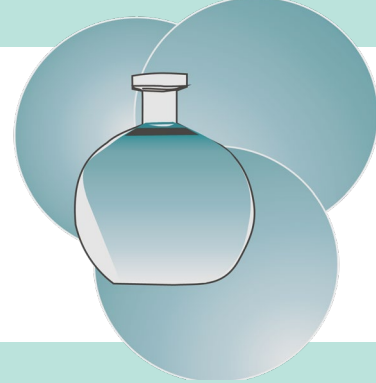


TECHNISCHE UNIVERSITÄT
IN DER KULTURHAUPTSTADT EUROPAS
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**JProf. Max Martin
 Hansmann**

Lehrbereich Organische Chemie

**Technische
 Universität Dortmund**



GDCh
 GESELLSCHAFT
 DEUTSCHER CHEMIKER

“From Organic Redox-Systems to Novel Carbon Compounds”

The first part of this talk will focus on new organic redox-systems and their application in energy storage and photo-catalysis.^[1] In the second part unusual organic substance classes such as diazoalkenes ($R_2C=C=N_2$) will be presented. Diazoalkenes have been postulated in a series of important reactions such as the Seyferth–Gilbert homologation. While the direct evidence for their existence in these transformations remains missing, their spectroscopic identification was so far limited to matrix-isolation studies at low temperatures. Conceptionally, we demonstrate that diazoalkenes can be tuned to room temperature stable compounds. The synthesis, characterization, electronic structure and reactivity of the recently discovered stable diazoalkenes is presented.^[2] The new molecule class can be accessed by the reaction of mesoionic N-heterocyclic olefins (mNHOs)^[3] with nitrous oxide (Fig. 1). We show that N_2 can be substituted by isocyanides or carbon monoxide.^[4] Irradiation of stable diazoalkenes leads to photochemically triggered loss of N_2 and the formation of the first triplet vinylidene, a new class of carbon based diradicals.^[5] New trends in this young field will be discussed.

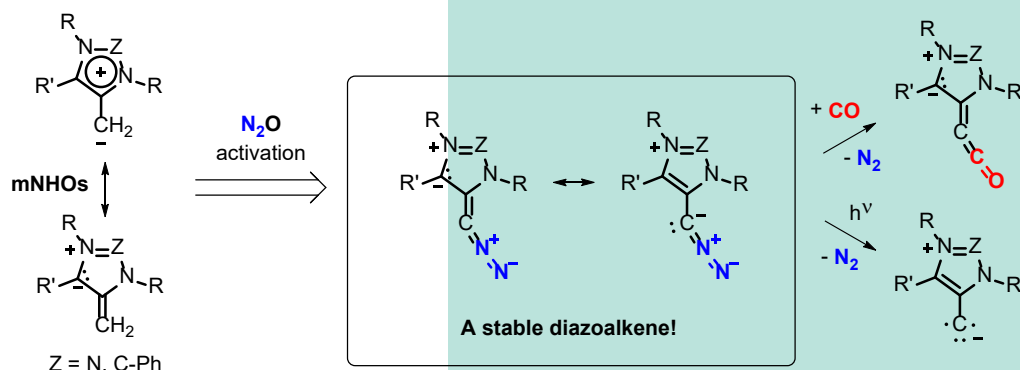


Fig. 1. From mesoionic N-heterocyclic olefins to room temperature stable diazoalkenes and their N_2/CO exchange.

[1] P. W. Antoni, C. Golz, M. M. Hansmann, *Angew. Chem. Int. Ed.* **2022**, e202203064.

[2] P. W. Antoni, C. Golz, J. J. Holstein, D. A. Pantazis, M. M. Hansmann, *Nat. Chem.* **2021**, *13*, 587–593.

[3] M. M. Hansmann, P. W. Antoni, H. Pesch, *Angew. Chem. Int. Ed.* **2020**, *59*, 5782–5787.

[4] P. W. Antoni, J. Reitz, M. M. Hansmann, *J. Am. Chem. Soc.* **2021**, *143*, 12878–12885.

[5] Y. Kutin, J. Reitz, P. W. Antoni, A. Savitsky, D. A. Pantazis, M. Kasanmascheff, M. M. Hansmann, *J. Am. Chem. Soc.* **2021**, *143*, 21410–21415.