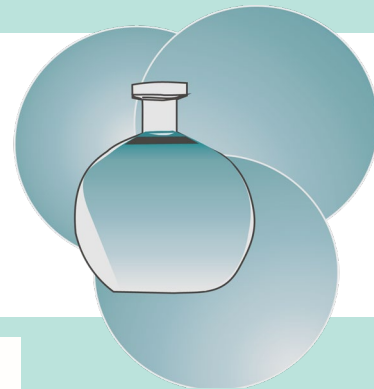


Fakultät für Naturwissenschaften Institut für Chemie



lädt ein

gemeinsam mit der Gesellschaft
Deutscher Chemiker
zum

Vortrag
von Herr

Prof. Ian A. Tonks

Department of Chemistry

University of Minnesota



“Ti-Catalyzed Nitrene Transfer Reactions: Strategies for Catalytically Breaking and Making N-N Bonds”

am: 13. April 2023

um: 16:00 Uhr

wo: im Raum 1/232

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

Gäste sind herzlich willkommen!

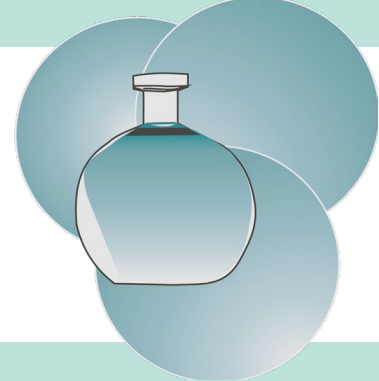


TECHNISCHE UNIVERSITÄT
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Prof. Ian A. Tonks

Department of Chemistry
University of Minnesota



“Ti-Catalyzed Nitrene Transfer Reactions: Strategies for Catalytically Breaking and Making N-N Bonds”

Titanium is an ideal metal for green and sustainable catalysis—it is the 2nd most earth-abundant transition metal, and the byproducts of Ti reactions (typically TiO_2) are nontoxic. However, a significant challenge of utilizing early transition metals for catalytic redox processes is that they typically do not undergo facile oxidation state changes because of the thermodynamic stability of their high oxidation states. Several years ago our group discovered that Ti imidos ($\text{LnTi}=\text{NR}$) can catalyze oxidative nitrene transfer reactions from diazenes via a $\text{Ti}^{\text{III}}/\text{Ti}^{\text{IV}}$ redox couple. We are using this new mode of reactivity to develop a large suite of practical synthetic methods. In this talk, our latest synthetic and mechanistic discoveries related to Ti nitrene transfer catalysis and other amination reactions will be discussed, including new catalyst design strategies for selective construction of pyrroles via [2+2+1] cycloaddition of alkynes with Ti nitrenes and alkynes, as well as new methods for catalytic oxidative amination, multicomponent N-N oxidative coupling to synthesize pyrazoles, and more.

