GESELLSCHAFT DEUTSCHER CHEMIKER

ORTSVERBAND HANNOVER

Einladung zum GDCh-Colloquium des Ortsverbandes Hannover

Das Colloquium findet um 17h c.t. im Dr.-Oetker-HS (Raum 007, Gebäude 2504) der Leibniz Universität Hannover, Institut für Physikalische Chemie und Elektrochemie, Callinstraße 3a, D-30167 Hannover statt.

30.01.2025 **Prof. Dr. Cristian A. Strassert**
Institut für Anorganische und Analytische Chemie, Universität Münster
Cells in Motion Interfaculty Centre, Center for Nanotechnology

Exploiting aggregation and the "the heavy ligand effect" in photofunctional coordination compounds

Coordination compounds involving late transition metal elements (such as Re, Pd, Pt and Au) have found applications in optoelectronics, bioimaging and phototherapy. In all cases, the heavy atom effect plays a crucial role in modulating intersystem crossing rates as well as the radiative deactivation efficiencies from the lowest triplet state, which is known as phosphorescence. Usually, diffusion-controlled Dexter-type energy transfer to triplet dioxygen quenches long-lived excited triplet states while leading to the formation of singlet dioxygen, a highly reactive oxygen species. Notably, while aggregation phenomena typically lower the photoluminescence efficiencies due to intermolecular deactivation, planar d^8-configured compounds can show red-shifted emission from dimeric units mediated by metal-metal coupling. Herein, the role of progressively heavier pnictogen-based ligands employed as monodentate ancillary units for photofunctional Pt(II) and Re(I) complexes will be discussed, while paying attention to excited state lifetimes, phosphorescence efficiencies and singlet dioxygen quantum yields. Besides introducing the "heavy ligand effect", aggregation phenomena and the implementation of such coordination compounds as self-referenced oxygen sensors will be presented.

Prof. Dr. Jens-Uwe Grabow
Vorsitz OV Hannover

Vor dem Colloquium findet ab ca. 16h c.t. eine ‚Kaffeerunde' mit dem Vortragenden in der Bibliothek des PCI statt.