

Einladung zu einem Kolloquium

Datum/Zeit: **Dienstag, 19.03.2024, 16.45 Uhr**

Referent: **Prof. Sabine Richert**
University of Freiburg, Freiburg, Deutschland

Titel: *Exploring spin communication in photogenerated molecular multi-spin systems*

Ort: **HCI G7**

Photogenerated organic triplet-doublet systems hold great promise for a range of technological applications in the emerging field of molecular spintronics, including the areas of quantum sensing and optoelectronics. These systems are typically composed of a chromophore that is covalently linked to a stable radical. The proximity of the radical alters the excited state kinetics of the chromophore and, frequently, the radical acts as an efficient triplet sensitizer by enhancing the intersystem crossing rate. However, the further development of any applications involving such systems will crucially depend on our ability to control the magnetic properties of these materials, which requires a profound understanding of the underlying excited state mechanisms.

In this presentation, I will discuss the optical and magnetic properties of photogenerated triplet-radical systems as well as possible future applications by presenting our recent results obtained for a range of chromophore–radical compounds comprising systematic modifications of the molecular structure. Combining these results with insight from ab-initio calculations, we shed light on the factors influencing the rate and yield of triplet state formation as well as the magnitude of the exchange interaction between the chromophore triplet and radical spin centres.

Gäste sind willkommen