



Münchner Physik- Kolloquium

Winter
2016/17

From self-amplification of chirality to the imaging of the absolute configuration by Coulomb explosion

Prof. Dr. Oliver Trapp, *LMU München*

Monday, 6 February 2017, 17:15 h

Hörsaal H 030, Fakultät für Physik der LMU, Schellingstraße 4, München

We developed new strategies based on stereochemically labile ligands and designed catalytic systems, which are able to switch their configuration by interaction with suitable selectors leading to self-amplifying enantioselective processes. Such processes are important in the context of Origins-of-Life to understand the formation of a homochiral world. Furthermore the presented strategy opens up new approaches for the development of improved self-amplified asymmetric syntheses.

In the second part a new technique to determine absolute configurations of chiral molecules will be presented. Very recently, we reported the first assignment of the absolute configuration of enantiopure (R,R)-2,3-dideuteriooxirane by direct visualization of the sense of chirality using foil-induced Coulomb explosion imaging (CEI). In this experiment a small sample of the compound is ionized, accelerated by 2.0 MeV and mass-selected. The valence electrons are stripped off within 1 fs by passing through an ultrathin diamond foil providing an enlarged molecular picture. We also show the unambiguous chemical correlation of the absolute configuration of cryptochiral (R,R)-2,3-dideuteriooxirane with the stereochemical key reference (+)-glyceraldehyde.

Student event: Meet the speaker

We invite you to a **student-only** discussion-round with Prof. Dr. Oliver Trapp before his Munich Physics Colloquium talk.

Be curious and feel free to ask any question.

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