

09th May 2019 - 10 h

CFEL – Building 99, seminar room II+III (ground floor)

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Spectroscopy and Chemistry of Isolated Biradicals

Biradicals possess two spin centers that can form a molecule with either a triplet or a singlet ground state. Biradicals are often short-lived and appear as chemical intermediates in numerous systems, like combustion or the atmosphere. Their chemistry is investigated in Würzburg in the research training group GRK 2112. In my talk I will present recent work on selected biradicals, using laser as well as Synchrotron and IR-FEL radiation. The experimental work is in all cases accompanied by state-of-the-art theory. The various ways to generate biradicals will be introduced.

One focus will be on ortho-benzyne, C_6H_4 , which plays an important role in the formation of polycyclic aromatic hydrocarbons (PAH). The products of its self-reactions are characterized by Infrared and VUV radiation and an efficient pathway to PAH is confirmed. A second example is para-xylylene, which is investigated by femtosecond time-resolved photoelectron spectroscopy. In addition recent work on species containing boron atoms will be discussed.

