Contribution ID: **20** Type: **Talk**

Photoelectron spectroscopy of radicals using double imaging coincidence techniques

Tuesday, 30 September 2014 11:50 (30 minutes)

Radicals are key intermediate species whose detection and study lead to invaluable knowledge on the mechanism of the reactions where they participate. However, their reactivity makes their stable production a challenge, and often clean production is not possible as they are detected alongside many other byproducts, including an excess of precursor.
Here, we will show how double imaging coincidence techniques help to extract the photoelectron spectroscopy of pure radicals out of a complex mixture, which can then be used as a footprint for isomer differentiation. Two recent examples will be given: the NO3 radical produced by flash pyrolysis of N2O5, and the OH/OD radicals, produced in the newly commissioned flow tube reactor by the reaction H2O/D2O + F $\longrightarrow$ HF + OH/OD. Perspectives on the application of the flow tube reactor to gas kinetics will be mentioned.

Primary authors: Dr FITTSCHEN, Christa (Université de Lille); Dr TAATJES, Craig (Sandia National Laboratories); Dr OSBORN, David (Sandia National Laboratories); Dr GARCIA, Gustavo (Synchrotron SOLEIL); Dr LOISON, Jean-Christophe (Université de Bordeaux); Prof. STANTON, John (University of Texas); Dr TAKEMATSU, Kana (California Institute of Technology); Dr NAHON, Laurent (Synchrotron SOLEIL); Prof. OKUMURA, Mitchio (California Institute of Technology); Dr TANG, Xiaofeng (SOLEIL Synchrotron)

Presenter: Dr GARCIA, Gustavo (Synchrotron SOLEIL)

Session Classification: Session 4 Coincidence Spectrometry (Gerber)