

# Laser Seminar / NCCR MUST Seminar

## Wednesday, April 13, 2016

Time	16.45
Location	ETH Zurich, Hönggerberg, <b>HCI J3</b>
Speaker	Iwan Powis, Professor of Chemical Physics, University of Nottingham, Nottingham, UK
Title	Molecular Spectroscopy, Dynamics and Theoretical Chemistry
Abstract	<p>The photoionization of chiral species by circularly polarized light produces an asymmetric angular distribution of photoelectrons. The forward-backward asymmetries are typically 1—40%, perhaps three orders of magnitude greater than in other chiroptical phenomena. This offers the sensitivity to probe, in dilute environments, static and dynamic aspects of molecular chirality per se, eliminating the uncertain complications from induced chiral structure in a solvation shell. Photoelectron Circular Dichroism (PECD) studies, initially conducted with synchrotron radiation in single photon VUV and SXR regimes, provide the opportunity to examine this phenomenon and have recently been extended to use ultrafast laser excitation sources. These developments open new possibilities for fundamental investigations, including time-resolved studies, and for analytical applications in correlated electron-ion spectrometry.</p> <ul style="list-style-type: none"><li>• Nahon, Laurent, Garcia, Gustavo A., and Powis, Ivan, Valence shell one-photon photoelectron circular dichroism in chiral systems. <i>J. Elec. Spec. Rel. Phen.</i> <b>204</b> (B), 322 (2015).</li><li>• Janssen, Maurice H.M. and Powis, Ivan, Detecting chirality in molecules by imaging photoelectron circular dichroism. <i>Phys. Chem. Chem. Phys.</i> <b>16</b> (3), 856 (2014).</li><li>• Garcia, Gustavo A., Nahon, Laurent, Daly, Steven, and Powis, Ivan, Vibrationally induced inversion of photoelectron forward-backward asymmetry in chiral molecule photoionization by circularly polarized light. <i>Nat. Commun.</i> <b>4</b>, 2132 (2013).</li><li>• Rafiee Fanoos, Mohammad M. et al., Enantiomer specific analysis of multi-component mixtures by correlated electron imaging–ion mass spectrometry <i>Nat. Commun.</i> <b>6</b>, 7511 (2015).</li></ul>
Host	Hans Jakob Wörner, Laboratory of Physical Chemistry
More Info	<a href="http://www.opteth.ethz.ch/news/laser_seminar">http://www.opteth.ethz.ch/news/laser_seminar</a>

