universität innsbruck

FWF Der Wissenschaftsfonds

Innsbruck Physics Colloquium

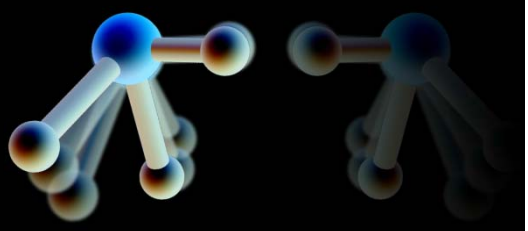
Simple games with molecules for advanced imaging

Jochen Küpper

Center for Free-Electron Laser Science (CFEL)
Deutsches Elektronen-Synchrotron DESY

Molecules are the entities defining the world around us, the building blocks of chemistry and biology. Everybody knows what a molecule is, but it's far from trivial to define what exactly is a 'molecule'. Unraveling, and eventually controlling, molecular dynamics and chemical reactivity and dynamics are at the heart of modern molecular sciences. One approach to this is to directly follow specific chemical reactions of isolated and well-defined reactants, preferably in real time, through so-called molecular movies. Here, I will discuss the control schemes we have developed for small molecules to create pure samples of well-defined individual molecular species, to hold them in space, and to image them. Building upon this, we have devised novel concepts for the disentangling of chirality o experimental techniques toward similar levels of control for (biological) nanoparticles. Basic applications include chemical reactivity studies and atomic-resolution diffractive imaging of molecular structure.

DK-ALM Pre-Talk: 16:30 h
Lorenz Ballauf
Molecules formed in ion-surface collisions
Snacks will be provided in between the pre-talk and the colloquium.



Colloquium: Tuesday, 27.11.2018
17:15 h in lecture hall C

Innsbruck Physics Colloquium, Organisation: M. Beyer, H.-C. Nägerl, A. Reimer