

Andrea Droghetti's short CV

Andrea Droghetti studied in the University of Bologna, Italy. There he first achieved the degree in Physics in 2004 and then the Master's degree in Theoretical Physics in spring 2007 after presenting a thesis about strongly correlated electron systems.

In autumn 2007, Andrea joined the Computational Spintronics Group in Trinity College Dublin (Ireland), where he finally completed the Ph.D in Physics in 2012 under the supervision of Prof. Stefano Sanvito. During this period, Andrea's research mainly focused on unveiling the magnetic properties of diluted magnetic semiconductor and d^0 magnets. Furthermore, in collaboration with Prof. Dario Alfe' in University College London (UK), he also addressed, through quantum Monte Carlo methods, the electronic structure of a class of magnetic molecules (the so-called spin-crossover complexes), which are of large interest for spintronic applications.

From winter 2012 until spring 2014, most of Andrea's research has been carried out within the European Union funded project "Next Generation Hybrid Interfaces for Spintronic applications" HINTS (www.hintsproject.eu), which gathered some of the leading experts in the field of organic spintronics. Andrea thus develops a deep interest for the electronic structure of the interfaces between organic molecules and ferromagnetic materials and, in particular, for spin transport and spin-relaxation processes.

Andrea's current work encompasses organic and single-molecule spintronics. In particular, it deals with spin-dynamics at hybrid organic/ferromagnet interfaces and with the applications of advanced electronic structure methods in order to understand the properties of molecules relevant in these fields. Furthermore, together with Dr. Ivan Rungger and Prof. Liviu Choncel (University of Augsburg, Germany), Andrea is carrying out the development and the implementation of quantum Monte Carlo and Dynamical Mean Field Theory methods in order to study correlated transport problems at the nanoscale.