



Olivier Kahn International Award

The European Institute of Molecular Magnetism, the President and the members of the Olivier Kahn Award International Jury are pleased to announce that the laureate of the sixth Olivier Kahn International Award is Dr. Matteo Mannini, Assistant Professor, Department of Chemistry, University of Florence, Italy.

Olivier Kahn was a pioneer in molecular magnetism, a brilliant scientist and teacher, and deeply committed to the promotion of talented young scientists. The European Institute of Molecular Magnetism follows the tradition of the MAGMANet European Network of Excellence that created a prestigious award bearing his name, the Olivier Kahn International Award, to honour a young scientist who has received his/her Ph. D. within the last 10 years. The award, an “Olivier Kahn Medal”, designed by *La Monnaie de Paris*, is accompanied by a prize of 5,000 Euros, to allow the laureate to develop his/her research and to participate in major international conferences.

The 2017 laureate, Dr. Matteo Mannini, has made original contributions in the field of the integration of magnetic molecules in nanometric architectures towards molecular spintronics. The laureate spent his young career in the Laboratory for Molecular Magnetism (LAMM), in the Chemistry Department of the University of Florence, with frequent stays in several European Synchrotron Radiation facilities.

In his studies the laureate has been interested in some fundamental aspect of the magnetic memory of molecules. Importantly his results can serve as proof of principle that single molecules magnets (SMM), can be observed, not only in the bulk of a material but also when they are grafted or deposited on metallic substrates. This paves the way to more applicative research through the development of hybrid devices for organic spintronics. The shift from the crystal to the surface has been a recent evolution in molecular magnetism. It was necessary to address individual molecules and to fully exploit the molecular origin of the hysteresis of SMMs. It is far from being trivial. The overall study was successful because of a rigorous and multidisciplinary approach established in large part by Dr. Mannini.

Dr. Mannini has played a crucial role acting as a very efficient link between chemists and physicists active in surface science and synchrotron radiation techniques. The area of phenomena and classes of materials that he has investigated with synchrotron light is particularly wide as it goes from spin crossover to valence tautomerism and from single molecule magnets to single chain magnets. In most cases he developed strategies for surface deposition and for monitoring the bistable behaviour. Far from single-shot studies, the laureate has developed reliable preparation and characterization

protocols to provide new and reproducible results, a mandatory aspect for making real advances in this difficult research area.

Supported by the members of the well-established and very active molecular magnetism laboratory in Florence, the best specialists in X-ray absorption and many fruitful collaborations, Matteo Mannini was able to choose the appropriate samples and techniques, to develop his own creativity to finally tackle the challenges of the “crystal to surface” shift. So doing, he became a reference in the field of molecular magnetic materials at the nanoscale.

Presenting the social importance of his work, Matteo Mannini declared, having in mind a new kind of nano-transistor and the rise of a new area, molecular spintronics : *“My idea is to exploit the rich properties of these nanometer-sized magnetic objects, above all their “memory effect”, to produce a novel class of transistors in which electrons, flowing through them, can be filtered depending on the magnetic state of the molecules. This miniaturized technology is expected to reduce energy consumption and to be faster than the one currently employed in traditional devices, being based on spin transport instead of charge transport. »*

The international jury delivering the Award selected the laureate among several young outstanding scientists - chemists and physicists - having contributed actively to the development of molecular magnetism in Europe and having provided the international community with remarkable scientific results. The members of the jury were extremely impressed by the very high standard of the candidates. They wish full success in the development of their remarkable but challenging projects to the laureate and the other candidates.

The Award will be presented on the occasion of the European Conference on Molecular Magnetism, ECMM 2017, to be held in Bucharest, Romania on August 27-31. The laureate will present an invited lecture on this occasion.

The European Institute of Molecular Magnetism (EIMM)

Dante Gatteschi, President, Emeritus Professor, Università degli Studi di Firenze, Florence, Italy

The members of the Olivier Kahn International Jury

Odile Eisenstein, Research Professor CNRS Emeritus, Institut Charles Gerhardt, Université de Montpellier, France

Eva Rentschler, professor, Faculty of Chemistry, Institute of Inorganic Chemistry and Analytical Chemistry, Mainz University, Germany

Valentin Alek Dedin, Researcher, Istituto per lo Studio dei Materiali Nanostrutturati, CNR-ISMN, Bologna, Italy.

Jose-Ramon Galán-Mascarós, ICREA Professor, Institute of Chemical Research of Catalonia (ICIQ), Tarragona, Spain

Wolfgang Wernsdorfer, Humboldt Professor, KIT, Physikalische Institut, Karlsruhe, Germany and Institut Néel, CNRS, Grenoble, France

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