

Curriculum Vitae

Alberto GHIRRI

Born in Scandiano (RE), Italy, July 7, 1980.

Citizenship: Italian

Status: Married, three children.

Office address: CNR-Istituto Nanoscienze, via Campi 213/a, 41125 Modena (I).

Current position

Researcher at CNR-Istituto Nanoscienze, Centro S3, Modena (April 2013-present).

Education

- PhD in Physics, Università di Modena e Reggio E., February 2008.

- Graduate in Physics, Università di Modena e Reggio E., June 2004. Full marks and honor.

Employment

- Postdoctoral fellowship at Dipartimento di Fisica, Università di Milano. August 2012 - March 2013.

- Postdoctoral fellowship at CNR-Istituto Nanoscienze, Centro S3, Modena. February 2009 - July 2012.

- Postdoctoral fellowship at Dipartimento di Fisica, Università degli Studi di Modena e Reggio E., January 2008 - December 2008.

- Postgraduate fellowship at CNR-INFM, Centro S3. July 2004 - December 2004.

Research topics

Nanomagnetism. Electron Paramagnetic Resonance (EPR). Microwaves. Self-assembly of molecules at surfaces. Scanning probes. Thermodynamic properties. Magnetocaloric effect.

Biographic sketch

A.G. is currently research scientist at CNR-Istituto Nanoscienze, Centro S3, Modena. He graduated in Physics in 2004 from the Università di Modena e Reggio E. (2004) with full marks and honour. He obtained the PhD in Physics in 2008 from the same university while working in the group of Prof. M. Affronte. He studied quantum effects in finite 1D spin chains and rings by means of low-temperature specific heat, magnetization and torque experiments [PRB 76, 21440 (2007), PRB 79, 224430 (2009)] also in high magnetic fields [PRB 72, 060403(R), (2005)]. He contributed to the study of Cr₇Ni antiferromagnetic rings, which have been proposed for the implementation of spin qubits [PRL 94, 207208, (2005)]. He also developed a Scanning Hall Probe Microscope for the study of the surface magnetization and measured the magnetic properties of a patterned monolayer of magnetic nanoparticles [Small, 4, 2240 (2008)]. For this work A.G. has been awarded with the National Prize "Premio NEST per le Nanoscienze 2008" (Scuola Normale Superiore, Pisa). During his post-doctoral fellowships he focused on the surface deposition of molecular clusters [Dalton Trans. 39, 4928 (2010), Adv. Funct. Mater. 20, 1552 (2010), Chem. Commun. 49, 3404 (2013)]. In 2011 the study of the UHV sublimation and self-assembly of Cr₇Ni rings on surface has shown the formation of ordered and oriented monolayers [ACS Nano 5, 7090 (2011)] and has allowed the direct investigation of the magnetic anisotropy of the deposited molecules [Adv. Funct. Mater. 22, 3706 (2012)]. In 2011 he has been visiting the Max Planck Institute in Stuttgart (D) for Scanning Tunneling Spectroscopy experiments. He also contributed to the study of coupled dimers of Cr₇Ni rings and to the formation of entangled states [Nature Nano 4, 173 (2009); PRL 104, 037203 (2010)]. A.G. also participated to the study of the magnetocaloric effect in a novel class of molecular refrigerants [APL 84, 3468 (2004), APL 87, 072504 (2005), Inorg. Chem. 51, 3935 (2012)] and to the study of its preservation on isolated molecules on surfaces [Adv. Mater. 25, 2816 (2013), Adv. Funct. Mater. 24, 4782 (2014)]. In 2013 he became local coordinator of a national research project on molecule based Quantum Information Processing. He is currently involved in the design and fabrication of X-band superconducting resonators and on the implementation of the experimental set-up for circuit-QED experiments with molecular spins [Structure and Bonding Series, Ed. S. Gao, Springer 2014].

Research and travel grants

- National Research Project FIRB 2012 "New challenges in molecular nanomagnetism", local coordinator.
- CNR Short-Term Mobility Programme 2014.

Abroad experience

- 2014. Short-term visit at National High Magnetic Field Laboratory - Florida State University, Tallahassee, USA (3 weeks).
- 2011. Visitor at Prof. K. Kern laboratory, Max-Planck-Institute, Stuttgart (D) (2 months).
- 2004-2011. Shifts at large scale facilities [Grenoble High Magnetic Field Laboratory (F), European Synchrotron Radiation Facility (F)].

Awards

- National prize "Premio NEST per la Nanoscienza", Scuola Normale Superiore, Pisa (2008).
- National prize "Premio Galluzzi", Università Roma Tre (2004).
- Academic prize "Progetto i migliori cervelli scientifici", Università di Modena e Reggio E. and Rotary Club Modena (2004).

Teaching

- National Scientific Qualification (2012)
- Teaching assistant, Università di Modena e Reggio E., Engineering Department (2008).
- Teaching assistant, Università di Modena e Reggio E., Physics Department (2005-2006).

Contributed conference talks

2007: From micro to nanotechnologies, Roma; EMRS, Strasbourg (F). 2009: Magnet, Roma. 2010: ECOSS, Groeningen (NL). 2011: ECMM, Paris (F). 2012: Nanomagnets, Guadarrama (ES).

Refereeing

Institute of Physics, Royal Society of Chemistry, American Chemical Society.

Publications

Since 2004, 1 chapter in book and 35 publications on peer-reviewed international journals (1 Nature Nano, 4 PRL, 1 Adv Mater, 1 ACS Nano, 3 Adv Funct Mater, 1 Small, 2 Appl Phys Lett, 5 PRB), h-index=12, average citations per item=24.03, total citations=841.

Il sottoscritto GHIRRI ALBERTO

nato a SCANDIANO (RE) il 07/07/1980

residente a SCANDIANO (RE) in Via MANZINI n. 4

consapevole della responsabilità penale prevista, dall'art. 76 del D.P.R. 445/2000, per le ipotesi di falsità in atti e dichiarazioni mendaci ivi indicate dichiara l'autenticità delle informazioni riportate in questo documento.

Scandiano, September 12, 2014.

Alberto GHIRRI

