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**Permanent Senior researcher : Scientist responsible at the CNRS**

**HDR defense as PhD director : 07/07/1994**

*Title : « From metallic amorphous layers to superlattices »*

Referees : Albert FERT, Bernard BARBARA and Michel PIECUCH

From 1992 I work at the LPMCN in the « Clusters » platform where I have been the scientist responsible of 5 PhD thesis and 3 post-doc young scientists on the study of various **Single Nanomagnets from 3D-transitions Magnetic Clusters** prepared from an original co-deposition technique based on the **Low Energy Clusters Beam Deposition**.

- ACI CNRS **NanoQuantumSpins** national contract N° 02N26/0020 <sup>1</sup>, (starting date 01/07/2002) We prepared and studied **Nanodevices realized thanks to electron lithography for micro-SQUID and spin-dependent Tunnel nanojunction measurements**. We evidenced **first CoPt 2D-astroïds** from micro-SQUID device **on one single CoPt clusters embedded in Nb matrix**. We also have been able to contact **one single CoPt clusters embedded in MgO matrix** by the « shadow evaporation » technique and we observed **electron quantum states in CoPt cluster counting 200 atoms**.

- April 2004-2007 : in the frame of the EU **STREP SFINx N° NMP-CT-2003-505587** <sup>2</sup>, I am the **Leader of the LYON team** in view to study **Superconducting/Ferromagnetic proximity effects in hybrid systems** namely **Cobalt based-clusters embedded in Niobium matrix**. The financial support allowed us to pay **3 years of post-doctoral salary** and to develop a **new-UHV apparatus to produced size-selected clusters embedded in monocrystallined matrix**.

### Invited international conferences

- II International **ASTAPHYS** - Molecular Engineering Conference, Puerto Vallarta, Mexico (August 2003)
- International « **Nanoclusters school** » Madrid, Espagne (october 2004)
- Workshop: **Manipulating Quantum Spin and Classical Dots**, Les Houches, F (april 2005)
- Nanoelectronics 2006 – **Novel Nanomaterials, Quatum Transport and Noise of Electrons and Photons**, Lancaster, UK (January 2006)

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<sup>1</sup> ACI CNRS NanoQuantumSpins national contract N° 02N26/0020, (starting date 01/07/2002) – 45 k€ (for the LPMCN Lyon)

Coordinator : W. Wernsdorfer, Laboratoire Louis Néel (LLN, Grenoble)- Partners: D. Mailly, Laboratoire de Photonique et Nanostructures (LPN, Marcoussis), V. Bouchiat, Centre de Recherche sur les Très Basses Températures (CRTBT, Grenoble) and V. Dupuis, LPMCN (Lyon)

<sup>2</sup> STREP SFINX 2004-2007: Specific Targeted Research Project SFINX: SUPERCONDUCTIVITY - FERROMAGNETISM INTERPLAY in NANOSTRUCTURED HYBRID SYSTEMS : contrat n° NMP2-CT-2003-505587, accepted in july 2003 (note : 24.5/30) - 300 k€ (for the LPMCN Lyon)

Coordinator : V. I. Falko, Lancaster UK - Partners: A. Brataas, Norwegian University of Science and Technology; G. E. W. Bauer, Technische Universiteit Delft; C. H. Marrows, University of Leeds; H. Courtois, Centre National de la Recherche Scientifique – Grenoble ; K. Arutyunov, University of Jyväskylä and V. Dupuis, Université Claude Bernard Lyon I.