

# Dr. Marine SCHOTT



## EDUCATION

- Graduated 2017** **PhD in nanomagnetism – Université Grenoble Alpes, Grenoble**  
**Supervisors: Anne Bernard-Mantel and H el ene B ea**  
Thematic: Nanophysics, magnetism.  
*Funding: Awarded from French ministry of Higher Education and Research.*
- Graduated 2014** **Master 2 research in nanophysics and nanostructures – Universit  Joseph Fourier, Grenoble.**  
Characteristics modules: Nanomagnetism, Nanophotonics, Electronic properties in graphene, Near field microscopy, Semiconductors nanostructures.
- Graduated 2013** **MSc in physics – Queen’s university of Belfast**  
Combined average: 80%.
- Graduated 2012** **Licence (bachelor degree) in physics and chemistry – Universit  Joseph Fourier, Grenoble**  
Modules: general organic and inorganic chemistry, algebra and analysis, mechanics, electromagnetism and optics. Obtained with honours.
- Graduated 2009** **Baccalaur at S SVT (Science, biology and geology – Speciality: physics and chemistry) – Lyc e Albert Triboulet, Romans sur Is re**  
Obtained with honours.



## PROFESSIONAL EXPERIENCES IN RESEARCH AND DEVELOPMENT

- Since September 2021** **Research fellow – Dipartimento di fisica – Genova – ITALIA**  
*Role:* Study of transverse transport properties and the effect of ion irradiation in microstructures of the superconductor  $Ba_{1-x}K_xFe_2As_2$  made using focused ion beam.
- 2018 – August 2021** **Senior Process Engineer – Magnetism specialist – Seagate Technology – Derry – NORTHERN IRELAND**  
*Role:* Process control of diverse magnetic measurements (B(H) loopers, magneto-optical Kerr effect mapper, Current-In-Plane Tunnelling prober, Automated transfer curve Quasi Static Wafer testers) for metrology team – Magnetism trainings to different levels and to different teams.
- 2017- 2018** **R&D and Innovation consultant – Ayming – Lyon**  
*Role:* Helping companies in the R&D tax incentives, grants and French government funding schemes. Technical writing.
- 2015 - 2017** **Teaching experience – Universit  Grenoble Alpes – Grenoble**  
Many subjects taught: lab training in thermochemistry (bachelor students) and in magnetism (MSc students). Lectures of mathematics (level 1 students).  
**Supervisors:** Bozhidar Velichkov, J r me Dejeu and H el ene B ea.
- 2014 - 2017** **PhD Research project – Nanophysics, Magnetism – Collaboration between: N el Institute (CNRS) and SPINTEC (CEA-INAC) – Grenoble**  
*Subject:* Electric-field effect on magnetic properties of ultra-thin layers of cobalt.  
**Supervisors:** Anne Bernard-Mantel and H el ene B ea.
- 2010 to 2014** **Diverse Research projects N el Institute - CNRS – Grenoble**  
*Subject:* Nano-indentation by diamond conductive atomic force microscope tip to connect single nano-objects.  
**SIMaP (Science and engineering of materials and processes laboratory) - Grenoble INP - Saint Martin d’H eres**  
*Subject:* Carburation of silicon nanowires by Chemical Vapor Deposition

## CONTACT:

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Italia  
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<https://www.linkedin.com/in/marine-schott-125b366b/>

Date of birth: XXXXXXXX  
Nationality: French

Driving licence B

## LANGUAGES:

**FRE:** Native  
**ENG:** Fluent - working language  
**ITA:** Intermediate

## COMPUTER LITERACY:

**Matlab, Octave, Originlab, ImageJ, Latex, Gwyddion, Mathematica, Klayout, Inkscape, JMP, SQL, MS Office, Labview**

process at low pressure.

**CERMAV - CNRS - Saint Martin d'Hères (excellence internship of Université Joseph Fourier)**

Subject: Determination of the structure of starch nanocrystals



## OTHER PROFESSIONAL EXPERIENCES

- Sept 2009- Dec 2013** Student part-time job as a checkout assistant and a library assistant - Institut Fourier - Saint Martin d'Hères – Checkout assistant - Super U and Leclerc - Romans sur Isère - FRANCE  
Organisation skills to be able to conciliate my studies and my job during the weekends. Communication. Adaptability.
- Summers 2006-2013** Different summer jobs as team manager, Farm employee – FRANCE  
Communication, organisation, team spirit, working in autonomy, coordination. Responsibility and quick learning.
- June 2011** Volunteer: Library assistant, Flash Bang science society - Haslingden - Lancashire, England  
Flexibility. Organisation of practical experiments in physics and chemistry in primary schools. Teaching skills.

## HOBBIES:

Dance  
Piano (gave some lessons during high school), Choir, French tutoring, Theatre  
Travelling, French tutoring



## SKILLS

- Experimental**
- Micro-fabrication in clean room: UV lithography, deposition, etching, Focused ion beam deposition
  - Deposition: Electron Gun, Atomic Layer deposition
  - Design: Masks and sample holder design
  - Characterization: magneto-optical Kerr measurements (imaging and mapping), transport measurements in cryogenic environment (Extraordinary Hall effect), Current-In-Plane Tunnelling prober, Vibrating Sample Magnetometry, Atomic Force Microscopy, B(H) loopers, Automated transfer curve testers (Quasi static Wafer testers), Scanning Electron Microscopy, Focused Ion Beam imaging
  - Technical writing of R&D projects
- Social**
- Organization of seminars dedicated to non-permanent staff for 2 years during PhD and member of the Young professional network committee in Seagate (looking for external speakers, social and personal development activities for the new starters)
  - Member of the organization team of the department days of the lab during PhD
  - Participation to big audience physics outreach activities ("Fête de la Science" during PhD, member of the STEM community in UK for school interventions, tutoring secondary schools interns at University of Genova)
  - French classes for the Creative network at Seagate
- Knowledge**
- Nanomagnetism, spintronics, magnetic recording (read-write head), metrology in micro-fabrication facility
- Personal**
- Organizational and responsibility assets. Pedagogy. Adaptability. Team spirit



## SELECTED PAPERS

*Identification of the Seeding Mechanism in the Spinodal Instability of Dewetting Liquids*, **M. Schott**, L. Repetto, R. Lo Savio, G. Firpo, E. Angeli, U. Valbusa, *Journal of Colloid and Interface Science*, **632**, 2023.

*Electric field control of interfacial Dzyaloshinskii-Moriya interaction in Pt/Co/AlO<sub>x</sub> thin films*, **M. Schott**, L. Ranno, H. Béa, C. Baraduc and A. Bernard-Mantel, *Journal of Magnetism and Magnetic Materials*, **520**, 2021.

*Large Voltage Tuning of Dzyaloshinskii-Moriya Interactions : A route toward dynamic control of skyrmions chirality*, T. Srivastava, **M. Schott**, R. Juge, V. Křížáková, M. Belmeguenai, Y. Roussigné, A. Bernard-Mantel, L. Ranno, S. Pizzini, S. Chérif, A. Stashkevich, S. Auffret, O. Boulle, G. Gaudin, M. Chshiev, C. Baraduc, and H. Béa, *Nano Letters*, **18**, 2018.

*Large voltage tuning of Dzyaloshinskii-Moriya interaction: Towards a chirality switch?*, C. Baraduc, T. Srivastava, **M. Schott**, M. Belmeguenai, Mohamed, Y. Roussigné, A. Bernard-Mantel, L. Ranno, S. Pizzini, S.M. Chérif, A. Stashkevich, S. Auffret, M. Chshiev, and H. Béa, *Proceedings of SPIE - The International Society for Optical Engineering*, 2018.

*The skyrmion switch: turning magnetic skyrmion bubbles on and off with an electric field*, **M. Schott**, A. Bernard-Mantel, L. Ranno, S. Pizzini, J. Vogel, H. Béa, C. Baraduc, S. Auffret, G. Gaudin and D. Givord, *Nano Letters*, **17**, 2017.

*Non-volatile polarization switch of magnetic domain wall velocity*, Z. Huang, I. Stolichnov, A. Bernard-Mantel, **M. Schott**, S. Auffret, G. Gaudin, S. Pizzini, L. Ranno, and N. Setter, *Applied Physics Letter*, **107**, N°25, 2015.



## CONFERENCES

### Talks as a first author:

Associazione Italiana del Vuoto XXV Conference (**AIV XXV**) – May 2022 – Napoli, Italia – **Oral session:** Surfaces: Science and Engineering “*Focused ion and electron beam depositions: a story of compromises*”

Colloque Louis Néel 2017 (**CLN 2017**) – September 2017 – Paris, France – **Oral session:** Skyrmions “*Electric-field control of magnetic skyrmion bubbles stability*”

Annual Conference on Magnetism and Magnetic Materials (**MMM 2016**) – November 2016 - New Orleans, USA – **Oral session:** Voltage controlled magnetism II, “*Electric-field control of nucleation of magnetic skyrmion bubbles at room temperature*”

The joint European Magnetic Symposia (**JEMS 2016**) – August 2016 – Glasgow, UK – **Oral session:** Spin orbitronics, spintronics in antiferromagnets and skyrmion I, “*Electric-field control of nucleation of magnetic skyrmion bubbles at room temperature*”

### Talks as a second co-author:

Annual Conference on Magnetism and Magnetic Materials (**MMM 2017**) – November 2017 - Pittsburgh, USA – **Oral session:** Skyrmions in bulk materials and single ferromagnetic layers, “*Room temperature control of skyrmionic bubble reservoirs by oxidation and electric field in Ta/FeCoB/TaOx*”

**Intermag 2017** – April 2017 – Dublin, Ireland – “*Observation of skyrmionic bubbles in Ta/CoFeB/TaOx structures with different oxidation conditions*”

### Invited talks as a first author:

**SPIE Nanoscience + Engineering** – August 2017 – San Diego, US – “*The skyrmion switch: turning magnetic skyrmion bubbles on and off with an electric field*”

### Invited talks as a second co-author:

**Intermag 2017** – April 2017 – Dublin, Ireland – “*The skyrmion switch: turning magnetic skyrmion bubbles on and off with an electric field*”

**Skyrmag 2017** – May 2017 – Paris, France – “*Electric field control of skyrmion bubble stability and switching*”