

# Nathan Fuchs

## Curriculum Vitae

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### Contact information:

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### Personal:

Date of birth: July 6<sup>th</sup>, 1990  
Mulhouse, France  
Driving license A1, B, C, D1.

### Experiences:

**2015-2020: Ph.D. student, Laboratoire Soft Matter and Photonics, Physics department, UNIFR, Fribourg.** Under the supervision of **F. Scheffold**. <https://www3.unifr.ch/phys/en/research/groups/scheffold/>  
Fabrication and characterization of nanostructured photonic materials.

#### Expertise:

Atomic layer deposition, chemical vapor deposition, scanning electron microscope, focused ion beam, ellipsometry, atomic force microscopy, infrared and visible spectroscopy, optical setups, magnetic heating, spin coating, maskless lithography, clean room, optical microscopy, hydrofluoric acid, disilane, glove box, sputter coating, dynamic light scattering, thermal management, plasma etching, sol-gel reactions, 3D printing, time of flight, profilometry, lab wastes, lab safety, lab management, and organization.

**2014-2015: One year internship and invited student, Laboratoire des systèmes complexes hors équilibre, ISIS, CNRS Strasbourg.** Under supervision of **T.M. Hermans**. <http://www.thomashermans.com/>  
Study of non-equilibrium complex systems.

Entropy production out of equilibrium: Chemical oscillator characterized by continuous flow calorimetry.  
Supramolecular magnetic hyperthermia: MRI imaging and controlled tumor heating using self-assembly.  
Field-induced dissipative self-assembly steady states in C<sub>3</sub>-symmetric discotic molecules with a high magnetic moment.

**2012-2013: Five-month internship, Laboratoire des Nanostructures, ISIS, CNRS Strasbourg.** Under the supervision of **T.W. Ebbesen**, <https://nano.isis.unistra.fr/>  
Study of nano-photonic structures and molecules interactions. Surface Plasmon Polaritons effects, strong coupling interactions, and Extraordinary Optical Transmission studies.

**2010: One month internship, Laboratoire de Synthèses Métallo-Induites, CNRS Strasbourg.** Under supervision of **B. Boff**.  
Analysis and synthesis of new organometallic compounds from Osmium and Ruthenium against cancer.

**2009: Two weeks internship, Pharmaceutical & Analytical Development, Novartis Basel.**  
Improvements of production processes, solubility studies, and preparation of samples for analysis.

**One-week internship, Global Product Strategy, Avastin team, Hoffmann-La Roche Basel.**  
Updating the intranet, preparing PowerPoint presentations, classification of files.

**2008: National Chemistry Olympiad.**

**2006: Two days of internship, new materials and polymers, Huntsman Basel.**

**2005: One-week internship, sécurité-prévention-prévision (Security, prevention and forecast), PSA Mulhouse.**

### Education:

**2013-2015: Master degree**, Physical Chemistry and Materials, Université de Strasbourg.

**2009-2013: Bachelor degree** in Physical Chemistry, Université de Strasbourg.

**2008-2009: First-year of a technical university degree** in Chemistry, Institut Universitaire Technologique Robert Schuman Illkirch Graffenstaden.

## Awards:

**2016:** Best poster prize, Trends in NanoTechnology conference, TNT2016.

## Representative council

Representative of the Ph.D.'s and postdocs in the Department council (2016-2020) and Faculty council (2017-2020). Participation in Physics Department and Science & Medicine Faculty commissions.

Master student representative, Chemistry Faculty, Université de Strasbourg (2013-2015).

## Information Technologies:

Community Manager and Administrator of a French Minecraft online community. Head of a team of 15 staff people and 25.000 unique players since 2015. Management and search for partnerships with high impact websites, associations, and creators.

Responsible resource development and IT management, Collège-Lycée Don Bosco Landser (2004-2008).

**Computer skills:** Windows environment and Office, Ubuntu platform, WordPress, Scifinder, Chemdraw, Origin, Solidworks, and Arduino.

## Extracurricular activities:

Volunteer Firefighter, Caporal, and instructor in France since 2006 and in Fribourg since 2016. Work rescuer (Sauveteur Secouriste du Travail, SST).

Active member and board member at Erasmus Student Network (ESN) Fribourg, promotion of the social and personal integration of the exchange students since 2015.

Responsible for the student Cafeteria and Association of the chemistry student in Strasbourg, relations with suppliers and customers, inventory, supplies, finances, and vice presidency (2009-2015).

Member of the « interventions lycées » program of the Université de Strasbourg, for three years, to present the University to high school students (2012-2015).

Member of the communication and photography group of the SDIS 68 (Firefighters) since 2006.

## Additional skills and interests:

Conception and fabrication of my homemade 3D printer. Advanced knowledge in 3D modeling and 3D printing. Metal investment casting processes of complex parts in aluminum.

Conception, development, and realization of electronic circuits (PCB) for instrumental amplification and Do It Yourself projects.

Strong interest in engineering and space exploration. I also enjoy museums, contemporary arts, skiing (to a relatively high standard), mountain biking, reading, and traveling.

## Languages:

French: native

English: full professional proficiency

German: elementary proficiency

## References:

**Laboratoire Soft Matter and Photonics**, Physics department, UNIFR, Fribourg.

**Prof. Frank SCHEFFOLD**

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**Laboratoire des systèmes complexes hors équilibre**, ISIS, CNRS Strasbourg.

**Prof. Thomas HERMANS**

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**Laboratoire des Nanostructures**, ISIS, CNRS Strasbourg.

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