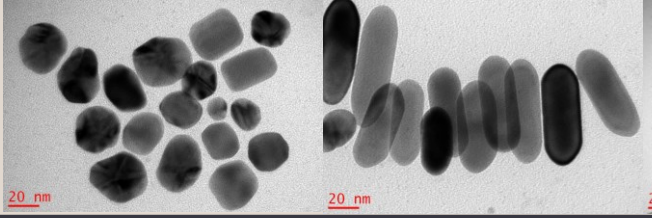
QUENTIN BAUERLIN



"TEM images of gold nanoparticles made during my PhD"

9, rue Ste Barbe
68210 ALTENACH
FRANCE

Ph. : 06.33.95.67.07
Email : quentin.bauerlin@uha.fr
17 September 1994
www.linkedin.com/in/quentin-bauerlin

Postdoctoral researcher

Volumetric additive manufacturing of porous carbon electrodes for supercapacitors

SKILLS AND QUALIFICATIONS

Methods of characterization

- Ellipsometry
- Optical microscope
- AFM
- Fourier transform IR spectroscopy
- UV-visible spectroscopy
- DSC / ATG
- HPLC
- H-NMR
- TEM
- SEM
- DLS / Zeta potential
- Mechanical traction / compression
- Rheometer (viscosity/photo-rheology)
- Thermal camera

Computer skills

- Pack office
- **Origin**
- Gwyddion
- ChemSketch
- Regressi
- ImageJ
- **Blender**
- **Zotero**

Languages

English - Level B1

German - Level A2

EDUCATION

Master – Materials Science and Engineering FMFS option
*Université de Haute-Alsace - Mulhouse | **2019***

Bachelor's degree - Physics and Chemistry Chemistry option
*Université de Haute-Alsace - Mulhouse | **2017***

Scientific Baccalaureate S.V.T
*Lycée J-J Henner - Altkirch | **2013***

INTERESTS AND ACTIVITIES

Music : guitar (5 years) (Former member of the Sundgau Guitar School), piano beginner, violin, accordion
Sports : jogging, skateboarding, cycling, basketball
Leisure activities : reading (manga and scientific magazines), video games, juggling, drawing, etc.

PROFESSIONAL EXPERIENCE

Postdoctoral researcher - CNRS

*Institut de science des matériaux **IS2M** - Mulhouse | **September 2023***
*Supervisors : **Dr. Camélia Ghimbeu, Dr. Arnaud Spangenberg***
"Volumetric additive manufacturing of porous carbon electrodes for supercapacitors "

- Development of multifunctional materials (carbon and carbon/metalbased hybrids) by photopolymerization
- Tune the pore diameter of materials
- Optimization of **3D printing settings (VAM/DLP)**
- Design customized 3D objects to be successfully integrated in a supercapacitor device
- Characterizations of formulations and 3D materials using different analysis techniques

PhD in materials chemistry - CNRS (3 years)

*Institut de science des matériaux **IS2M** - Mulhouse | **2020***
*Supervisors: **Dr. Karine Mougin, Dr. Arnaud Spangenberg***
"4D printing of composite materials by photopolymerisation"

- Synthesis and characterization of **nanoparticles (spherical, rods, etc.) by chemical/photochemical/continuous flow**
- Functionalization of nanoparticles
- Development of new resins for additive manufacture by photopolymerization
- Creation of complex three-dimensional objects adapting to their environment (**4D objects**)
- Optimization of **3D printing settings (DLP/SLA)**
- Characterization of the manufactured objects
- Modelling structures for 3D printing
- Supervision of a 3rd year student (3A) from ENSCMu
- Carrying out and preparing lab practical course for M2 and 3A students

R&D internship - ISL (6 months)

*Institut franco-allemand de recherches de Saint-Louis - Saint-Louis | **2019***
*Supervisors : **Dr. Denis Spitzer, Dr. Marc Comet, Dr. Cédric Martin***
"Organic synthesis by Spray Flash Synthesis (SFS) and characterization of the products obtained"

- Modification of an existing system to adapt it to perform a synthesis
- Development of optimized synthesis protocols for the SFS system
- Development of a method for separating and purifying the synthetic product
- Search for characterization techniques adapted to the product
- Analysis of the innovations brought by this new method of synthesis
- Managing stock and orders for products and parts.
- Preparation of project progress meetings and providing ideas for improvement

R&D internship - CNRS (4 months)

*Institut de science des matériaux **IS2M** - Mulhouse | **2018***
*Supervisors : **Pr. Dominique Berling, Dr. Clémentine Bidaud***
"Photostructuring and characterization of a sol-gel material, doped with magnetic nanoparticles"

- Lab work supervision of L3 and L1 students
- Preparation of a **photocrosslinkable sol-gel solution**
- Nanostructuring using a single-mask interferometry
- Film deposition on substrate by spin-coating

Scientific communications

Publications :

* D. Peckus, A. Tamulevičiene, K. Mougin, A. Spangenberg, L. Vidal, Q.Bauerlin, M. Keller, J. Henzie, L. Puodžiukynas, T. Tamulevičius and S. Tamulevičius, Shape influence on the ultrafast plasmonic properties of gold nanoparticles, Opt. Express, 30, 27730-27745 (2022)
* Q. Bauerlin, X. Wu, T. Roland, D. Favier, A. Egelé, C. Gauthier, B. Leuschel, L. Josien, G. Schrodj, K. Mougin and A. Spangenberg, Investigation of the 4th dimension of PEGDA hydrogel architected by Digital Light Processing (ready for submission)
* Q. Bauerlin, X. Wu, T. Roland, D. Favier, A. Egelé, C. Gauthier, B. Leuschel, L. Josien, G. Schrodj, K. Mougin and A. Spangenberg, 4D hydrogel composite with complementary dual stimuli manufactured by DLP (ready for submission)

Patents :

* K. Mougin, G. Caffier, F. Ghellal, A. Spangenberg and Q. Bauerlin, Ink eradicating fluid and kit containing it, WO 2022/180190 A1, (2022)

Oral presentation :

* Q. Bauerlin & al., Elaboration of photosensitive composite resins for 3D printing by photopolymerization, PhotOnline - web-conférence , Octobre 2020, Mulhouse (Online), France
* Q. Bauerlin & al., Synthesis of metallic colloidal suspensions of controlled size and morphology for the fabrication of 3D composite objects, SCF-Alsace Young Scientist Webinar, Juin 2021, Online
* Q. Bauerlin & al., Synthesis of metallic colloidal suspensions of controlled size and morphology for the fabrication of 3D composite objects, 17ème Journée Scientifique GFP Section Grand-EST - FRMNGE, Juillet 2021, Mulhouse, France
* Q. Bauerlin & al., 4D printing by photopolymerisation, Young Scientist Day, Avril 2022, Mulhouse, France
* Q. Bauerlin & al. , Synthesis of metallic colloidal suspensions of controlled size and morphology for the fabrication of 3D composite objects, Curiosity a French-German Young Chemists Conference, Juin-Juillet 2022, Mulhouse, France
* Q. Bauerlin & al., Photopolymerisation of hydrogel for 4D printing, 1ère Journée Scientifique SCF-GFP Grand-EST, Juillet 2022, Besançon, France
* Q. Bauerlin & al., Moisture and light responsive composite hydrogel made by DLP 3D printing, PolyRay, Mars 2023, Mulhouse, France
* Q. Bauerlin & al., Moisture and light responsive composite hydrogel made by DLP 3D printing, ITI HiFunMat, Avril 2023, Mulhouse, France

Poster presentation :

* Q. Bauerlin & al., Synthesis of metallic colloidal suspensions of controlled size and morphology for the fabrication of 3D composite objects, Young Scientist Day, Février 2021, Mulhouse (Online), France
* Q. Bauerlin & al., Development of composite photoresists for 3D and 4D printing, French, Swiss and German Conference on Photochemistry, Photophysics and Photosciences (CP2P), Mai 2023, Mulhouse, France
* Q. Bauerlin & al., Toward the development of sensors and actuators by 4D printing, Lithuania School “Advanced materials and technologies”, Août 2021, Palanga, Lituanie
* Q. Bauerlin & al., Toward the development of sensors and actuators by 4D printing, Lithuania School “Advanced materials and technologies”, Août 2022, Palanga, Lituanie

Grants and competitions :

* SCF 2021 Congress – Nantes
* Winner of the "Mature your PhD" challenge, 2023, Strasbourg/Mulhouse

Contacts

References	Mail	Position
Arnaud SPANGENBERG	arnaud.spangenberg@uha.fr	CNRS research fellow
Camélia GHIMBEU	camelia.ghimbeu@uha.fr	CNRS research director
Karine MOUGIN	karine.mougin@uha.fr	Associate professor