

Milena LAMA, PhD

Born April 26, 1992
French nationality



EDUCATION

2016 - 2019

Ph. D. in Materials Chemistry at Sorbonne University and ESPCI Paris.

2015 - 2016

M. Sc. in Materials Chemistry at Sorbonne University, graduated with honors.

2012 - 2015

Engineer Diploma in Urban Engineering (EIVP Grad School), graduated with honors. Erasmus exchange semester in 2014 at the University of Southampton, United Kingdom.

2009 - 2012

Preparatory class: intensive course in mathematics, physics and chemistry to prepare nationwide competitive exams for French engineering graduate schools.

CONTACT

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SKILLS

Chemical synthesis, hydrogel synthesis

Collagen & DGI self-assembly

Biomineralization

Mechanical characterization, rheology

Microscopy (SEM, TEM, PLOM)

Spray-drying, DSC, TGA, DVS, XRD

LaTeX, Windows, MS Office, Origin

Teamwork

Article writing

Presentations

Science popularization

LANGUAGES

French ●●●●●

English ●●●●●

German ●●●●●

Japanese ●●●●●

WORK AND RESEARCH EXPERIENCE

01/2021 – 02/2023

JSPS fellow, Hokkaido University, Japan
Structure and properties of photonic hydrogels.
Host researcher: Pr. Jian Ping GONG

12/2019 – 11/2020

Postdoctoral researcher, Sorbonne University and SATT Lutech, France
Development of a patent on injectable hybrid materials. Including 3 months collaboration with a global pharmaceutical company.
Supervisor: Pr. Nadine NASSIF

10/2017 - 09/2019

Science popularizer, Universcience, France
Oral presentations and live experiments about different scientific topics in front of a general audience (frequently 50-100 people) in the Chemistry Department at Palais de la Découverte. 32 full days per year.

10/2016 - 09/2017

Graduate teaching assistant, Sorbonne University, France
Practical work for bachelor students in thermodynamics (Chemistry Department). 64 hours per year.

10/2016 - 09/2019

Ph. D., Sorbonne University and ESPCI Paris, France
"Structure-properties relationship in dense collagen gels produced by injection of spray-dried collagen".
Co-directors: Pr. Nadine NASSIF, Dr. Alba MARCELLAN
Co-supervisors: Pr. Cédric BOISSIERE, Dr. Francisco M. FERNANDES

02/2016 - 07/2016

Master's thesis, ESPCI Paris, France
"Mechanical and rheological properties of PDMA and PDMA/Silica hydrogels at different swelling states".
Supervisor: Dr. Alba MARCELLAN

SUPERVISION EXPERIENCE

10/2021-present: PhD student

04/2019–05/2019: Bachelor student

02/2018–07/2018: second year
Master's student

VOLUNTEER EXPERIENCE

Team leader for organizing the lab's exhibition at the Village of Chemistry (20 PhD candidates involved), Paris, February 2018

Science popularizer during Science Celebration Days, Collège de France, October 2017

Trainer for the "Biomimetism and bio-inspiration" event of Main à la pâte Foundation, Sorbonne University, January 2017

Science popularizer during Science Celebration Days, Collège de France, October 2016

AWARDS

CNRS-JSPS Fellowship n°P20769, 24 months duration, awarded 1st April 2020

PhD thesis prize in Chemistry of Materials, Société Chimique de France, 4th December 2019

Best oral presentation award, Doctoral School ED397 Physics and Chemistry of Materials, December 2018

GRANTS

JSPS Grant-in-Aid n°21F20769, ¥2,400,000, 20 months duration, awarded 7th May 2021

MEMBERSHIPS

The Society of Polymer Science, Japan

Research Group on Polymer Gels (SPSJ)

02/2015 - 07/2015

Engineer in sustainable development, EVESA, Paris, France
"Creation of a lighting guide for Paris' parks: preserving biodiversity and saving energy".

06/2014 – 09/2014

Undergraduate research student, University of Tokyo, Japan
"Ecosystem simulation for the Ofunato Bay, Japan".

PUBLICATIONS & PATENTS

*M. Lama, J. P. Gong**, "Mechanical reinforcement of lamellar bilayer hydrogels by small amounts of co-surfactants", *submitted*.

*M. Lama, E. Bessot, C. Bussola Tovani, T. Azais, G. Ducouret, T. Bortolotto Ibarra, N. Nassif**, "Injectable biomimetic mineralized acellular tissue", *in preparation*.

T. Bortolotto Ibarra, I. Krejci, N. Nassif, M. Lama, C. Bussola Tovani, "Compositions for use as dentine substitute", PCT/FR2022/050543, **2022**

N. Nassif, M. Lama, C. Bussola Tovani, M. Robin, "Compositions for mineralized tissues repair and regeneration", PCT/FR2022/050542, **2022**

M. Lama, B. Raveendranathan, J. Brun, F. M. Fernandes, C. Boissière, N. Nassif, A. Marcellan**, "Biomimetic tough gels with weak bonds unveil the role of collagen from fibril to suprafibrillar self-assembly", *Macromolecular Bioscience*, **2021**.

M. Lama, F. M. Fernandes, C. Boissière, N. Nassif, Know-how DSO2020017202 related to the Patent WO2016146954A1 "Injectable collagen suspensions, the preparation method thereof, and the uses thereof, particularly for forming dense collagen matrices", **2020**.

*C. Salameh, F. Salviat, E. Bessot, M. Lama, J-M. Chassot, E. Moulongui, Y. Wang, M. Robin, A. Bardouil, F. Artzner, A. Marcellan, C.; Sanchez, M-M. Giraud-Guille, M. Faustini, R. Carminati, N. Nassif**, "Origin of transparency in scattering biomimetic collagen materials", *PNAS*, **2020**.



M. Lama, F. M. Fernandes, A. Marcellan, J. Peltzer, M. Trouillas, S. Banzet, M. Grosbot, C. Sanchez, M-M. Giraud-Guille, J-J. Lataillade, B. Coulomb, C. Boissière, N. Nassif**, "Self-assembled Collagen Microparticles by Aerosol as a Versatile Platform for Injectable Anisotropic Materials", *Small*, **2019**.

Inside front cover, *Small*, **2020**.

CONFERENCES

SPSJ 34th Annual Meeting of Research Group on Polymer Gels, Tokyo, Japan, January 2023 – Oral contribution – "Mechanical reinforcement of self-assembled photonic hydrogels by small amounts of co-surfactants"

10th Conference on Exploring Next-Generation Materials Science and Nanoscience & Workshop on Soft and Nano Materials, Sapporo, Japan, January 2023 – Oral contribution – “Mechanical reinforcement of lamellar bilayer hydrogels by small amounts of co-surfactants”

SPSJ 71st Fall Meeting, Sapporo, Japan, September 2022 – Oral contribution – “Role of co-surfactants on improving the mechanical response of lamellar photonic hydrogels”

SPSJ 37th Summer University in Hokkaido, Sapporo, Japan, August 2022 – Poster contribution – “Modification of the mechanical response of self-assembled photonic hydrogels by small amounts of co-surfactants”

Soft Matter Summer School, Cargese, France, July 2022 – Poster contribution – “Modification of the macroscopic properties of lamellar photonic hydrogels by small amounts of co-surfactants”

Multifunctional, Hybrid and Nanomaterials, Sitges, Spain, March 2019 – Oral contribution – “Mechanical properties of biomimetic hydrogels produced by injection of spray-dried collagen”

Doctoral School Days, Paris, France, December 2018 – Poster and oral contributions – “Mechanical properties of tissue-like hydrogels produced by injection of spray-dried collagen”

Design of Soft Green Materials (workshop at MIT), Cambridge, MA, USA, November 2018 – Oral contribution, replacing Nadine Nassif – “From collagen self-assembly to biomimetic materials: Applications in biomineralization and tissue engineering”.

Polymer Networks & Gels, Prague, Czech Republic, June 2018 – Oral Contribution – “Mechanical properties of tissue-like hydrogels produced by injection of spray-dried collagen”.

Collagen in all its forms, Lyon, France, November 2017 – Oral contribution – “Mechanical properties of dense collagen scaffolds produced by injection of spray-dried collagen in suspension”.

Soft Matter Days, Gif-sur-Yvette, France, June 2017 – Poster contribution – “Spray-dried collagen for injecting dense collagen scaffolds with tunable mechanical properties”.

REFERENCES

Pr. Jian Ping GONG: gong@sci.hokudai.ac.jp

Pr. Nadine NASSIF: nadine.nassif@sorbonne-universite.fr

Pr. Cédric BOISSIERE: cedric.boissiere@sorbonne-universite.fr