

Arsène Chemin

Engineer & PhD Student

about

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languages

Native speaker French
Fluent in English
Advanced in Italian
Intermediate in
German

programming

Common use of
*Open & Microsoft
Office, L^AT_EX, Matlab,
Gaussian
Use of COMSOL,
Python, Mathematica,
C++*

interests

Doing Physics and Understanding it : from experiments to models. And even more: sharing knowledge, contemporary art, electronic and classical music, architecture, climbing, rowing and motorbiking.

education

- 2015-2018 **M.Sc in Physics, "Sc. de la Matière"** ENS de Lyon - Université Lyon 1, FRANCE
Average mark 16.6/20
- Double Degree in Physics Engineering** Politecnico di Milano, ITALY
Average mark 23.6/30
- 2014-2015 **B.Sc in Physics, "Sc. de la Matière"** ENS de Lyon - Université Lyon 1, FRANCE
Average mark 15.8/20
- 2012-2014 **"Classe préparatoire" in Physics & Chemistry** Lycée du Parc, Lyon, FRANCE

research experiences

- from 2018 **Institut Lumière Matière, Lyon, FRANCE**
University of Lyon PhD Student
I am currently a PhD student working on the nanoparticles nucleation processes in laser induced plasma. david.amans@univ-lyon1.fr
- 06-08 2018 **College of Art and Sciences, Tokyo, JAPAN**
University of Tokyo JSPS Summer Research Program
I was invited to work with Prof. Fumitaka Mafuné and his team in Tokyo University during three months. I investigated reaction dynamics on clusters created by laser ablation. mafune@cluster.c.u-tokyo.ac.jp
- 01-03 2018 **Département de Physique, Lyon, FRANCE**
Ecole Normale Supérieure Research Internship
I worked with N. Plihon on the characterisation of an emissive cathode for the study of turbulences in Low-Pressure Radio-Frequency Plasmas. nicolas.plihon@ens-lyon.fr
- 05-07 2016 **School of Chemistry, Bristol, UK**
University of Bristol Research Internship
I worked with Professor A. Orr-Ewing on H-atom exchanges between A-T DNA basis pairs. Used ultra fast UV-IR spectroscopy, 2D-IR spectroscopy and Gaussian modeling software. a.orr-ewing@bristol.ac.uk
- 06-07 2015 **Institut Lumière Matière (ILM), Lyon, FRANCE**
Université Lyon 1 - CNRS Research Internship
I worked on the production and analysis of metal oxide nanoparticles generated by Laser Ablation in Liquids (LAL).

teaching experiences

- from 2018 **Physics Departement, Lyon, FRANCE**
University of Lyon 1 part-time teacher at the university
Giving tutorial classes and practical work in general physics, electromagnetism and thermodynamics at the University Lyon 1
- Physics Departement, Lyon, FRANCE**
ENS de Lyon part-time teacher at the university
Supervisation of students preparing the International Physicist Tournament (IPT), a reference tournament based on experimental and theoretical researches for undergraduate students competing through oral "fights".

awards

- Nov. 2020 **Pulsalys Young Researchers Programme** Lyon, FRANCE
Won the prize for the best technology and was selected for a startup development program.
- March 2020 **MT180** Lyon, FRANCE
Selected for the region final of Ma These en 180s, an oral competition on PhD outreach. [YouTube] (delayed)
- May 2018 **ANGEL Conference** Lyon, FRANCE
Won the first prize of the best Poster. My poster was about dopping nanoparticles created by laser ablation in a solvent containing salts.
- June 2017 **Società italiana di fisica** Milan, ITALY
Recieved a prize for leading the creation of the Italian Physics Tournament and their first participation at the Internationnal Physicist Tournament (IPT)
- May 2016 **International Physicist Tournament** Paris, FRANCE
Won the 1st prize at the Internationnal Physicist Tournament (IPT)

applications

- 2020-present **Institutionnal work** Institut Lumière Matière, FRANCE
Member of the institute committee as PhD's representative.
- 2017-present **Associative work** French Society of Physics, FRANCE
Founder and active member of the Young section of the French Society of Physics in Lyon. Organisation of scientific popularisation events and graduation ceremonies.
- 2016-2017 **Team managment** Politechnico di Milano, ITALY
Creator and leader of the first national italian team for the IPT which won the 6th prize of the international competition in Gothenburg, SWEDEN, May 2017.
- 2015-2016 **Associative work** ENS de Lyon, FRANCE
I Led the rowing team and was the graphic artist for the ENS sport association.

international conferences

[Oral] **A. Chemin, M. Fawaz, T. Vidril, D. Amans**, *Shock-Waves Generated by Laser ablation in Liquids*, 6th Conference on Advanced Nanoparticle Generation and Excitation by Lasers in Liquids (ANGEL), May 2020, Wuhan, CHINA. (delayed)

[Poster] **A. Chemin, V. Motto-Ros, G. Ledoux, S. Hermelin, C. Dujardin, D. Amans**, *Time Resolved LIBS-LIF measurements on Laser-Generated Plasma*, 6th Conference on Advanced Nanoparticle Generation and Excitation by Lasers in Liquids (ANGEL), May 2020, Wuhan, CHINA. (delayed)

[Accepted talk] **A. Chemin, K. Miyajima, P. Melinon, F. Mafune, D. Amans**, *Micro-Canonical Description of Growth and Thermal Decomposition of Alumina Clusters: Effect of the Quenching Gas*, Mechanisms and non-linear problems of nucleation and growth of crystals and thin films, July 2019, Saint-Petersburg, RUSSIA.

[Poster] **A. Chemin, J. Lam, C. Dujardin, G. Ledoux and D. Amans**, *Doping nanoparticles from ions dissolved in the liquid: the case of Gd₂O₃:Eu³⁺*, 5th Conference on Advanced Nanoparticle Generation and Excitation by Lasers in Liquids (ANGEL), May 2018, Lyon, FRANCE.

national workshops

[Invited talk] **A. Chemin, G. Ledoux, V. Motto-Ros and D. Amans**, *LIBS-LIF for the study of diatomic molecules in laser generated plasma*, Congrès de la Société de Chimie de France, Juin 2021, Nantes, FRANCE.

[Oral] **A. Chemin, D. Amans, J. Lam, G. Ledoux, V. Motto-Ros and C. Dujardin**, *Laser Induced Plasma in Liquids*, Les premières rencontres scientifiques Plasmas Froids et Lasers, November 2019, Toulouse, FRANCE.

[Poster] **A. Chemin, K. Miyajima, P. Melinon, F. Mafune, D. Amans**, *Micro-Canonical Description of Growth and Thermal Decomposition of Alumina Clusters: Effect of the Quenching Gas*, Les premières rencontres scientifiques Plasmas Froids et Lasers, November 2019, Toulouse, FRANCE.

publications

A. Chemin, M. Fawaz, K. Lebbou, C. Dujardin, D. Amans, *Local Measurement of the Mechanical Properties using Laser Stimulation* – In Preparation for Submission in December 2020

J. Lam, A. Chemin, C. Martinet, A. Cornet, K. Lebbou, C. Dujardin, G. Ledoux, F. Chaput, B. Gökce, S. Barcikowski, and D. Amans, *Ruby based nanometric pressure sensors* – In Preparation for Submission in December 2020

A. Chemin, K. Miyajima, P. Melinon, F. Mafune, D. Amans, *Microcanonical Nucleation Theory for Anisotropic Materials Validated on Alumina Clusters*. The Journal of Physical Chemistry A, 124(11), 2328-2334. (2020)

A. Chemin, J. Lam, G. Laurens, F. Trichard, S. Moncayo, V. Motto-Ros, G. Ledoux, V. Jary, V. Laguta, M. Nikl, C. Dujardin, D. Amans, *Doping and impurities issues in pulsed laser ablation in liquids synthesis*. Nanoscale Advances 1 (10), 3963-3972. (2019)

K. Röttger, H. J. B. Marroux, A. F. M. Chemin, E. Elsdon, T. A. A. Oliver, S. T. G. Street, A. S. Henderson, M. C. Galan, A. J. Orr-Ewing, and G. M. Roberts, *Is UV-Induced Electron-Driven Proton Transfer Active in a Chemically Modified A·T DNA Base Pair?* The Journal of Physical Chemistry B 121, 4448–4455 (2017).

A. Chemin, V. Levy Dit Vehel, A. Caussarieu, N. Plihon, N. Taberlet, *The physics of pot-in-pot coolers*. American Journal of Physics, 86 (3), 206-211 (2018)

A. Chemin, P. Besserve, A. Caussarieu, N. Taberlet, N. Plihon, *Magnetic Cannon: the physics of the Gauss rifle*. American Journal of Physics 85, 495 (2017)