

HOSTING OFFERS FROM CNRS, FRANCE MSCA-POST DOCTORAL FELLOWSHIPS 2024

Last date to contact potential supervisors: 15 July 2024

Chemistry (CHE)

Name of the Supervisor and Email ID	Name of the Laboratory/institute and website	Research Areas	Desired profile of the post-doctoral candidate
Alain WALCARIUS alain.walcarius@univ- lorraine.fr	Laboratory of Physical Chemistry and Microbiology for Materials and the Environment (LCPME) LCPME – CNRS – University of Lorraine, https://www.lcpme.ul.cnrs.fr/en/elan/	Electrochemistry – Sol-Gel Materials – Mesoporous Silica Films – Sensors – Organic- Inorganic Hybrids – Nanostructured	The applicant should be a chemist (holding a PhD for 2 to 5 years) with background in (molecular) electrochemistry and some knowledge in the chemistry of (silica-based) materials and related organic-inorganic hybrids (including nanomaterials such as ordered mesostructures or nanostructured thin films).
			with good track record in electrochemistry and materials sciences. He/she should be able to develop an original research project dealing with functionalization and/or Nano

			structuration of electrode surfaces, for possible applications in one of the following fields: preferably molecular electronics or electrochromic devices, and maybe also separation science, electrochemical sensors or electrochemical energy storage devices.
Jacques LALEVEE Jacques.lalevee@uha.fr Michael SCHMITT Michael.schmitt@uha.fr	Molecular PhotoChemistry and PhotoPolymerization (MP2P) The Institute of Materials Science of Mulhouse (IS2M), CNRS/Université de Haute Alsace (UMR7361) http://www.is2m.uha.fr/	Photopolymerization, photochemistry, photoinitiators, photopolymers	Development of biosourced polymers obtained by photopolymerization processes and study of their depolymerization/recycling behaviors
Olivier DAUCHOT olivier.dauchot@espci.fr	Gulliver Lab, CNRS and ESPCI-Paris PSL. UMR 7083 <u>https://gulliver.spip.espci.fr/?olivier-dauchot-128</u>	Research area Keywords: Active matter, Collective Dynamics, Swarm Robotics, Reinforcement Learning	A good background in physics and statistical physics in particular. A good experience in running table top experiments, using camera acquisition, computer control, data acquisition, 3D manufacturing, etc A very good knowledge of Matlab or Python is mandatory. A good level of autonomy is expected and a strong enthusiasm is desired.
Claude ESTOURNES <u>claude.estournes@univ-</u> <u>tlse3.fr</u>	CIRIMAT, Inter-university Center for Research and Engineering of Materials CNRS, Université Toulouse 3 Paul Sabatier - Toulouse-INP (UMR 5085) <u>https://cirimat.cnrs.fr/</u>	 Spark Plasma Sintering, Functional Ceramics, Sintering mechanisms, Finite Element modelling of SPS Additive Manufacturing (Binder Jetting, Laser powder bed fusion, fused deposition modelling) Mechanical, electrical properties 	We are looking for a motivated and passionate candidate to join our research team as a PhD student in materials science. The ideal candidate should possess a Master's level degree (or equivalent) in materials science or a related field, with a strong understanding of the fundamental principles of materials science. Prior experience in shaping by sintering and/or finite elements modelling would be a valuable asset. Candidates with practical experience in these areas will be particularly considered. The candidate should demonstrate a high level of autonomy, problem-solving skills, and be able to work effectively within a multidisciplinary team. Scientific curiosity, the

			ability to learn quickly, and a strong motivation for academic research are essential qualities.
Daniel GRANDE Daniel.grande@ics- cnrs.unistra.fr	Polymer engineering (IP2) and Organized molecular and macromolecular complex systems (SYCOMMOR),	Polymor physics, polymor chamistry, polymor	We seek a physical chemist with background in polymer materials, X-ray diffraction, DSC, and electron microscopy. The postdoctoral fellow will have to elaborate porous polymer materials with functional proportion from thermo
Jean-Michel GUENE	CNRS- Strasbourg University http://www.ics-cnrs.unistra.fr/member- 1546-Grande%20Daniel.html http://www.ics-cnrs.unistra.fr/member- 141-Guenet%20Jean-Michel.html	characterization, synthesis and characterization of self-assembled systems, gels, organogels, organic conducting materials, porous materials	with functional properties from thermo- reversible gels and organogels. These materials will be characterized by X-ray and neutron scattering, SEM and TEM for investigating their structure at different scale lengths, by DSC for determining their thermodynamic behavior (temperature-concentration phase diagrams), as well as by rheology, porosimetry, and conductimetry for evaluating their specific properties.
Patrick LACROIX- DESMAZES <u>patrick.lacroix-</u> <u>desmazes@enscm.fr</u>	Department "Macromolecular Chemistry and Materials" (C3M), Institut Charles Gerhardt Montpellier (ICGM), CNRS-UM-ENSCM UMR 5253 <u>https://www.icgm.fr/en/the-institute/the- departments/d2/</u>	Polymer chemistry; polymerization; radical polymerization; click-chemistry; thiol-ene reaction, thio-Michael reaction, aza-Michael reaction; biodegradable polymers; biobased polymers; colloids; aqueous dispersed media; latex; capsules.	The postdoctoral applicant should have experience in organic chemistry and in polymer chemistry. He/she should have experience in characterization techniques used for molecular and macromolecular compounds (such as NMR, SEC, UV, DSC, TGA,). He/she should have good knowledge in colloidal science and in the related characterization techniques (such as DLS, SLS, MEB, TEM, cryo-TEM,). He/she should be experienced in performing experiments under inert atmosphere. He/she should be fluent in oral and written English, curious, rigorous, autonomous, eager to learn, highly motivated, have a strong team spirit, open minded, able to adapt to new countries and cultures. He/she should be first author of several published articles. He/she should have good grades and a good track record.
Mathieu ETIENNE mathieu.etienne@cnrs.fr	Laboratory of Physical Chemistry and Microbiology for Materials and the Environment (LCPME) <u>https://www.lcpme.ul.cnrs.fr/en/lcpme-2/</u>	Long duration energy storage; redox flow battery; bioconversion of waste to energy	We are looking for candidates with good expertise in electrochemistry and/or electrochemical energy storage solutions. A research experience in redox flow batteries and /or in modeling of electrochemical processes will be much appreciated.

Max McGillen	Atmospheric Research Group	Kinetics; Atmospheric chemistry; Chemical	You are highly motivated and able to formulate
max.mcgillen@cnrs-	Institut de Combustion Aerothermique	mechanisms; Air pollution; Volatile organic	new ideas. You can initiate and manage
orleans.fr	Réactivité Environnement (ICARE)	compounds	scientific projects through to completion. You
			will be expected to take full advantage of the
	CNRS-Orléans		large variety of experimental and analytical
			facilities that are available at our institute in
	https://icare.cnrs.fr/en/en-research/en-		order to address important scientific questions
	facilities/en-ra-helios/		in atmospheric chemistry, this will include a
			variety of mass spectrometric, spectroscopic
			and chromatographic techniques. Your
			research will be complementary to that of our
			team, including laboratory and/ or field
			measurements made to a world-class standard.
			You will be comfortable working as part of a
			team, where you will assist in the training and
			guidance of research students, as well as
			participating in detailed scientific discussions
			with other group members. You will have
			demonstrated your aptitude in communicating
			scientific research in the form of research
			papers and oral presentations at a high level,
			and will be open to participating in
			international collaborations and opportunities
			as they arise.

Environment and Geosciences (ENV)

Name of the Supervisor and Email ID	Name of the Laboratory/institute and website	Research Areas	Desired profile of the post-doctoral candidate
Jérôme LAVE Jerome.lave@univ- lorraine.fr	Centre de Recherches Pétrographiques et Géochimiques (CRPG) CNRS- Université de Lorraine	Active tectonics, geomorphology, erosion , cosmogenic nuclides, experimental fluvial erosion, landscape numerical modeling, landslides, remote sensing technique to track surface deformations, Himalaya	Candidates will hold a PhD in Earth sciences (geomorphology, surface hydrology, geophysics) or in granular Physics with research interests at the interface between geologic processes and hydrology, experimental work.

https://crpg.univ-lorraine.fr	r/en/tectonics-	Depending on the research subject of the post-
erosion-and-the-evolution-	of-relief-en/	doc, some experience in numerical modelling,
		experimental work, remote sensing or
		geochemistry could be welcome.
		Abilities to work in an international
		environment, to communicate and to write
		scientific papers in an autonomous way are
		expected.
		Although prior knowledge of French is not
		mandatory, spoken and written English
		proficiency is needed.

Information Science and Engineering (ENG)

Name of the Supervisor and Email ID	Name of the Laboratory/institute and website	Research Areas	Desired profile of the post-doctoral candidate
David González Ovejero	Institute of Electronics and Digital	antenna arrays (passive, reconfigurable, beam	Publications: in total at least 3 or 4 peer-
david.gonzalez-	Technologies (IETR)	steering, etc.), millimeter and THz waves,	reviewed papers in journals in the first quartile
ovejero@univ-rennes.fr		metasurfaces, periodic and non-periodic	(Q1).
Ronan Sauleau ronan.sauleau@univ- rennes1.fr	https://www.ietr.fr/en/sumit-sub- millimeter-and-millimeter-wave-antennas- team	structures (transmit-arrays, frequency selective surfaces, polarizers, wide angle impedance matching, etc.), mm-wave and photonic beam- formers.	Desired background: antenna theory, microwave engineering, computational electromagnetics, antenna arrays, periodic structures, millimeter-waves and/or Terahertz radiation.
			Desired specific skills: Programming (Matlab or Python), commercial softwares (HFSS, CST, or COMSOL).
			Required language skills: Proficiency in written and spoken English (knowledge of French is not required).

Life Sciences (LIF)

Name of the Supervisor and Email ID	Name of the Laboratory/institute and website	Research Areas	Desired profile of the post-doctoral candidate
Jean-Baptiste Charbonnier jb.charbonnier@i2bc.paris- saclay.fr	Department of Biochemistry, Biophysics and Structural Biology Institute of Integrative Biology of the Cell (I2BC) University Paris-Saclay <u>https://www.i2bc.paris-saclay.fr/</u> <u>https://www.i2bc.paris-saclay.fr/ https://www.i2bc.paris-saclay.fr/nuclear- enveloppe-telomeres-and-dna-repair/</u>	DNA repair, Double-strand break repair, Cancer, Structural Biology, CryoEM, X-ray Crystallography, Biophysical measurement of Protein interactions, , Drug Design	Biochemist, Structural Biology, interest in DNA metabolism (DNA repair, recombination and replication)
Marc F. Lensink marc.lensink@univ-lille.fr	Computational Biology Institute for Structural and Functional Glycobiology, University of Lille, France <u>https://ugsf.univ-lille.fr/en/les-</u> <u>equipes/computational-molecular-</u> systems-biology	protein-protein interaction, CAPRI, molecular modeling, molecular dynamics, structural bioinformatics, alphafold-modeling	Solid training in bioinformatics approaches, able programmer, knowledge of biology and interest in evolution
Robert Arkowitz arkowitz@unice.fr	Institute of Biology Valrose (iBV) UMR CNRS7277 - INSERM1091 - Université Côte d'Azur <u>http://ibv.unice.fr</u> <u>http://ibv.unice.fr/research- team/arkowitz/</u>	Fungal biology, fungal pathogen, Candida albicans, fungal infection, fungal growth, cell polarity, membrane traffic, mechanical forces, biophysics, antifungal drug tolerance, host cell interactions.	 PhD in a relevant discipline (Microbiology, Cell Biology or Biophysics) Experience or strong interest in microbiology, bacterial and fungal cultures Excellent communication skills (English, spoken and written) Self-motivated and able to work independently in a team Team player with excellent interaction skills Ideally experience in live-cell wide-field and/or confocal microscopy or computational image analyses

Nacho Molina nacho.molina@igbmc.fr	Department of Developmental Biology and Stem Cells, Stochastic Systems Biology Lab, IGBMC – CNRS – University of Strasbourg. <u>https://www.igbmc.fr/en/igbmc-</u> <u>1/departments/developmental-biology-</u> <u>and-stem-cells</u>	Computational and Systems Biology, Biophysics, Machine Learning, Gene Regulation, Single Cell Biology.	The ideal candidate should have a PhD degree in Computational Biology, Bioinformatics, Machine Learning, Data Science or similar. Proven experience applying and developing machine learning tools for the analysis of biological data is expected. Previous experience analyzing single-cell sequencing experiments will be a plus. A strong background in programming is expected. A high motivation and a good capacity to work in a multidisciplinary team are also important. English is the working language of the team and the IGBMC.
Virginia LIOY <u>virginia.lioy@i2bc.paris-</u> <u>saclay.fr</u>	Conformation and Segregation of the Bacterial Chromosome lab, Institute for Integrative Biology of the Cell (I2BC). <u>https://www.i2bc.paris-saclay.fr/equipe- conformation-segregation-bacterial- chromosome/</u>	Bacterial genome biology, functional genomics, bacterial lifestyles, comparative genomics, deep- learning	The lab is seeking a computational biologist with solid knowledge on genome biology, deep- learning and applied statistical methods. In addition, the candidate should have good organization skills, be able to work as part of a team and excellent written and oral communication skills. The candidate will apply and develop deep-learning approaches to analyze and integrate large dataset already available in the lab. The main objectives of his/her project are: 1. To perform a comparative analysis within the bacterial tree of life to infer principles of genome organization which are (or not) species specific 2. To perform a comparative analysis between different bacterial subpopulations obtained within the same species to unveil specific rules associated to bacterial lifestyles.
Pascal THEROND therond@unice.fr	Institute of Biology Valrose http://ibv.unice.fr/research- team/therond/signalife.unice.fr	Morphogenesis – Cell/Cell Interaction – Secretion – Signaling – Extracellular Matrix – Hspgs – Hedgehog – Wnts – Bmps – Drosophila.	Combined approaches of molecular biology, genetics, biochemistry and confocal imaging are developed to characterize the molecular mechanisms involved in the biosynthesis and composition of Hedgehog particles; the emphasis of this study will be on the use of super-resolution imaging techniques and confocal analysis, associated with proteomic and lipidomic analyzes after purification of the Hedgehog particles.

Physics (PHY)

Name of the Supervisor and Email ID	Name of the Laboratory/institute and website	Research Areas	Desired profile of the post-doctoral candidate
Olivier Dulieu <u>Olivier.dulieu@universite-</u> paris-saclay.fr	Laboratoire Aimé Cotton (LAC) CNRS and U. Paris-Saclay UMR 9025 <u>http://www.lac.u-psud.fr/</u>	Structure of atoms, molecules, ions / Formation, cooling and spectroscopy of neutral and ionized molecules / Cold matter: dynamics, control and applications / Few and many-body systems / Ultra-cold chemistry, quantum simulation / Cold molecules, EDM, antimatter, hydrogen / Rydberg atoms, spectroscopy, sensors, simulations and quantum technologies / Cold ion and electron sources, implantation, microscopy, imaging	Theorist with strong skills in quantum dynamics, ultracold matter, high performance computing, few- body systems And/Or Experimentalist with strong skills in quantum dynamics, spectroscopy, lasers, vacuum, precision measurements, preferably in the context of ultracold matter.
Björn HERRMANN herrmann@lapth.cnrs.fr	Laboratoire d'Annecy-le-Vieux de Physique Théorique (LAPTh) <u>https://lapth.cnrs.fr</u> <u>https://lapth.cnrs.fr/~herrmann</u>	Particle physics phenomenology, dark matter, collider signatures, machine learning	The candidate should hold a PhD degree, obtained in a topic related to particle physics phenomenology. He/she has ideally worked on collider and/or dark matter related topics within extensions of the Standard Model of particle physics. Moreover, he/she has either experience in the application of machine learning techniques or is willing to learn such techniques with the aim of their application in particle physics phenomenology. He/she is able to conduct independent research and interact with the other members of the laboratory. Active participation in the lab's activities (seminars, workshops, journal clubs, etc.) is expected.
Ion Nechita ion.nechita@univ-tlse3.fr	TiqToqs - Toulouse Informatique Quantique and Theory of Open Quantum Systems, CNRS – Laboratoire de Physique Théorique Toulouse, LPT - Université Paul Sabatier – FERMI <u>https://ion.nechita.net/</u>	quantum information theory, random matrix theory, tensors, tensor decompositions, random tensor	We are looking for candidates with a strong mathematical profile coming from either mathematics or adjacent fields such as theoretical physics or computer science. Previous experience with quantum information theory and/or random matrix theory are highly appreciated.

Fabien ALET fabien.alet@cnrs.fr	Laboratoire de Physique Théorique (LPT), Toulouse, CNRS & Université de Toulouse <u>https://www.lpt.ups-tlse.fr/alet</u>	Condensed matter theory, Quantum physics, Many-Body quantum systems, Quantum phase transitions, Out of equilibrium quantum physics, Many Body	We welcome expression of interest for MSCA postdoc applications on a wide range of topics in many-body quantum physics and condensed matter theory: quantum phase transitions, out of equilibrium quantum physics many-body localization, entanglement, spin liquids, topology, computational aspects of the many- body quantum problem. Our team in Toulouse, France is well recognized for its world-leading expertise in numerical simulations of quantum strongly correlated systems, using a large panel of techniques and a large world-wide collaboration network. Applicants will find an excellent scientific environment to develop their scientific project. We work very closely with the candidate to write the best possible MSCA application. We expect applicants to have a very strong background and track record in condensed matter theory, ideally in computational and/or out-of-equilibrium aspects thereof.
Giorgio KRSTULOVIC <u>krstulovic@oca.eu</u>	Laboratoire J.L. Lagrange Observatoire de la Côte d'Azur, CNRS- UMR 7293 https://gkrstulovic.gitlab.jo	Quantum turbulence, superfluids, quantum vortices, wave turbulence	Applicants should have good theoretical understanding of fluid dynamics, turbulence and, ideally, some knowledge on superfluid vortex dynamics. Experience in high-performance computing (HPC) will be appreciated.
Fabienne GOLDFARB fabienne.goldfarb@universite- paris-saclay.fr	Laboratory LuMIn Laboratore Lumière-Matière aux Interfaces (LUMIN) UMR9024 CNRS- ENS PARIS-SACLAY- UNIV PARIS- SACLAY https://www.lumin.universite-paris- saclay.fr/en/node/11	Laser physics, atoms, spins, noise, correlations, non-linear optics, quantum optics	The post-doctoral applicant should have a strong interest for experimental works as well as for modelisation and numerical tools. He/she has a training and a PhD in physics and more specifically on lasers, atomic physics and/or non-linear and quantum optics.
Jérome DUBAIL j.dubail@unistra.fr	Centre Européen de Sciences Quantiques (CESQ) "Quantum Statistical Physics" lab Université de Strasbourg & CNRS https://www.cesq.eu/	Theoretical physics, quantum many- body physics, out-of-equilibrium physics, quantum gases, integrable vs. chaotic quantum dynamics, conformal field theory, tensor networks, topological phases	We welcome expression of interest from graduate students with a strong background in analytical and/or numerical approaches to: - out-of-equilibrium quantum many-body physics - low-dimensional quantum systems (1D and 2D) - quantum gases - quantum entanglement in many-body systems - Tensor Network states and algorithms