BIENVENÜE +

INTERESTS FOR SUPERVISION

VERSION 1 – OCTOBER 2025

This document lists Brittany-based researchers that are interested in hosting and supervising a Bienvenüe+ laureates. It aims to help potential applicants to find a supervisor for the upcoming Bienvenüe+ call. This list is not exhaustive.

These potential supervisors have indicated their research interests and expertise, as well as their contact details. Interested applicants are encouraged to directly contact them via email or via their websites.

Researchers that are interested in adding to this list an expression of interest can contact msca-bienvenue@bretagne.bzh

Number #	Title
1	Organic chemistry of pi-conjugated systems
2	Metal halide perovskites and perovskitoids: from ab-initio to empirical modeling for the development of frugal & environmentally friendly devices
3	Physics of metal halide perovskites: modelling and characterization of materials, nanostructures and devices
4	Biophysics of bacteria in soil at the microscale
5	Understanding Life Under High Pressure: A Molecular Exploration in T. barophilus
6	Continental aquatic ecology on wetlands
7	Assessing Biodiversity Linked to Small Water Infrastructures across Diverse Urban and Rural Settings
8	Genomics, physiology, ecology and/or applied aspects of algal pathogens interactions
9	Impact of thyroid hormonal system disruption on the health of rainbow trout intergenerationally exposed to PFAS
10	Understanding of interfacial behavior of plant protein
11	Advanced DSP and AI techniques for nonlinear compensation in coherent optical fiber networks
12	Plastic pollution in agriculture
13	Insect-Based Low-Tech Solutions for Plastic Waste and Sustainable Poultry Farming in Brittany
14	Ecogeochemistry
15	Functioning and Stability of complex ecological communities & ecosystems
16	Additive Manufacturing of Bio-Based Construction Materials
17	Advancing Digital Assessment of Movement Behaviour for Health Research
18	Numerical modeling of fused granulate fabrication process for digital twin applications

19	Advanced constitutive equation for fiber-filled fluids
20	Mobile Work and Tourism: Towards New Mobility Regimes in Brittany
21	Alternative asphalt materials for zero-carbon pavement
22	Hygrothermal performance and durability of geo-based building materials for sustainable construction though local moisture measurements
23	Control of multi-sensory simulations through human movement for immersive art and live performances
24	Modular and AI approaches to design and maintenance for Digital Editions
25	Regulation of the Microtubule Cytoskeleton
26	Glycochemistry

Interest #1	**Organic chemistry of pi-conjugated systems**		
Keywords	*Organic Electronics; pi-conjugated systems; Organic chemistry, Photophysics, electrochemistry, OLEDs*		
Laboratory	**ISCR**	**Host Institution**	**CNRS**
Description	Our group is involved in the design, the synthesis and the study of pi-conjugated systems for organic electronics. Particularly, we design organic host materials for OLEDs particularly high triplet energy. Our group is also strongly involved in the synthesis of nanohoops, new generation of macrocycles with a cylinder shape, possessing awesome electronic properties. We are organic chemists with also an expertise in photophysics, electrochemistry and organic electronics. We are working with many research groups worldwide such as those of Prof Cornil (Belgium), Jiang (China) and Adachi (Japan)		
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Interest #2	**Metal halide perovskites and perovskitoids: from ab-initio to empirical modeling for the development of frugal & environmentally-friendly devices**		
Keywords	*metal halide perovskites; hybrid organic/inorganic; quantum dielectric confinement; exciton physics; optical activity; chirality; photovoltaics; light emission; RMN; NQR;*		
Laboratory	**ISCR**	**Host Institution**	**CNRS**

Description	Candidates with excellent background in solid state physics would benefit from knowledge and collaborations in the field of metal halide perovskites and related perovskitoids to build an original theoretical project. This may range from state-of-the-art many-body ab-initio approaches down to empirical models, more suitable to tackle devices related open questions. Advice for both methodological developments and numerical simulations dedicated to specific experimental technics (for instance NMR/NQR, ultrafast spectroscopies) or, phase transitions,…) or physical observables, on perovskite semiconductor physics, organic photoactive or spectator cations, from bulk to nanostructures are possible.
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Interest #3	**Physics of metal halide perovskites: modelling and characterization of materials, nanostructures and devices**		
Keywords	*solid-state physics; tight-binding; k.p hamiltonian; exciton; many-body; electron-phonon; polaron; optoelectronic devices; solar cells; LED; quantum optics; semiconductors; quantum dots; quantum wells; thin films; Neutron scattering; Raman scattering; synchrotron ; XRD*		
Laboratory	**FOTON CNRS**	**Host Institution**	**INSA Rennes**
Description	FOTON team has a long-lasting experience in bridging abinitio or empirical simulations with structural, optical and vibrational characterization of perovskite materials, and low-dimensional (2D, 0D) perovskite nanostructures. Candidates with excellent background in solid state physics would benefit from knowledge, national and international collaborations of the perovskite group in Rennes. Combined experience in empirical modelling, advanced characterization of semiconductors and nanostructures are welcome in the perspective of optoelectronic device, solar cell and quantum optical emitter design		
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Interest #4	**Biophysics of bacteria in soil at the microscale**		
Keywords	*environmental transport phenomena - bacterial behavior - interfacial dynamics - microfluidics*		
Laboratory	**IPR**	**Host Institution**	**Université de Rennes**

Description	My main research interests lie at the interface between soft matter physics, fluid mechanics, biophysics, and environmental microbiology. Current work of my lab combines experiments – using tools such as microfluidics and microscopy – and theoretical models to understand microbial dynamics in the environment and their macroscopic impacts. One question we are particularly keen to explore within the interdisciplinary community of the campus of Rennes Beaulieu is how microbes such as bacteria interact with air-water interfaces in the soil and modify water dynamics there.
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Interest #5	**Understanding Life Under High Pressure: A Molecular Exploration in T. barophilus**		
Keywords	*Deep sea hydrothermal vent ; piezophiles ; archaea ; hyperthermophiles ; adaptation ; structural biology ; High hydrostatic pressure ; microbial physiology ; microbial genetics ; biochemistry*		
Laboratory	**BEEP**	**Host Institution**	**UBO**
Description	Our group is working on the cellular and molecular characterization of adaptation mechanisms to high hydrostatic pressure (HHP) in Thermococcus barophilus, a hyperthermophilic and piezophilic archaeon. The main objective is to investigate the role of specific transcriptional regulators in response to HHP. Our work involves detailed biochemical and biophysical analyses of protein-DNA interactions, including under HHP conditions, in order to better understand how T. barophilus can tolerate — and even thrive under — such extreme pressures. This remarkable adaptability enables its survival and proliferation near deep-sea hydrothermal vents. Beyond its fundamental scientific interest, this research aims to identify metabolites and enzymes with biotechnological potential, and to launch comparative genomic and metagenomic analyses. These will help assess the degree of conservation of the genes involved in pressure adaptation and extract key traits of life in extreme environments, such as those found in deep-sea hydrothermal systems.		
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Interest #6	Continental aquatic ecology on wetlands		
Keywords	*biodiversity, malaise trap, eDNA, carbon flux, invertebrates*		
Laboratory	**UMR6553 ECOBIO**	**Host Institution**	**Université de Rennes**
Description	My research focuses on landscape ecology in the context of global climate change and biodiversity conservation. My work aims to understand the functioning of animal communities and populations in heterogeneous environments subject to strong anthropogenic constraints, such as urban, agricutural and freshwater environments. Currently working on a national project on wetlands, we are examining flux of emerging aquatic insects in adjacent terresterial environments and ecosystem services associated.		
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Interest #7	**Assessing Biodiversity Linked to Small Water Infrastructures across Diverse Urban and Rural Settings**		
Keywords	*fountains, washhouses, wells, trough, biodiversity, microbiology, eDNA, groundwater, surface water*		
Laboratory	**BOREA**	**Host Institution**	**MNHN**
Description	Microbial Ecologist at the French National Museum of Natural History, within the BOREA unit (Biology of Aquatic Organisms and Ecosystems). I am based at the Concarneau Marine Station for my research. For over twenty years, my research has focused on the diversity, structure, and functions of microbial communities, particularly in microbial assemblages known as biofilms or microbial mats. I study how these communities interact with their environment (in marine or freshwater settings), respond to disturbances, and contribute to the functioning of aquatic ecosystems. My scientific career began with a PhD in 2006 dedicated to interactions within marine biofilms, their involvement in major biogeochemical cycles, and their sensitivity to pollutants. Between 2012 and 2018, I developed an integrated approach combining biochemical analyses (pigments, lipids, exopolymers), ecophysiology, biogeochemistry, trophic ecology, ecotoxicology, laboratory experimentation, and in situ observation, in order to build a unifying perspective on biofilms. This work led to my Habilitation à Diriger des Recherches (HDR, or Accreditation to Supervise Research). Today, my research is oriented toward contemporary environmental challenges: pollution, climate change, and the resilience of coastal habitats. To address these issues, I use tools such as metabolomics, chemical fingerprinting, metabarcoding, and integrated microbiome–metabolome approaches. Through my publications and collaborations, I strive to better understand and highlight the fundamental role of microbial communities in the functioning of aquatic ecosystems. I am also interested in science communication, invisible biodiversity (microorganisms, micro-invertebrates such as tardigrades), and in showcasing the role of microorganisms in ecosystem dynamics.		
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Interest #8	**Genomics, physiology, ecology and/or applied aspects of algal pathogens interactions**		
Keywords	*Algae; host-pathogen interactions ; functional genomics ; ecology ; evolution ; aquaculture ; conservation*		
Laboratory	**UMR 7245**	**Host Institution**	**MNHN**
Description	Originally trained as a molecular plant pathologist, I am a Professor at the Muséum National d'Histoire Naturelle (Paris, France). My research focuses on the ecology, physiology and genomics of diseases in algae, disease management in commercial algal cultivation, as well as their implications for policy-making towards biosecurity and conservation. Typically, I address research questions by establishing model interactions involving eukaryotic pathogens and their algal host(s). We then deploy biochemical, histological, molecular, genomic or biophysical investigation tools to characterise these models and link them with environmental data and/or in silico analyses. I would be especially open to discuss the possibility of a MSCA project based in the marine station of Concarneau, that would make use of the emerging seaweed aquaculture facilities there.		
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Interest #9	**Impact of thyroid hormonal system disruption on the health of rainbow trout intergenerationally exposed to PFAS**		
Keywords	*PFAS; endocrine disruptors; immunity; trout; reproduction; in vivo exposure*		
Laboratory	**PPN unit VIMEP**	**Host Institution**	**Anses**
Description	Scientists and public authorities have become increasingly interested in endocrine-disrupting compounds (EDCs) because of their increasing use and growing evidence of their harmful effects on humans and the environment. Recently, the disruption of the thyroid hormone system (THS) by EDCs has gained more attention due to its impact on many key physiological systems including the immune system (IS). Among EDCs, per and polyfluoroalkyl substances (PFAS) are ubiquitous and persistent in the environment as well as in organisms causing many biological disturbances. We are looking to investigate further the impact of THS disruption on global health in rainbow trout exposed during two generations to PFAS.		
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Interest #10	Understanding of interfacial behavior of plant protein		
Keywords	*plant protein, foam, interfacial behavior*		
Laboratory	**UMR Science and Technology of milk and egg**	**Host Institution**	**Institut Agro Rennes-Angers**
Description	To meet the increasing demand for protein and environment sustainability, there is a necessity to support protein transition by expanding the range of plant-based protein products. Foams are particularly challenging applications as they required protein with high solubility, fast diffusion towards the interface, flexibility and interactions ability. Moreover, plant protein ingredients often contain traces of fat and/or polysaccharides that impact their interfacial behavior and thus their foaming properties. A first project performed in the lab identified at least 3 interesting plant protein ingredients as egg white replacer in foams. We would like to further understand the interfacial behavior of these plant proteins in relation with their molecular state and especially their aggregation level, as a function of physicochemical and processing conditions and to rely it to macroscopic characterization of foams such as foaming capacity, foam stability and foam texture. The digestibility of foams obtained could also be considered. The mix research unit Science and Technology of Milk and Eggs has a high experience in the study of milk and egg protein functionalities. For nearly 10 years now, the researchers also included plant proteins in their subject areas and wished to transfer their expertise acquired on animal proteins to plant proteins. Especially, the group process-structure-functionality (PSF) explores the main molecular and supramolecular mechanisms behind the macroscopic behavior of food proteins such as foams.		
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Interest #11	Advanced DSP and AI techniques for nonlinear compensation in coherent optical fiber networks		
Keywords	*Optical fiber networks ; Coherent communications ; Optical performance monitoring ; Nonlinearity compensation ; Signal Processing ; Machine learning.*		
Laboratory	**Lab-Sticc**	**Host Institution**	**Bretagne INP**
Description	The surge in internet data traffic has driven demand for high-capacity communication networks. Long-haul coherent optical transmission using WDM in the C-band plays a key role, covering hundreds to thousands of kilometers. These systems use optical fibers and amplifiers but are affected by nonlinear impairments like stimulated scattering and Kerr effects. As data rates and bandwidth increase, signals become more sensitive to nonlinear distortions, especially in multi-band systems. Efficient optical channel compensation algorithms are needed to balance complexity and performance. High symbol rates and advanced modulation formats also require precise management of optical and electrical degradations. While deterministic nonlinearities can be addressed via digital signal processing (DSP), stochastic effects from Kerr nonlinearity, dispersion, polarization, and noise are harder to mitigate. Artificial Intelligence (AI), particularly Machine Learning (ML), offers potential by learning and predicting		

	complex nonlinear behaviors. Still, issues like laser phase noise and polarization mode dispersion remain challenging. Hybrid DSP/AI approaches are being explored for efficient, robust compensation. We are currently expanding our work to focus on low-complexity ML models to reduce processing demands. Adaptive, self-calibrating models will be investigated along with improved optimization techniques tailored to optical systems. Physics-based ML models will integrate optical knowledge to enhance detection at low complexity. AI-enhanced DSP will improve tracking and robustness, especially for polarization demultiplexing and phase noise. We carry out experiments at Bretagne INP in collaboration with LabOptic, a joint lab with Orange.
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Interest #12	**Plastic pollution in agriculture**		
Keywords	*biodegradable plastic ; mulch films ; food packaging ; waste ; methanisation ; compost ; aerobic degradation ; anaerobic degradation ;*		
Laboratory	**OPAALE**	**Host Institution**	**INRAE**
Description	Methanisation and composting are the two valorization solutions, very promising for transforming organic biomass into biogas and/or fertilizer for agricultural soils in anaerobic or aerobic conditions. However, the presence of collection bags or other plastic objects (single-use packaging, mulching film, etc.) in biowaste represents a source of major difficulties in technological terms (blockage of grinders, filters, etc.) and for the health of ecosystems (return to the ground of digestates) and humans. Our research aims at improving and better understanding the biodegradation of these plastics in biowaste management processes while preventing their health hazards. To achieve this, we must develop i) new approaches to aerobic and anaerobic treatments and pretreatments of biodegradable plastics, but also ii) analytical methods suitable for the real-time characterization and quantification of degradation residues whose toxicity and ecotoxicity must be evaluated.		
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Interest #13	**Insect-Based Low-Tech Solutions for Plastic Waste and Sustainable Poultry Farming in Brittany**		
Keywords	*Plastic biodegradation ; Insect-based solutions ; Low-tech innovation ; Tenebrionid beetles ; Alphitobius diaperinus ; Polystyrene degradation ; Microbiome and biodegradation ; Ecological transition ; Waste management ; Sustainable poultry farming ; Green agriculture*		
Laboratory	**UMR CNRS Ecobio**	**Host Institution**	**CNRS**
Description	I have over 20 years of research experience on the lesser mealworm, Alphitobius diaperinus, encompassing its thermal ecology (e.g., Colinet, 2011 CBP-A; Colinet et al., 2011 J. Therm. Biol.; Lalouette et al., 2007 FEBS J), insecticide resistance, and more recently, plastic biodegradation. My work in Brittany has characterized populations resistant to β-cyfluthrin, highlighting significant agricultural and economic impacts (Renault & Colinet, 2021 Insects; Colinet et al., 2023 Trends Entomol; Gouesbet et al., 2025 Insect Science). Building on this expertise, I have		

	explored the potential of A. diaperinus to degrade synthetic plastics, including polystyrene, demonstrating its capacity to fragment and digest polymers in controlled experiments (Richard et al., 2025, Environ Technol Innov). Parallel studies on micro- and nanoplastics in Drosophila, have deepened my understanding of plastic pollution hazards and organismal interactions (Renault et al., 2024 STOTEN; Richard et al., 2024 J. Hazardous Mater.; Richard et al., 2025 Ecotox. Environ. Safety). This unique combination of expertise on the model organism biology, pest management, and plastic biodegradation, positions me to explore innovative, low-tech, and sustainable solutions at the interface of applied ecology, agronomy, and environmental engineering. I am looking to work further on: (1) elucidating the underlying mechanisms underlying plastic degradation by A. diaperinus (microbiota, digestive enzymes, secondary biodegradation), and (2) exploring/designing novel, pest-resistant insulating materials in collaboration with technical and industrial partners. I am particularly keen on projects that bridge fundamental research and practical applications, developing eco-innovative strategies for both plastic waste remediation and sustainable poultry production.
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Interest #14	**Ecogeochemistry**		
Keywords	*Benthic ecosystem functioning; Marine ecology; Biogeochemistry; Meiofauna; Foraminifera; Bioturbation; Symbiosis; Metabolism*		
Laboratory	**UMR BEEP**	**Host Institution**	**IFREMER**
Description	I am an ecogeochemist interested in the contribution of microfauna in the benthic ecosystem functioning. I aim at characterizing biogeochemical gradients in benthic microhabitats using microsensors and planar optodes. I study microfaunal contribution via their ecology, metabolism, bioturbation and symbiosis.		
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Interest #15	**Functioning and Stability of complex ecological communities & ecosystems**		
Keywords	*biodiversity-ecosystem functioning; temporal stability; food-webs; meta-ecosystems; species interactions; community ecology*		
Laboratory	**DECOD**	**Host Institution**	**INRAE**
Description	My research aims to understand how anthropogenic pressures alter ecological communities and ultimately disrupt ecosystem functioning. This is a complex challenge because community responses emerge from both the diversity of species-specific reactions to environmental changes and the intricate networks of interactions among species. My work integrates these interaction networks into theoretical and applied ecology to address a central question: How do species interactions mediate the effects of environmental pressures on ecological systems—particularly in community assembly, ecosystem functioning, and stability? To answer these questions, I use a combination of data analysis, theoretical simulations, and in situ experiments.		

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Interest #16	**Additive Manufacturing of Bio-Based Construction Materials**		
Keywords	*Additive manufacturing ; Embedded 3D printing ; Construction materials ; Bio-based materials*		
Laboratory	**LGCGM**	**Host Institution**	**Université de Rennes**
Description	Our group is exploring new strategies to shape natural and bio-derived resources (such as earth, hemp fibers, and foams) using 3D printing. The goal is to create lightweight, high-performance, and environmentally friendly building components with tailored mechanical and thermal properties. We want to contribute to designing novel printable formulations, optimizing architectures for strength, durability, and insulation, and assessing the environmental impacts of these emerging materials.		
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Interest	**Advancing Digital Assessment of Movement Behaviour for Health Research**		
Keywords	*Health; Physical activity; Sedentary behaviour, Energy expenditure; Wearables; Accelerometer; Methods; Criterion validity; Walking; Walking limitations; Chronic diseases*		
Laboratory	**M2S (Movement, Sport and health Sciences) laboratory**	**Host Institution**	**Ecole normale supérieure de RENNES**
Description	The digital shift in the assessment of human movement behaviour has the potential to profoundly transform our understanding of the relationship between health and movement. However, such progress depends on improved standardization and enhanced validity of assessment methods, including accelerometry. In line with recent international initiatives—such as the World Health Organization's new global guidance to improve the measurement and surveillance of physical activity and sedentary behaviour—our research team is actively investigating the criterion validity of wearables for assessing physical activity under free-living conditions, as well as their clinical use for characterizing movement behaviour in relation to walking limitations in people with chronic diseases. One major strength of our ongoing research programme is the availability of rich datasets collected under free-living conditions in both healthy and clinical populations, enabling accelerated data analysis and rapid progress toward new knowledge. Another key asset is our strong connection with an international research network, which fosters collaboration and broadens opportunities for impactful research.		
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Interest	**Numerical modeling of fused granulate fabrication process for digital twin applications**		
Keywords	*Additive manufacturing, fused granulate fabrication (FGF), digital twin, CFD, multiphysics numerical simulation*		
Laboratory	**IRDL / ComposiTic**	**Host Institution**	**UBS**
Description	The fused granulate fabrication (FGF) process addresses environmental challenges by enabling precise dosing of thermoplastics and any custom fillers directly in the extrusion head. This process also represents a step toward large-scale additive manufacturing (LSAM), which is attracting strong interest from composite and mold-making industries as a means of producing more sustainable and recyclable molds. A digital twin of this unique robotic 3D-printing platform is currently under development and presents significant research potential. The 3D-printing platform features end-to-end digital continuity with feedback, high-performance data captures under elevated temperatures, and spatial data mapping. However, an important challenge remains achieving fine real-time representation in areas where no data capture is available. Numerical simulations help bridge this gap by providing predictive data. We are seeking candidates who are studying or have a strong interest in modeling the FGF process to describe the key phenomena, including bead size, coalescence, thermal fields, adhesion, consolidation, and more. The work involves studying a complex multiphysics problem that includes fluid mechanics, heat transfer, nonlinear and temperature-dependent rheological laws, and other physics (e.g., filler orientation, crystallization, consolidation…). References: - “A smoothed particle hydrodynamics study of a non-isothermal and thermally anisotropic fused deposition modeling process for a fiber-filled composite”, Z. Ouyang, E. Bertevas, D. Wang, B.C. Khoo, J. Férec, G. Ausias, N. Phan-Thien, Physics of Fluids, 32, 053106, 2020. https://doi.org/10.1063/5.0004527 - “Orientation predictions of fibers within 3D printed strand in material extrusion of polymer composites”, N. N. Kermani, S.G. Advani, J. Férec, Additive Manufacturing, 77, 103781, 2023. https://doi.org/10.1016/j.addma.2023.103781		
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Interest	Advanced constitutive equation for fiber-filled fluids		
Keywords	*rheology, fiber suspension, model, CFD, active particles*		
Laboratory	**IRDL**	**Host Institution**	**UBS**
Description	Our research focuses on understanding the behavior of fiber suspensions. The flow characteristics of these suspensions play a crucial role in many processes, as they determine the uniformity of fiber distribution during processing, and consequently influence the final material properties. To optimize such processes, a comprehensive understanding of suspension flow is required at multiple scales: the suspension as a whole, the fiber network, and individual fibers. When combined with CFD simulations, this knowledge provides an efficient and powerful design methodology. Our research group welcomes candidates who study or are interested in modeling the behavior of fiber suspensions. This may involve a wide range of topics and challenges, such as accounting for the non-Newtonian behavior of the suspending matrix, fiber-fiber interactions, fiber migration, or fiber flexibility, and can even extend to active particle systems. References: - "Rheological Modeling of Non-dilute Rod Suspensions", J. Férec, G. Ausias, Rheology of Non-Spherical Particle Suspensions, Edited by F. Chinesta and G. Ausias, Wiley – ISTE, 2015. https://doi.org/10.1016/B978-1-78548-036-2.50004-6 - "Short fiber composite reinforcements", J. Férec, P. Laure, L. Rocha-da-Silva, M. Vincent, Composite Reinforcements for Optimum Performance, Edited by P. Boisse, Woodhead Publishing, 2021. https://doi.org/10.1016/B978-0-12-819005-0.00020-4 - "Macroscopic modelling of the evolution of fibre orientation during flow" J. Férec, E. Bertevas, G. Ausias, N. Phan-Thien, Flow-Induced Alignment in Composite Materials, Edited by T.D. Papthanasiou, 2nd Edition, Woodhead Publishing Series In Composites Science And Engineering, 2022. https://doi.org/10.1016/B978-0-12-818574-2.00002-6 - Orientation de fibres discontinues dans la mise en forme de pièces en thermoplastiques. Techniques de l'Ingénieur, 2025, pp.AM3729 V2. ⟨10.51257/a-v2-am3729⟩ [in French]		
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Interest	Mobile Work and Tourism: Towards New Mobility Regimes in Brittany		
Keywords	*Sustainable tourism, Digital nomadism, Mobility, Innovation, Attractivity,*		
Laboratory	**LEGO**	**Host Institution**	**UBS**
Description	This postdoctoral project investigates how tourist destinations and national governments adapt to attract and integrate mobile workforces—particularly digital nomads—within a sustainable development framework, with a specific focus on the Brittany region. As remote work reshapes global mobility, Brittany stands out for its dynamic tourism sector, rich territorial identities, expanding network of coworking spaces, and strong regional commitment to sustainable development. The project analyzes how Breton destinations develop strategies to welcome digital nomads while preserving social and environmental balance. The research will evaluate local and regional actions implemented by the Region Bretagne, Conseils Départementaux, tourism boards, and innovation networks. It will also assess how international measures (e.g., digital nomad visas and remote-work policies) interface with regional initiatives. Methods combine stakeholder interviews, policy analysis, and in-situ observations in Breton coworking hubs, remote-work coastal and rural destinations, and community-based coliving spaces. Expected outcomes include a framework for integrating digital nomadism into sustainable tourism policies, best practices specific to Brittany, and actionable guidelines for regional actors seeking to enhance attractiveness while maintaining territorial cohesion. Planned secondments involve collaborations with Breton local authorities, tourism agencies (*Tourisme Bretagne*), coworking networks, and participation in regional innovation and mobility events. This project will help position Brittany as a leading European region in sustainable digital nomadism and territorial innovation.		
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Interest	Alternative asphalt materials for zero-carbon pavement		
Keywords	*Asphalt materials, bio-based materials, bituminous materials, green chemistry, rheology.*		
Laboratory		**IRDL - UBS**	
Description	The recruited researcher will contribute to the valorisation of industrial by-products, locally available wastes, and underused natural resources for their incorporation into bituminous materials. The overarching goal is to partially or fully replace petroleum-based binders with bio-based alternatives, drawing on principles of green chemistry, biomass valorisation, and pollutant reduction. The work will involve assessing marine resources as well as by-products derived from the energy and agri-resource sectors, to identify candidates capable of delivering appropriate rheological behaviour for bituminous applications. Particular attention will be paid to achieving properties compatible with porous pavements and high-albedo surface layers, while ensuring satisfactory durability and long-term performance.		
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Interest	Hygrothermal performance and durability of geo-based building materials for sustainable construction though local moisture measurements		
Keywords	*Earth construction, thermal conductivity, moisture content, NMR Mouse*		
Laboratory	**IRDL**	**Host Institution**	**UBS**
Description	Our group is working on several aspect of earth construction: development of new formulations and innovative setting processes (Perrot et al., Cem Concr Res 185, 2024), characterization of materials and systems (Colinart et al., J. Build Eng 29, 2020), performance analysis in use (Colinart et al., Energy Build 186, 2019). One key issue for such materials remains its sensitivity to liquid water. The on-going research on this issue concerns the analysis of rheological behaviour at early stage, the influence of moisture on mechanical and hygrothermal properties and the impact of drying/rain events on walls durability. To further address this issue, knowing the state of water and its distribution is essential. To achieve this, we aim to use to the potential of NMR-Mouse and other innovative moisture monitoring approaches. We expect to illustrate the relationship between moisture state and functional properties. Besides, we aim to evaluate the influence of bio-additive (like linseed oil) on the setting and the properties of the materials.		
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Interest	Control of multi-sensory simulations through human movement for immersive art and live performances		
Keywords	*3D, simulation, art and science, multi-sensoriality, motion analysis, expressiveness, live performance, immersive art, VR/AR/XR*		
Laboratory	**IRISA**	**Host Institution**	**Université Bretagne Sud**
Description	The project aims to develop innovative algorithms for controlling expressive animations and multi-sensory simulations (visual, sound, haptic, in 2D or 3D) driven by human movement, whether gestural or bodily. These algorithms will enable new forms of creation, particularly in the fields of immersive art and live performances. Integrating an immersive dimension into classical art will offer the public a new way of interacting with artworks—now animated, expressive, endowed with their own style and emotions, and therefore *alive*. In the realm of performing arts, the use of sensors coupled with simulation algorithms will allow artists to create differently, thanks to new tools that become a true extension of their bodies, expanding possibilities while ensuring complete control over their expression. Spectators/Users will thus benefit from an enhanced experience, with intensified sensations and emotions. The project addresses two major challenges in the field of animation and simulation: the control of animations/simulations and multi-sensory simulations. An additional originality of the project lies in its application domains: immersive art and live performance. The project features several innovative aspects: • **On the scientific level**, it involves developing original algorithms for real-time expressive control, combining human movements with multi-sensory simulations; • **On the methodological level**, the close interplay between scientific research and artistic creation, requires new working methods and adapted communication among the various stakeholders; • **Finally, on the cultural and societal level**, we aim to democratize immersive technologies by integrating them into accessible and participatory artistic creations, beyond the usual technological or scientific contexts.		
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Interest	**Modular and AI approaches to design and maintenance for Digital Editions**		
Keywords	Humanities, Digital Edition, Digital Humanities, AI, LLM, neural-network		
Laboratory	**HCTI**	**Host Institution**	**UBS**
Description	**The University of South Brittany (Université Bretagne Sud) is a leader in digital scholarly publishing, through its training and its state-of-the-art Othonè publishing centre.** We are seeking a postdoctoral researcher to help addressing some of the most fundamental global challenges in digital editing and research. The successful candidate will contribute to three major issues: • **Reinventing preservation and maintenance workflows** for long-term digital editions through LLM. • **Designing a new, modular approach to interfaces** for scholarly and wider-audience editions. • **Advancing neural-network-based tools for the study of literature and historical documents**, in close connection with *LayoutFinder* project, a project supported by a Max Planck grant. We welcome applications from candidates with a background in the humanities who are eager to deepen their expertise in digital methods, **or** from computer scientists with a strong interest in humanistic inquiry. Above all, we are looking for someone curious, ambitious, and ready to work at the forefront of digital scholarship.		
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Interest	Regulation of the Microtubule Cytoskeleton		
Keywords	*Cytoskeleton, Microtubule, Microtubule-Associated Proteins, Protein Kinases, Mitosis, Human Cells, Drosophila tissues, Genetics, Microscopy, Image Analysis, Optogenetics, Tissue Development, Tumor.*		
Laboratory	**Cytoskeleton and Cell Proliferation**	**Host Institution:**	**Institute of Genetics and Development of Rennes**
Description	Our laboratory investigates the mechanisms that control the spatiotemporal regulation of microtubule networks and their impact on essential cellular processes. We are particularly interested in mitotic spindle assembly and dynamics, which are key determinants of faithful chromosome segregation, tissue development, and tissue organization. We also study intracellular transport, which relies not only on the fine and adaptable organization of microtubules but also on the activity of molecular motors. To address these questions, we combine work in human cells with genetic approaches in *Drosophila*, providing a strong and complementary framework to dissect microtubule-dependent functions at both the cellular and tissue levels. We are seeking motivated postdoctoral researchers to develop or co-design an innovative project aligned with our research themes. Candidates are encouraged to contact me directly to discuss ongoing projects in the lab and potential opportunities.		
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Interest	Glycochemistry		
Keywords	*Glycosidic synthesis – Frontiers with Life Sciences – Sustainability*		
Laboratory	**ISCR - CORINT**	**Host Institution**	**ENSCR**
Description	In the context of the accelerating discoveries in the domain of glycobiology and glycomics, methodological approaches devoted to the synthesis of structurally well-defined oligosaccharides are currently undergoing significant mutation. Automated and/or biocatalyzed synthesis have emerged as valuable strategies despite their high cost linked to the technology itself and the availability of the necessary substrates. The ambition of the project will address these limitations by developing innovative and sustainable stereocontrolled glycosidic synthesis in water, on solid support, by combining the advantages of organocatalysis and light-driven glycosylation. The technology thus developed will make it possible to produce well-defined oligosaccharides and glycoconjugates with potential bioactivities, particularly as immunostimulating agents, or as substrates for glycoarray diagnostics.		

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Interest	**Embodied intelligence for robot-based, assistive living technologies**		
Keywords	**artificial intelligence, robot manipulation, human-robot interaction**		
Laboratory	**Lab-STICC, team RAMBO Brest**	**Host Institution**	**IMT Atlantique**
Description	The synergy between artificial intelligence and robotics allows the deployment of robots with increased autonomy and robustness, both indoors and outdoors. Contemporary applications require that algorithms are embedded and operate in real-time while relying on incomplete sensory data of reduced quality. At the same time, complementary sensors, actuators and functionalities are brought by ambient computing, smart spaces and connected objects that compensate and extend robot capabilities. In this context, we study how the synergy between robots and smart environments allows to develop increasingly complex skills that leverage continuous, incremental and lifelong learning of robots in open environments and in interaction with humans. Using robots alongside ambient intelligence for assisting humans in their daily activities and habitats, as well as professional users within their workspace, constitutes the major societal challenge that we seek to address. The main research areas of interest for the team range from robot/computer vision and data-driven control to multi-modal, human-activity understanding, to human-robot interaction and collaboration Likewise, the main application areas range from personal assistance and assistive robotics to search & rescue and monitoring in adverse conditions.		
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