

Progress report

2019



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This booklet is the third activity report of the “E2S” UPPA I-Site, for 2019. Driving force for the transformation of the higher education, research and innovation systems in our territory, symbolized by the brand “E2S UPPA”, this project retained its dynamic characterized by a very strong response from our partners (both public and private ones), which symbolizes the main target of E2S: the convergence between academia and socio-economic actors.

In three years, 19 research chairs have been created, among which seven partnership-based ones. Three project teams have been established, one with the support of Arkema and SAFT, another within the framework of a collaboration with Northwestern University, in the USA. Concurrently, two joint university-industry laboratories have been created.

In the field of innovation and entrepreneurship, the results are even more eloquent: eight maturation projects have been launched in partnership with Aquitaine Science Transfer, 13 patents have been registered and, above all, entrepreneurship is now mobilizing all the actors of our academic community. As such, nine companies or associations have been created and E2S UPPA now hosts more than 30 entrepreneurs student.

This dynamic is also reflected in our training programmes: over 50% of our Masters are now taught in English. The number of incoming international students keeps on increasing and more than 120 students have been financially assisted by our Talent’s Academy scholarship programme. Last but not least, the UPPA Tech instrumental service centre, a true showcase of our know-how, continues its extension with a concerted investment strategy applied to the acquisition of research equipment.

The momentum is strong! However, 2019 was also the occasion for a complete review of our results. With the help of our external scientific committee, the actions that requested to be given priority to, before the end of the probationary phase, in 2021, have been developed and concerted. Both the academic community and our students must be ever more mobilized. Optimizing how the needs of our partners and the aspirations of lecturer-researchers and researchers, especially the youngest among them, are met is a must! We have to strengthen our international network and help each member of E2S UPPA consortium to implement all of these initiatives in the best possible conditions.

Finally, conviction is necessary: academic members, students, socio-economic actors and the public ... all must be convinced that the convergence desired by E2S UPPA, between a university of excellence and its territory, brings both cultural and economic wealth. That is also an investment in the future of our students.

This is the challenge we must rise up to by 2021 and the end of the probationary phase of our I-Site.

Gilles Pijaudier-Cabot
Executive director

HUBS



AIM

Hubs are teams tackling emblematic and outstanding scientific issues embodying the excellence in research within E2S UPPA. Each hub gathers about 6 researchers around a research programme defined over a period of 5 years, ideally multi-disciplinary and in partnership with socio-economic actors. Led by the most inventive high-level researchers of E2S UPPA, these hubs act as “commando units” whose aim is to both assert and state loud and clear E2S UPPA’s leadership in the fields of energy and environment while fostering value-creation -wherever relevant- and the maturing of the results of this research in the industrial context.



LEVERAGE / KEY EVENTS

These hubs are relatively new. E2S UPPA launched the first one in 2018 and two in 2019. They have mobilised research efforts beyond the sole capacities of E2S UPPA:

- **Dealing with solid state batteries, RAISE 2024** mobilises 13 engineers and technicians from two private companies.
- **The hub Newpores** hosts 8 foreign researchers from Europe and USA. The research potential of this international team is doubled due to this foreign contribution.

NEWPORES

An international hub for the mechanics and physics of porous materials



PRINCIPAL INVESTIGATORS

- Gilles Pijaudier-Cabot, David Grégoire, Gianluca Cusatis

Gilles PIJAUDIER-CABOT

University lecturer
STEE College - Anglet
IPRA - LFCR



INTERVIEW

The international Hub Newpores aims at pushing back the frontiers of mechanics and physics of porous media in three specific directions: multiscale poromechanics, durability mechanics (precipitation, dissolution, reactivity) and the design of new hierarchical and functionalised materials. Applications concern the limitation of climate change and its consequences: (i) through the storage of carbon dioxide and hydrogen by optimising the storage capacity and the durability of the storage facilities; (ii) through the study of coastal erosion and the durability of coastal infrastructure; and (iii) through the design of new materials with a lower environmental impact. Newpores is also an international venture that mobilizes the Geomechanics and Porous Media research team at LFCR-Anglet, along with several international partners and affiliates at Northwestern University (USA), Liège University (Belgium), Vigo University (Spain) and the Technical University of Madrid (Spain).



David GRÉGOIRE

University lecturer
STEE College - Anglet
IPRA - LFCR



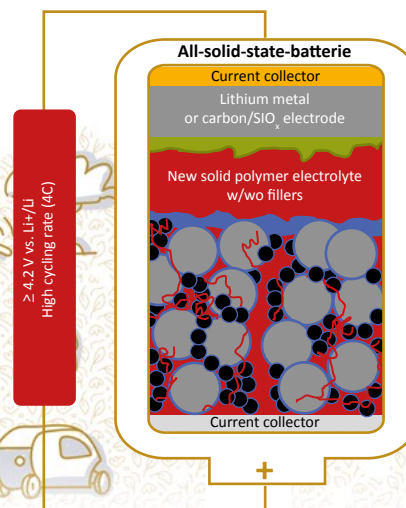
Gianluca CUSATIS

University lecturer
University of Northwestern

i INDICATORS

- Thematic hubs launched since the label "I-Site" was obtained: 3
- In 2019: 2 (1 partnership-based and 1 international)
- Research, facilities and administration costs for a hub:
 - Duration: 5 years
 - Professors, lecturer-researchers or researchers: 6
 - PhD: 6 (for 3 years)
 - Post-doctoral fellows: 20 (for 1 year)
 - Allotted budget: 500 k€

Active material Conductive carbon Electrode binder



RAISE 2024

towaRd All solid State battEry in 2024



PRINCIPAL INVESTIGATORS

- Hervé Martinez, Remi Dedryvere, Lénaïc Madec, Philippe Carbonniere, Delphine Flahaut, Laurent Rubatat



INTERVIEW



**Hervé
MARTINEZ**

University lecturer
STEE College
IPREM

Raise 2024 aims to develop new advanced battery systems using solid electrolyte technology for the electric vehicles and renewable energy storage sectors. The Raise 2024 project was built around 3 academic laboratories: IPREM (UPPA-CNRS), D-MEX x-ray imaging center (UPPA-CNRS), Pau Droit Public (UPPA) and 2 major international industrial groups: Arkema and TOTAL-SAFT. It brings together 17 permanent researchers, 6 PhD candidates, 20 years of post-doctoral fellowship and 13 engineers and technicians. The Hub's ambition is to produce a prototype, operating in a representative environment and corresponding to a level 6 technological maturity on the TRL (technology readiness level) scale, and that by 2024. This project was launched in June 2019. In January 2020, the first meeting of the scientific council, measured the expected advances in the development of polymer electrolytes, strategies for interface analysis and electrochemical testing of the envisaged systems.



Part of the UPPA team
involved in RAISE 2024

SENIOR PARTNERSHIP-BASED CHAIRS



AIM

These chairs are directed towards well-recognised mid-career scientists. Senior chairs should involve public or private partnerships allowing for shared supports with E2S UPPA. Within each chair, scientific projects are addressed by a group composed of three doctoral students and two to four permanent researchers. Additional funding is also provided for direct costs.



LEVERAGE / KEY EVENTS

- **COZES Chair:** Execution of the DCMIX4 experiment in the International Space Station for measurements of the transport properties of complex fluids
- **European projects obtained by chair holders:** 3 (ESA / MAP, H2020, Interreg POCTEFA) for a total amount of around € 500k
- **Several national projects have also been obtained.**

ECOTOX - *Ecotoxicology of chemical contaminants in inland waters, in the context of global change*



Séverine

LE FAUCHEUR

Lecturer-Researcher
STEE College - IPREM



INTERVIEW

The planet is currently experiencing significant global changes related to human activities, leading to the modification of the quality of aquatic ecosystems. The effects of chemical contaminants on continental waters are complex to assess, in particular due to the difficulty of extrapolating the toxicological data obtained in the laboratory to the field reality.

This chair proposes to use the artificial rivers of the PERL (Total) at Lacq to fill this gap with controlled exposure experiments of native communities of organisms to specific contaminants mixtures. This approach, complemented by the analytical and microbiological expertise available at IPREM, allows us to develop fundamental knowledge (bioavailability and impacts), and practical biomonitoring tools (biominerals and environmental genomics) to better protect the environment.



SPONSORS

E2S UPPA, TOTAL E&P Recherche et Développement SAS, Rio Tinto



INDICATORS

- Partnership-based chairs funded since the label « I-Site » was obtained: 6
- In 2019: 3
- Research, facilities and administration costs for a partnership-based chair:
 - Duration: 5 years
 - Permanent employees: 1
 - PhD: at least 3 (for 3 years)
 - Post-doctoral fellows: 2 (for 1 year)
 - Allotted budget: 300 k€ (on average)

CO2ES - CO₂ Enhanced Storage



**Fabrizio
CROCCOLO**

Italian
University lecturer
STEE College - Anglet
LFCR - IPRA



INTERVIEW - LAUREATE 2018

It has been widely demonstrated that global warming is due to human activities and the consequent concentration of greenhouse gases in the atmosphere. In order to reduce the effects of climate change, the Carbon Capture, Utilisation and Storage (CCUS) program aims at reducing the emissions of CO₂. Specifically, one possible solution is to inject large amounts of CO₂ in deep reservoirs of salted water. The main goal of the CO₂ES partnership-based Chair is to further develop our knowledge about one of the basic processes that govern the dissolution of CO₂ in deep aquifers, with the aim of increasing the storage capacities and security. Pr. Fabrizio Croccolo, an international expert in optical techniques for thermodynamics, is the holder of this chair putting together academic partners, as well as a private company (TOTAL), the French Space Agency (CNES) and a research institute (BRGM).



SPONSORS

E2S UPPA, BRGM - Bureau de Recherches Géologiques et Minières, CNES - Centre National d'Etudes Spaciales, TOTAL E&P Recherche et Développement SAS



SCIENTIFIC CHALLENGES



AIM

This call supports either the emergence of new scientific topics or a focus on scientific bottlenecks, related to the core disciplines of E2S UPPA. The call invites a team of 3 to 4 researchers to propose innovative research projects in order to explore new topics, as well as to promote interdisciplinary collaboration and to disseminate this knowledge.



LEVERAGE / KEY EVENTS

The combination of a partial release of teaching duty, of two doctoral and postdoctoral fellowships, and the choice of subjects favoring transdisciplinarity allows the rapid emergence of results.

RODAM - *Robust Optimal Design under Additive Manufacturing constraints*



**Marc
DAMBRINE**
University lecturer
STEE College
IPRA - LMAP



INTERVIEW

Obtaining the RODAM project from the I-Site E2S UPPA and with the support of our partner, Safran Helicopter Engines, is a chance for us. This gives us not only the financial means to carry out our research program but also the opportunity to confront our ideas with very concrete problems. From a strictly scientific point of view, this is a real advantage. Indeed, the various exchanges with our industrial partner led to new scientific questions with deep industrial motivations.

Indeed, the project aims at studying new challenges in optimal design. Since the pioneering works of the seventies, much has been done both from the theoretical and numerical point of view. As for our team, we aim at building new algorithms of robust optimal design, adapted to the additive manufacturing for metal, with a special view on mechanical applications.

In this way, this project has brought together academic and industrial communities on an emerging theme, with common objectives around important innovative scientific challenges.

SPONSORS



E2S UPPA, Safran Helicopter Engines



INDICATORS

- **Scientific challenges funded since the label « I-Site » was obtained:**
6, among which 2 partnership-based ones
- **In 2019: 1**
- **Research, facilities and administration costs for a scientific challenge:**
 - **Duration:** 3 years
 - **Lecturer-researchers or researchers:** 3
 - **PhD:** 2 (for 3 years)
 - **Post-doctoral fellows:** 3 (for 1 year)
 - **Allotted budget:** 60 k€

MAYDAY

Marine sorbed Debris Analysis



**Stéphanie
REYNAUD**

Researcher, CNRS
IPREM



INTERVIEW - LAUREATE 2017

Mayday aims at studying the detection and behaviour of nanoplastics, the most threatening class of plastic debris among marine litter. Currently, environmental sampling is still to be optimized, analytical methods are being developed and the parameters influencing the sorption/desorption of chemicals have yet to be evaluated. It is in such a context of race against time that Mayday was started in 2017. Since then, Mayday has speeded up our research and has positioned us both at the national and international levels. Today, we are recognized within that field; our articles are cited and our results are presented in international congresses. In 2020, we are organizing the annual meeting of the GDR polymers and ocean, dedicated to the fate of polymers in aquatic environments. Mayday federates researchers at the local, national and international levels. We are now involved in major projects, either as participant or coordinators (CNRS, ADEME, ANR and JPI H2020) and we submitted other projects which are currently under evaluation. In addition, Mayday is expanding its horizons by creating new collaborations with other specialists such as geochemists and ecotoxicologists.

HEADING FOR ERC



AIM

In order to become an attractive international reference in terms of research, E2S-UPPA has implemented a process to help talented and promising early-career or already well-established scientist to prepare their application to the prestigious Starting or Consolidator grants from the European Research Council. E2S UPPA proposes a partial release from teaching duties, for research project maturation as well as individual coaching by consulting companies.



LEVERAGE / KEY EVENTS

The incentive and support strategy implemented by E2S UPPA, in relation to ERC grant application, has been successful as illustrated by the first ERC Starting grant obtained by our colleague Hannelore Derluyn. Hannelore's success has motivated several scientists to go into this adventure; 3 new projects have been supported by E2S UPPA and submitted (2 Starting 2020 and 1 Sinergy 2020). We hope that these scientists will be as successful as Hannelore.



INDICATORS

- Projects supported since the label « I-Site » was obtained: 5
- In 2019:
 - Projects supported: 3
 - Project submitted: 3
 - ERC Starting Grant Laureat : 1

Precipitation triggered rock dynamics

The missing mesoscopic link (PRD-Trigger)



Hannelore DERLUYN

Belgium/France
Researcher, CNRS
IPRA - LFCR



INTERVIEW

I prepared for the ERC Starting Grant 2019 call with the support from E2S UPPA's Heading for ERC programme, which funded the reviewing of my research proposal by an external consultant, Enspire Science Consultancy. Their training on "How to write a competitive ERC proposal" and their revisions were very instructive to structure the project and to think the ERC-way. After having passed the first evaluation round, E2S UPPA funded the training by Enspire Science for the ERC interview as well. There were several mock interviews, which I combined with mock interviews organized by INSIS, CNRS. By benefiting from these repeated trainings, I arrived in Brussels with a well-trained pitch talk I was confident about. I am convinced that this combination of trainings was essential to succeed in obtaining my ERC Starting Grant.

SEED FUNDING FOR PARTNERSHIP INITIATIVE



AIM

The Seed Funding call aims at promoting emerging industrial partnerships within E2S UPPA consortium, by supporting small-scale projects, to favor initiative, risk taking and innovative research. Breakthrough topics and new partnerships are the core of this call for project, over a short duration, to promote dynamic research partnerships



INDICATORS

- **Projects supported in 2019:** 4 (3 in STEE* and 1 in SSH**)
- **Allotted budget:**
 - < 140 k€, for a PhD or a postdoctoral fellowship,
 - includes < 60 k€ for operating costs and/or investment,
 - partner(s) must provide for 2/3 of the budget.
- **Projects :**
 - *VINENVBUZ*: Adapt and build an old vineyard in the face of and to cope with new environmental and territorial constraints: the case of AOC Buzet - Project led by Laurent Jalabert, ITEM, SSH College
 - *SAFE_REUSE*: Performic acid for a safe reuse of wastewater - Project led by Thierry Pigot, IPREM, STEE College
 - *Yeast&Trout*: Yeastas a sustainable ingredient to improve plant-based diet in rainbow trout - Project led by Sandrine Skiba, INRA-Numéa
 - *IterMaxwell*: Iterative Trefftz Time harmonic Iterative Solver - Project led by Sébastien Tordeux, Inria-LMAP

*STEE stands for Sciences and Technologies for Energy and Environment - ** SSH stands for Social Sciences and Humanities

INTERNATIONALISATION OF TRAINING COURSES



AIM

The objectives of the present action are:

- **to provide linguistic and pedagogical support** for teachers wishing to teach in English in the flagship International Masters,
- **to increase the international attractiveness of the UPPA** by promoting the venue and the graduation of non-French speaking foreign students, from priority international partners, in particular at Master and PhD levels,
- **to foster the development of an international and multicultural environment** for our students, teachers and researchers.



KEY EVENTS

- **Our offer of Master's degrees in English has been expanded** with two new courses:
 - M2 "Petroleum Engineering Reinforcement" (PER)
 - M2 "Evolutionary ecology in aquatic environments" (EEAE)
- **The number of teachers coached to transform their courses into English has increased significantly.**
- **This scheme has been evaluated and the results were presented at an international conference (QPES 2019):** *Olivier Hofmann, Ernesto Expósito, Questions de Pédagogies dans l'Enseignement Supérieur, ENSTA Bretagne, IMT-A, UBO, Jun 2019, Brest, France*



INDICATORS

- **Courses now taught in English:** 35, among which 15 in 2019
- **Teachers supported since the label «I-Site» was obtained:** 34 (20 in 2018 and 14 in 2019)
- **Hours of lectures now taught in English:** 665, among which 462 in 2019

International Masters

- **Master 2 taught in English:** 10
- **International students enrolled in 2019:** 63
- **Advertisement means:** Campus France, Study Portals, Master Studies, Educations.com, E2S UPPA and UPPA websites, institutional social networks



INTERVIEW

Laureate 2018
Faustine BACCHUS
Teaching fellow
STEE College
Anglet

The workshops were very useful: I learned many new strategies to improve the efficiency of my courses!

This programme made me a better teacher! The students were very happy to test all the new strategies I learned during this programme (in English of course) and they now feel more confident to speak English.

In addition, five stars on PedagoAdvisor! They got efficient teachers, a good atmosphere, and a E-learn course with all the useful information: that was perfect! For all of this, many thanks to E2S UPPA and to Olivier Hofmann!

Laureate 2017
Corinne NARDIN
University lecturer
STEE College

I decided to participate in the programme and workshops related to English as a Medium of Instruction to get acquainted with pedagogical approaches to teaching in use in systems of education different from the French one, in particular student-based learning. EMI provided me with some of these and with sources to get further information.

FELLOWSHIP FOR INNOVATION IN TEACHING



AIM

The action « Fellowship for innovation in teaching » aims to detect lecturers-researchers who have a project in the educational field, in rupture with standard pedagogic methods, and to support them so that they may achieve it.

Tracking back the two past calls, we can observe that teachers do not only need time, they also need support in digital pedagogy since most of the projects strongly involve the university department in charge of these technologies and skills.



LEVERAGE / KEY EVENTS

This action strengthens some of E2S UPPA strategic axes such as its internationalisation policy, with innovative projects using English as a teaching medium or focusing on preparing students for their mobility periods. The creation of presentation modules by the supervisors of programmes fully taught in English also matches this policy.



INDICATORS

- Projects supported since the label « I-Site » was obtained: 22
- In 2019: 11
- Allotted budget: 40 927 €

Master in Bio-Inspired Materials

In September 2020, this Master will be open to Bachelor students with majors in Biology, Chemistry or Physics. Courses are taught in English, to ensure visibility at the international level. Linked with activities in line with the research conducted at the Institute of analytical sciences and physical chemistry for environment and materials (IPREM), these courses aim at connecting the lab to the living world.



INTERVIEWS



**Laurent
BILLON**

University lecturer
STEE College

**Corinne
NARDIN**

University lecturer
STEE College

The BIM Master is in line with the current challenge of the ecological and sustainable transition. Mimicking strategies developed by Nature represents infinite scientific and technological challenges that will be taken up by choosing the path of bio-inspiration. With this Master of Science, unique in France, we want to offer students the possibility to explore living systems, to get inspiration to develop new materials while keeping in mind ethics and consciousness of their environment.

In the BIM Master, training will be focused on active pedagogy, in project mode. Through this approach, we expect to develop student's autonomy, curiosity, creativity and emotional intelligence, to train future young researchers granted with a peculiar ability to think in a collaborative mode and able to drive bio-inspired research projects.

Interdisciplinary Teaching Approach of Environmental Microbiology in English to Master's Students



INTERVIEW - LAUREATES 2018



**Christine
CAGNON**

Lecturer-Researcher
STEE College

**Fabienne
BÉDÉCARRATS**

University lecturer
STEE College

The Micro2En project aimed at supporting environmental microbiology students in becoming more proficient in their field of study in English via an interdisciplinary teaching approach. Thanks to a very good relationship between the two teachers, the activities that were proposed aroused some strong enthusiasm among the students, thus leading to undeniable progress and considerable self-confidence.

At the same time, the students who were at the heart of the project, as well as the other students from the Chemistry and Life Sciences Master, actively took part the elaboration of a participative French-English glossary of microbial ecotoxicology containing more than 600 entries and accessible to all course participants. We are currently at the next phase of the project, creating fun online tools in order to facilitate the students' autonomous acquisition of vocabulary related to their speciality.

TALENT’S ACADEMY



AIM

The Talents’ Academy has been created to identify, attract or retain the most promising students by granting them an allowance so that they can focus better on studying. Targeted courses are all within E2S UPPA’ area of expertise. Candidates may come from the UPPA or from other universities. A first wave is especially dedicated to foreign students from targeted universities.



LEVERAGE

The Talent’s Academy programme is an important growth factor in the number of PhD candidates enrolled at the UPPA, which is a key objective for E2S UPPA. Indeed, about 1/3 of the former students in Master 2, members of this Academy, are now preparing a PhD thesis at the UPPA.



INDICATORS

- Scholarships granted since the label « I-Site » was obtained 121
- In 2019:
 - Laureates: 59
 - in L3*: 7 (6 STEE**, 1 SSH***)
 - in Master: 52 (2 EEI****, 8 SSH, 42 STEE)
 - Origin: Argentina, Algeria, Brazil, Canada, Colombia, Spain, United States of America, France, Gabon, Iran, Portugal, Tunisia
 - Allotted budget: 924 k€

* In France, Bachelor degree are completed in three years and followed by a Master degree of two years. L3 thus stands for the last year of a Bachelor degree, called Licence.
STEE stands for Sciences and Technologies for Energy and Environment * SSH stands for Social Sciences and Humanities **** EEI stands for European and International Studies



**Kesrouani
KAMAR**

*Enrolled in Master 2 «Industry 4.0»
STEE College - Anglet*



After a Master’s degree in Computer and Telecommunications Engineering (Software Engineering) at Antonine University in Lebanon, I am now doing a Master 2 in «Industry 4.0» at the UPPA. The Talent’s Academy scholarship helped me to continue my graduate studies in France. For this, I would like to thank E2S UPPA for providing me such an opportunity. I am also grateful to the Welcome Desk for their help with all the procedures I had to cope with as a foreign student. Interested in research, I plan to do my internship in the computer lab LIUPPA (semester 2).



**Roman
LEDUC**

*1st year of PhD
in Electric
Engineering
STEE College
IPRA - SIAME
Doctoral School of
exact Sciences and
their applications (ED 211)*

Laureate in 2018 : I obtained the Talent’s Academy scholarship in 2018, during the 2nd year of my Bachelor’s degree in Electric Engineering. The first benefit is the allowance given by E2S UPPA, which allowed me to no longer have to look for part-time jobs during summer. This was a great opportunity, especially since I had my Bachelor’s internship from March to August. In addition, being supported by such an organization confirmed my thoughts as for applying for a PhD in 2019. My PhD is also funded by E2S UPPA, which allows to me work on a subject of my choice and to do experiments in the best possible conditions.

PYREN



AIM

For the last 6 years, within the framework of the « PYREN » IDEFI, the UPPA has been developing partnerships with Spanish cross-border universities such as the University of the Basque country, the Public University of Navarre and the University of Zaragoza. This project aims to pave the way for the emergence of a European, cross-border and trilingual university, which is one of the UPPA's strategic axes of development.

In April 2017, PYREN was integrated into the I-SITE and became one of E2S UPPA's actions; not only is it dedicated to cross-border relations but it also acts as a laboratory within the scope of E2S UPPA's internationalisation strategy, especially in regard to universities of the Spanish-speaking world.

In order to build up a cross-border, multidisciplinary and trilingual area of higher education, four strategic axes have been identified:

- support language training
- generate a collaborative dynamic while establishing relationships
- promote common training (multi-university courses and/or programmes)
- foster enrolment in existing joint degrees



LEVERAGE / KEY EVENTS

- **The organization of the first edition of the PYREN Meetings** (2 days of work and exchange of practices in June 2019) has revitalized the whole project: the collaboration EUPLA-ISA BTP integrates a new partner (UPV), a new project is born between the «sport» branches of UPPA and UNIZAR and an institutionalization of the PYREN Network is in progress. Finally,
- **For the first time, PYREN participated in the financing of 3 theses in co-supervision (UPPA-UNIZAR)** as well as in the financing of the Aragonese Doctorials.



INDICATORS FOR 2019

- **Erasmus+ long lasting mobility:** 32 outgoing, 16 incoming
- **Short mobility:** 175 students
- **Personal mobility:** 121 teachers and administrative staff
- **Virtual mobility:** 12 people registered
- **Language skills and proficiency:** 791 teaching hours, among which 349 hours dedicated to personnel
- **Tandem language exchange:** 216 students and personnel
- **PYREN Meetings:** 34 personnels, teachers and administrative staff



Pyren meetings

DEVELOPMENT OF LIFELONG LEARNING



AIM

To help students to find work more easily and to promote applied research, E2S UPPA bets on the dissemination of the work-link training model, especially at the postgraduate level (“contracts of professionalization” and apprenticeship).

Based on a close partnership between academic departments and companies, this training is a key factor in the promotion of our Master degrees.

We also aim at increasing the number of companies using our technology platforms (UPPA Tech) to train their employees.



LEVERAGE

The number of Master programmes with apprenticeship fosters a better mutual understanding between the university and the businesses implemented on the territory while also contributing to strengthening partnerships.



INDICATORS FOR 2019

- **Degrees based on a work-link training model (contracts of professionalization and apprenticeship):** 7 Master degrees, 12 programmes (20 apprentices)
- **Contracts of professionalization:** 7 Master degrees + ISA-BTP and ENSGTI engineering schools (31 contracts)
- **Part of the university's capital resulting from the development of lifelong learning:** 2114 k€

LIAISON BUREAU



AIM

The social-economic world has a wide variety of relationships with the UPPA, but this diversity goes along with an equally complex organization of the University, which can be confusing and may lead to a loss of opportunities for partnerships.

To cope with this issue, the University has created a *Liaison Bureau* whose goals are to provide guidance to actors from the social-economic world and to provide university personnel reaching out to businesses with the necessary knowledge of their own institution and the previous partnership relations.



LEVERAGE / KEY EVENTS

- **Establishment of the *Liaison Bureau* and constitution of its team:** recruitment of two part-time employees (1 marketing and administrative assistant and 1 communication and prospection officer) in order to constitute a team of 3 people. Administrative management was previously handled by another service.
- **Establishment of a partnership contacts database (research contracts, services, training, apprenticeship tax, internships):** acquisition and deployment of a CRM software (Customer Relationship Management) among 7 teams (departments, directions or project teams) and with 15 agents. This software allows not only to manage relationships and interactions with partners but also to ensure a follow-up. Kick-off of the project in July 2019, afterwards followed by 6 workshops dedicated to the definition of the requested settings (23 hours). 2800 contacts (both moral and physical ones) have since been imported into the data base.
- **Establishment of the *Partnership Committee*** whose role is to establish the «Partnership» roadmap in accordance with E2S UPPA's strategy. This committee organises and stirs the UPPA's internal network of "corporate relations professionals".
- **Development of networks with socio-economic actors:** In particular through the recruitment of its communication and prospection officer, the *Liaison Bureau* aims at developing and strengthening the link with the CEPyA Cluster, a business club. Within this framework, the Bureau has been initiating and developing networks between academia and socioeconomic actors (industry, technical centres, communities...). Likewise, the team has been working on the organization of the UPPA's Conference, scheduled for the beginning of 2020. The purpose of this Conference is to allow professionals, students, former students and all socio-economic partners... to exchange on their activities and objectives. The Conference will focus on teaching innovation -in every sense- and will be centred on discussions about studies continuity from high school to Bachelor's degree, including the links between different curriculum. The driving societal theme of this conference will be «energy and environmental transitions», in relation to the positioning of E2S UPPA.

ZOOM ON CEPyA:

CEPyA, or «Pyrénées Adour Enterprises Cluster», is a group of twenty entrepreneurs and economic leaders who all share the ambition to create a new model for public/private collaboration.

The cluster intends to bring together representatives of industry and organisations tied to economic activity who are, or wish to be, involved in the University's activities: research, education, research dissemination. The club thus formed helps to create and strengthen the relationships between the academic and research community and the private, professional community (industry, technical centres, technopoles, local government...).

SUPPORT FOR PROFESSIONAL INTEGRATION AND ENTREPRENEURSHIP TUTORS



AIM

E2S UPPA is diversifying its actions related to entrepreneurship in order to strengthen the links between the university and professional integration:

- **actions to raise students' awareness of entrepreneurship** (introduction of existing processes, implementation of dedicated course units and open events)
- **specific support for students and young graduates promoting a project**, with a personalized follow-up and coaching led by professionals from the socio-economic world (workshops, after-work, entrepreneurial seminars, specific university degree).



INDICATORS FOR 2019

- **Course unit dedicated to raise student's awareness of entrepreneurship:** 400 students registered (all disciplines and all campuses combined)
- **Jeud'Innov - Escape Game to raise awareness of entrepreneurship:** 70 participants (on the campuses of Pau and Anglet)
- **Support in a project of business creation:** 37 projects supported, i.e. 44 students and young graduates who benefited from a personalized coaching
- **Thematic workshops / after-works intended to students with the national status of student business owners (SNEE), organised from January to December 2019:** 10
- **Start-up created by student business owners:** 6

Trognon

Reusing organic wastes produced by communities



Clément BLEUET

*Student registered at the
ENSGTI Engineering school
STEE College*



INTERVIEW

Currently registered at the ENSGTI, in the last year of an Engineering cursus, with a specialisation in industrial energy, I am also enrolled in the DU D2E tools for entrepreneurship and have been a "Student business owner" since January 2019.

I am currently working on Trognon, a project aiming at reusing organic wastes produced by communities.

Reuse will be performed through a small composting platform, associated to an organic waste management and treatment service, dedicated to collective catering, caterers and mass distribution. Wastes will be transported to a small composting platform where they will be shredded, broken down and hygienized using mechanical composters, which consume little space and energy. The compost produced this way can then be sold to professionals

Thanks to my status of student business owner, instead of going on an internship in a company, I was able to work on my project, which allowed me to devote more time to its development. I also participated in the Spring camp organized by E2S UPPA. I benefited a lot from this seminar, in particular from the support provided there, and got to establish a network important for my project. In addition, I also received € 7,500 in grants from the BDEA Adour and integrated the Crédit Agricole project accelerator. I am also one of the three winners of the Energy and Territory student competition organized by Terega, in partnership with Crédit Agricole and CACG.

TECHNOLOGY TRANSFER



AIM

This call for projects consists in supporting the development of innovative projects, from laboratories and research institutes, with high transfer and/or socio-economic potential. This call is intended to support transfer projects regardless of their position throughout the chain.



LEVERAGE / KEY EVENTS

- Laureate in 2018, the **MECAPEAU project** is currently in its maturation phase, with the support of SATT AST*.
- **2 patents** have been registered, in relation with two pre-maturation projects: XPIROETT and SinHHex.



INDICATORS

- **Projects supported since the label « I-Site » was obtained: 9**
- **In 2019: 6**
 - *HOLOBIONICS : Corn endophytic microbiome engineering, in partnership with EURALIS - Eléonore Attard - IPREM*
 - *LaboEnergie : Energy measurement and control in buildings - Benoît Larroque - SIAME - IPRA*
 - *PIROETT : Absorbing polymers in infrared, for organic electronics - Christine Dagron - IPREM*
 - *CRIA2N : Fast and isolated digital analog acquisition chain - Robert Ruscassié - SIAME - IPRA*
 - *SinHHex : Sine-Helicoïdal Heat Exchanger - Yves Leguer - SIAME - IPRA*
 - *NI-ILO : Non-invasive inductive loop for cancer treatment - Laurent Pécastaing - SIAM - IPRA*
- **Allotted budget: 50 k€ (on average)**

Development of a biosensor for pesticide detection



Corinne PARAT

Research engineer
STEE College - IPREM



INTERVIEW - LAUREATE 2018

The objective of this project is to develop an innovative sensor to specifically detect, *in situ* and in real time, pesticides frequently found in water. In order to achieve the sensitivity and selectivity required for environmental applications, our strategy is based on the functional modification of a screen-printed electrode by a synthetic oligonucleotide. This bio-inspired macromolecule will obtain a specific sensor of the target molecule, the recognition being carried out according to a key/lock scheme. In parallel, a partnership agreement was signed with the company NOVAPTECH company to select the sequences against the main residues present in our territory. In the end, a technology transfer is envisaged in order to test the first prototypes with a community in charge of water resource management.

*SATT stands for «technology transfer acceleration company». There are 13 of them on the French mainland. Their mission is to protect and develop inventions resulting from the work of public researchers, turning their inventions into innovations placed on the market. They contribute into accelerating the process, starting from the declaration of the invention up to the transfer of the technology, product, process, service, software, etc. to a third party... and sometimes even to a new company, when the researcher in question becomes an entrepreneur!

SATT Aquitaine Science Transfert (SATT ATS) is the technology transfer acceleration company of the Nouvelle-Aquitaine region.

PHD GRANTS



AIM

E2S UPPA wishes to attract candidates who are noticeable by their scientific excellence, candidates with a clear passion for research and who are excited by the opportunity to provide future solutions for energy and environment. They will be exposed to the intellectual and practical challenges of a research project, which enhances the doctorate holder's creativity, leadership potential, rigor and ability to meet unexpected challenges.



LEVERAGE / KEY EVENTS

The attractiveness of E2S UPPA and its research laboratories is well confirmed by the excellent international applications received in answer to our open calls and thanks to transparent recruitment processes.



INDICATORS

- **PhD grants funded since the label « I-Site » was obtained:** 31
- **In 2019:** 6 laureates, among which 83.3% come from abroad

Parental selenium and antioxidant status in fish



**Pauline
WISCHHUSEN**

*Doctoral school Exact Sciences and their
Applications (ED 211)
STEE College
NuMéo*



INTERVIEW - LAUREATE 2017

I greatly appreciated the reception of the E2S UPPA PhD grant as it gave me the opportunity to define a PhD topic of my interest to be conducted at INRA, the French National Institute for Agronomics. I research the role of dietary selenium in fish broodstock diets on the antioxidant metabolism, which is a topic of interest within the aquaculture sector. Quickly, I got in touch with researchers at IMR, the Norwegian Institute of Marine Research, and a stay was organized, supported by an E2S UPPA mobility grant. It is great that E2S UPPA promotes networking with other researchers, not only in yours, but also other fields, e.g. through lecture series on various topics. Now, in my final PhD year, I feel that I did greatly profit from the possibilities offered by E2S UPPA and could imagine deepening my studies by applying to the E2S UPPA postdoc grant. I can only recommend an application to the E2S UPPA PhD grant programme.

PHD PROJECTS



AIM

The “PhD project” call funds thesis grants. The aim of this internal call is to increase the research potential of the E2S UPPA consortium on targeted themes linked to energy and environment and in line with the missions set by the UPPA. One of the objectives of this call is also to stimulate the research work of «junior» researchers and assistant professors. Thus, in agreement with the UPPA’s doctoral schools, the opportunity has been offered to young non-HDR* scientists to supervise PhD students, provided they do defend their HDR within 42 months following the start of the PhD supervision.

*HDR (or, in French, “Habilitation à Diriger des Recherches”) is a French post-doctoral degree one must hold in order to be able to oversee research and to supervise PhD candidates during their thesis (at least in France). Here, non-HDR researchers are granted a temporary dispensation, providing that they do obtain this accreditation under a definite period.



LEVERAGE / KEY EVENTS

The objectives of the call are achieved: many PhD projects were proposed by junior scientists. In the end, 10 PhDs have been funded and 8 of them are supervised by non-HDR scientists.



INDICATORS FOR 2019

- **Laureates:** 10, among which 2 are in SSH* and 8 in STEE**

*SSH stands for Social Sciences and Humanities - **STEE stands for Sciences and Technologies for Energy and Environment



Adel NOUREDDINE

Lecturer
STEE College
LIUPPA

Capture and propagate contextual green software data in cyber-physical environments



INTERVIEW

As energy demand is rising in Information and Communication Technologies (ICT), optimizing their energy footprint is a primordial necessity. Thus far, existing solutions focus on optimizing either individual layers (i.e., software, servers) or a specific workload. The goal of this project is to optimize ICT systems in a holistic approach: capturing contextual green data from different layers and cyber-physical environments, and sharing/using this data to apply autonomous holistic adaptations to the system.

I applied to E2S UPPA’s «PhD project» call with a scientific project around green computing. My research project aims to propose a holistic approach to manage the energy consumed by information and communication technologies (ICT). With its positioning around energy and environment, the E2S UPPA consortium offers the ideal support to research projects around these topics. With the obtention of this PhD grant, and the subsequent recruitment of a motivated PhD candidate, I can advance on my scientific research with a thesis focusing on two key elements of the project: first, capturing contextual green information from the cyberphysical environment and systems, and then, sharing this information, with an energy-efficient model, between the different equipment.



Houssam KANSO

Doctoral school Exact Sciences and their
Applications (ED 211) - STEE College
LIUPPA

JUNIOR CHAIRS



AIM

These chairs are directed towards young promising researchers, typically with a research experience of 1-4 years after their Ph.D. The call for applicants is widely and internationally advertised. Recipients are offered a five-year tenure track position and a starting package with a doctoral fellowship, five one-year post-doctoral fellowships and partial support for direct costs. Chair holders are expected to reach a level allowing them to successfully apply to ERC starting grant.



LEVERAGE / KEY EVENTS

Junior Chairs are both a priceless support scheme allowing us to identify promising early stage researchers and an invaluable opportunity, in terms of career development, for the chair holder. In addition to financial and human resources support, the chair holder, who has a status associated to that of an assistant professor, has a reduced teaching duty to enable progress in the supported research activities, to eventually apply for a competitive third party funding such as the « jeune chercheur » support granted by the French National Agency for Research.

AWESOME - mAnufacturing of neW gEneration Sustainable and therMoplastic coMpositEs-



Laureate

Anaïs

BARASINSKI

Lecturer Researcher

STEE College

IPREM



INTERVIEW

Graduated in mechanical engineering and excited about materials and the physics of their forming processes, I have carried out research projects in this field at the GeM laboratory of the Ecole Centrale de Nantes, a mechanics laboratory, for several years. At the end of each project, the limitations came mainly from the materials and the lack of communication and exchanges between people from both worlds (materials and processes)... When I saw the offer for this Chair, I did not hesitate – not even for a second - to apply! Indeed, having the opportunity to pursue in my favorite field and to work in hand with experts from the world of materials design was an incredible opportunity!

I chose to give a turning point to my career by integrating a laboratory of physics chemistry, rather than a laboratory of mechanics; it is a bet, hopefully a rewarding one!

Anyway, starting an ambitious project for 5 years in a unique framework which brings together quality partners (industrials and academics) with broad and varied skills, a financial support equivalent to a thesis grant, 5 years of post doc as well as operating expenses, is very comfortable in this kind of bet. Arriving in a new, dynamic and attractive region, within a human-sized university was a bonus!



SPONSORS

E2S UPPA, Arkema, Canoe



INDICATORS

- Junior chairs funded since the label « I-Site » was obtained: 6
- In 2019: 2 partnership-based
- Origin: Ecole centrale de Nantes - Université du Pays Basque
- Research, facilities and administration costs for a senior chair:
 - Duration: 5 years
 - Contract lecturer-researcher: 1
 - PhD: 1 (for 3 years)
 - Post-doctoral fellows: 5 (for 1 year)
 - Budget: 100 k€

Study of amino acid metabolism in rainbow trout



Laureate

Florian

BEAUMATIN

Lecturer Researcher

STEE College

NuMée



INTERVIEW - LAUREATE 2017

E2S UPPA's call for «Junior Chair» projects represents a fantastic opportunity for every young scientist aiming to constitute his/her research team in order to develop ambitious and innovative subjects.

Indeed, thanks to the considerable support (both human and financial) of E2S UPPA, I developed a new research theme in the field of aquaculture fish nutrition. With a combined in vitro/in vivo approach, this project aims at designing new feeds, more economical and ecologically responsible, while preserving the organoleptic qualities of aquaculture products.

In addition, the excellent scientific environment of the UPPA favors the emergence of high standing collaborative projects, which thus considerably increases the likelihood of success for national and international calls. Personally, I thus benefited from this dynamism with my CAAT-TROUT project, a «young researcher» project, which has been accepted in its first year by the French National Research Agency (ANR). In short, this call represents a great springboard for a young researcher's career and I therefore strongly encourage any candidate to try this adventure.

INSTRUMENTAL SERVICE CENTER

UPPA TECH



The instrumental service centre « UPPA Tech » brings together all the powerful experimental equipments available within the research labs hosted by the university.

By pooling together both equipments and expertise, distributed in independent thematic platforms, UPPA Tech acts as a support and optimization system serving territorial innovation and development, in phase with both the university's research policy and E2S UPPA's action plan.

UPPA Tech hence offers high-level scientific and technical services to meet the needs of both academic research and local, national or international socio-economic actors.

INDICATORS AND KEY EVENTS IN 2019

- **Operation and governance:** *professionalization and rationalization of people's access to research equipment*
 - December 2019: UPPA Tech Director is appointed by the university's president
 - June 2019: Implementation of UPPA Tech's internal rules; Internal seminar for the managers of all the technical platforms
 - Organisation of the first steering committees
- **Platforms financial management:** *financial flows optimisation and management*
 - Establishment and implementation of access fees to all equipments, for each platform
 - Management of the platforms financial flows
- **Communication and advertisement:** *opening up to the territorial socio-economic environment*
 - Participation to 16 events to promote UPPA TECH activities
 - Organisation of 4 thematic days
- **Major investment projects, in and for a search of excellence:** *management of two equipment projects for € 2.4 million*
 - **IXIA** (*X-ray tomography imaging, ion probes and laser ablation*):
 - Subsidy obtained in 2018, represents an investment of 1,2 M€ (platforms involved: I3, XRISE, DMEX)
 - Objective: skills development in the field of imaging.
 - **PHYSA** (*Pooled and HYphenated instruments for multidimensional and multiPHysics Analyses*):
 - Subsidy obtained in 2019, represents an investment of 1,2 M€ (platforms involved: POLYCATS, ECOMES, MATCO, G2MP)
 - Objective: implementation of original instrumental couplings for multidimensional and multiphysical analysis of new materials.

DIFFICULTIES & FUTURE EVOLUTIONS

- **To promote achievements, communicating on research activities is a necessity.** Drawing up a list of application examples, in a database intended for external interlocutors, would allow promoting the skills possessed at the UPPA and therefore enable a better planning for new partnerships. Events dedicated to the communication of the results of E2S UPPA research chairs are currently considered.
- **Promoting a single thematic day organised by UPPA Tech, among all the events going on on the territory, is a struggle.** The cancellation of the « Wood and wood-based materials » day is a perfect example. Same goes for the day dedicated to water quality, which gathered only six participants. To promote expertises, the first step is to identify strategic thematic such as batteries, hydrogen, etc... and co-organizing events in collaboration with competitiveness clusters and conurbation authorities is a strategy to uphold to mobilize the relevant actors.

SUMMER SCHOOLS



AIM

Thematic schools aim at training students and young researchers to a specific theme within the scope of E2S UPPA, to allow E2S UPPA to become an attractive international reference in the topics of Energy and environment transitions. They aim at positioning the excellence of the consortium's researchers on these topics, but also at attracting the best international students and at building research communities.



LEVERAGE / KEY EVENTS

These summer schools are based on the balance between advanced knowledge and pedagogy, thus highlighting the current topics of our laboratories. In addition, they contribute to the initialization of transdisciplinary actions such as the joint work currently going on, in regards to native hydrogen and the new energy mix, which involves law, economics and geo-resources.



INDICATORS

- Summer schools funded since the label « I-Site » was obtained: 7
- In 2019: 4
 - SUE, Functional polymers towards Energy Applications - Laurent Billon - IPREM
 - Energy transition, who is taking the decisions in the new mix, the politic, the citizens or the engineers ? - Isabelle Moretti - IPRA - LFCR
 - Pore scale imaging and image analysis - Peter Moneen - IPRA - DMEX
 - SU Summerschool, Seismic Unix summer school in Pau - Dominique Rousset - IPRA - LFCR

ISS2019 : Imaging Summer School 2019

Peter Moonen

Professor

STEE College - IPRA - D-MEX



INTERVIEW

From September 1st to 6th, 2019, the LFCR laboratory and the DMEX imaging centre, in partnership with Ghent University (Belgium) and Utrecht University (The Netherlands), jointly organized ISS2019, an international summer school on imaging and image analysis.

Supported by E2S UPPA, this international meeting brought 12 international experts (Australian National University, Imperial College, Lund University, etc.) to Pau, to share their knowledge.

In addition to theoretical lectures, ISS2019 included a practical component allowing 36 international participants to apply the knowledge acquired through exercises and workshops. In combination, with social activities such as a night walk in Pau and a wine tasting in the Jurançon vineyards, ISS2019 was an unforgettable experience for all those who participated.



Hannelore DERLUYN

CNRS researcher

IPRA - LFCR



STUDENTS CHALLENGE

“IMAGINE TOMORROW’S CAMPUS”



On the night of November 7th, 2019, 42 students from the Université de Pau et des Pays de l'Adour (from the Anglet, Mont de Marsan, Pau and Tarbes campuses) met in Pau to actively participate, in conviviality, to E2S UPPA Students Challenge in order to imagine the campus of tomorrow.

Participants were distributed in nine teams. Among these nine teams, four had their projects preselected by the jury after this sleepless night. These four teams are now, since November 18th, 2019, in the realization phase. They have been granted both human and financial support, and have until June 22nd, 2020, to give life to their ideas.



From November 8th, 2019 to April 16th, 2020

i FOUR PROJECTS IN PROGRESS

- **A2E (support, self-development and fulfilment)** - Amount allocated for the feasibility study: 400 €
Creation of a support group, on all campuses, to support students in their struggles.
- **Au Foyer Solidaire** - Amount allocated for the feasibility study: 1000 €
Creation of a “solidarity home” with access to a convivial space and a solidarity fridge.
- **Bee'O'top** - Amount allocated for the feasibility study: 600 €
Develop and preserve biodiversity in green spaces, on all campuses.
- **ECl (smart collaborative space)** - Amount allocated for the feasibility study: 300 €
Creation of a smart collaborative space to favour the sharing of information and ideas and to foster creation.



On February 13th, 2019, all the preselected teams reported the progress achieved in the development of their projects and participated in a training at pitch.



Next step: final selection and award ceremony, on June 22nd, 2020.

INTERNATIONAL DOCTORAL MOBILITY



AIM

The requirements and expectations for the outcomes of doctoral education have significantly changed over the last few years. Although the doctoral degree is obtained through the presentation of new research, in the form of a thesis, the main outcome of doctoral education is now the PhD candidate, who has acquired both a particular mindset and specific skills, mainly thanks to an international experience in research. PhD candidates constitute a true talent pool and are one of the foundations of E2S UPPA's cooperation with highly ranked international universities, specialized in the field of energy and environment. These international doctoral mobility grants are offered to support and promote such an approach.



LEVERAGE / KEY EVENTS

Excellent satisfaction rate among the doctoral candidates; significant increase of international mobilities, in particular towards E2S UPPA's target universities.



INDICATORS

- **Mobility projects supported since the label « I-Site » was obtained:** 25
- **In 2019:** 14
- **Destinations:** Germany, Australia, Belgium, Canada, Denmark, Spain, United States of America, Norway, the Netherlands, Poland, United Kingdom and Sweden
- **Mobility funded up til now:** 53 months
- **Allotted budget:** 4500 € for each laureate



Victor GARCIA-MONTOTO

*PhD candidate in Analytical Chemistry
Doctoral school Exact Sciences and their
Applications (ED 211)
STEE College
IPREM*



INTERVIEW - LAUREATE 2018

During the 9 months I spent at the University of Copenhagen I have been able to understand and specialise myself in other techniques such as Supercritical Fluid Chromatography, which is the main technique used for my PhD project, and obtained successful results by coupling it to an ICP MS instrument. These results are expected to be published in a high impact journal within the following weeks.

In addition, as one of the students taking part in the « Arctic Pollution Research » course, I was able to travel to Greenland, for 8 days last June, where we set up a laboratory in the Arctic Station owned by the University of Copenhagen in the Disko Island. There, we performed a study about how polycyclic aromatic hydrocarbons (PAHs), generated either by oil spills or oil combustion, are spreading along the sediments within the coasts of two important Greenlandic settlements.

INTERNATIONAL POSTDOCTORAL MOBILITY


AIM

The E2S UPPA consortium wishes to enhance international mobility and to foster links with international partner laboratories. Thus, PhDs graduated from the UPPA, who are both highly motivated and able to undertake collaborative and international post-doctoral research, are selected based on the excellence of their research work and post-doctoral project, through a competitive evaluation. They are awarded a one-year contract to work at a foreign laboratory, on a subject in line with E2S UPPA objectives.

INDICATORS

○ Laureates: 2

- *Thomas Bernet* - IPRA - LFCR, Imperial College London
- *Colin Bouchard* - ECOBIOP, University of California Berkeley



INTERVIEW - LAUREATE 2018

Thomas BERNET

*Post doctoral fellow
STEE College
IPRA - LFCR*

The post-doctorate project I had submitted to E2S UPPA, in partnership with Imperial College London, concerns the study of complex fluids. The collaboration went well and the results will be the subject of several publications (we have already submitted two articles in 2019). The Imperial College team I was integrated in has developed the state-of-the-art theories describing the physical properties, at the microscopic scale, of homogeneous fluids used in the energy sector. I added in the knowledge I had acquired during my PhD at the UPPA, about confined fluids and adsorption, studied with a theoretical approach, at the same scale. The combination of these two points of view has led to the development of a new description of the confinement of real fluids, more accurate and with more potential applications than previous approaches.



Imperial College London

INTERNATIONAL GUEST CHAIR



AIM

International chairs are part time visiting professor positions. Their duration is for five years. Applicants should have a track record demonstrating their high-level scientific achievements and strong international visibility. Applicants are appointed upon recommendation of E2S UPPA external scientific committee, after an international peer review of their project. Recipients commit themselves to spending on average two months per year at the UPPA. Two doctoral fellowships and a five-year postdoctoral fellowship are granted in order to support their research at E2S UPPA and in their own laboratory.



LEVERAGE / KEY EVENTS

Given the very high and unexpected success of the call for applications, 6 chairs have been appointed instead of the 4 initially projected. Two of them have started with the financial support of our industrial partners. The first significant achievements are (i) a technology oriented maturation project in relationship with the chair in Electrical Engineering, and (ii) the strong increase in the mobility of PhD students towards the universities to which the international chairs belong, thereby strengthening the relations between E2S UPPA and prestigious universities abroad.



INDICATORS

- **International chairs supported since the label « I-Site » was obtained: 6**
- **In 2019: 3**
 - Andrew Gellman - Scott Institute for Energy Innovation - Carnegie Mellon University (United States)
 - Emiloí Palomares - Institute of chemical research of Catalonia (Spain)
 - Ryan Rodgers - Florida State University (United States)
- **Research, facilities and administration costs for an international guest chair:**
 - **Duration:** 5 years, with at least two months per year at the university
 - **PhD:** 2 (for 3 years)
 - **Post-doctoral fellows:** 5 (for 1 year)
 - **Allotted budget:** 125 k€

InterMAT - Interface Matters in Solution Processed Inorganic/Organic Thin Film Solar Cells for Bio-inspired Solar Fuels Generation



Emilio PALOMARES

Spanish

Researcher

Institute of Chemical Research of
Catalonia (ICIQ)

STEE College

IPREM



INTERVIEW

The E2S UPPA International Chair represents an honour and a grand scientific challenge. An honour because your track-record as a scientist is evaluated by a panel of experts colleagues and a challenge because that is a great opportunity to open new scientific avenues at the forefront of hot research topics in energy and sustainability. As a scientist, I expect that the great scientific environment at the Université de Pau et des Pays de l'Adour and, in particular at IPREM, will catalyse the outcome of new results as well as the formation of a new generation of scientists working to solve social challenges. To do so, I will personally benefit from the experience of my collaborators at IPREM Prof. Laurent Billon and Dr. Laia Francesch, whose participation is essential to support my research plan. Moreover, when the group Chair is established we will participate in French and European research calls to increase the visibility at national and international levels, of both the University and the Chair. For instance, programs alike ERC synergy grants are very appealing for further cooperation between different research groups.

INTERNATIONAL WELCOME DESK



AIM

The International Welcome Desk (IWD) main missions are:

- accompanying international students, researchers and their families before and during their stay at the UPPA
- fostering a collaborative environment with external stakeholders (immigration offices, healthcare system, banks, housing providers, etc.) resulting in a win-win situation
- participating in the university-wide internationalization agenda by helping adapt internal procedures for an international public



INDICATORS FOR 2019

- **Thanks to the *Bienvenue en France* funding**, the IWD team was increased by two part-time workers (50 % in Pau, 80 % on the Basque Coast)
- **Accompaniment of PhD candidates and researchers:** 110 in Pau, 55 on the Basque Coast (+112% vs 2018)
- **International Masters E2S UPPA:**
 - 116 international students admitted (+93 % vs 2018)
 - 46 international students enrolled (+77 % vs 2018)
- **Non-E2S UPPA Master students on the Basque coast:**
 - 25 international students, of whom 6 benefitted from the same level of service as the international E2S UPPA Masters students did (double degrees, Mexfitec),
 - 1 summer school of 9 Chinese students
- **Hosting agreement requests processed:** 69 (vs 25 in 2018)

INTERNATIONAL PROJECT UNIT



AIM

The objectives of this action are:

- to promote and develop relationships with selected high level universities, ranging from bilateral collaboration to institutionalised partnership,
- to monitor calls for European projects both in the educational and research areas,
- to provide logistical support in the search for partners and funding,
- to help draft proposals in answer to calls for projects.



INDICATORS FOR 2019

- **Inter-university cooperation (for teaching) agreements:** 27
- **Erasmus+ agreements:** 22
- **Joint degree agreements:** 2
- **Submitted projects:** 55 European projects (21 INTERREG projects and 34 H2020 projects)
- **Signed European contracts:** 7, for a total of 422 k€

SUPPORT TO TRANSFORMATION

The implementation of the university's new organization, carried out between April 2017 and March 2019, was followed by a consolidation phase, starting from April 2019, which will continue until 2021.

During this year, several joint services have been implemented; these "CSP" (joint service center) are working for and with the new colleges, their faculties and all general services. There are:

- 2 CSP dedicated to proximity service in Computer Sciences, IT and digital devices,
- 1 CSP dedicated to digital research,
- 1 CSP dedicated to research management, within the STEE College.

Other CSPs, initiated in 2019, should be fully deployed in 2020 (one CSP dedicated to Logistics and a Center for Doctoral Schools). This new organization meets two essential requirements:

- a better coordination between the colleges, their internal components and general services, on one hand,
- and the ambition to create teams of professionals, united around common objectives, able to offer services of high quality, on the other hand.

Likewise, all the major processes of the UPPA are reviewed, according to a roadmap established in consultation with the general services and the colleges. As such, in 2019, 48 processes facilitating the good governance of the UPPA and its colleges have been redefined. Doing so allowed the direction to both identify and draw the consequences of the reorganization, whether in terms of management, administration or decision-making capacity. Subsequently, all HR and Finance processes were also reviewed and subject to significant changes in terms of business applications.

Meanwhile, the university set up and deployed a new strategy aiming to develop its decisional information system, in order to improve its strategic and operational management.

As for managerial direction, the actors in charge of applying new management methods or with new managing responsibilities were supported by collective training or individual coaching sessions.

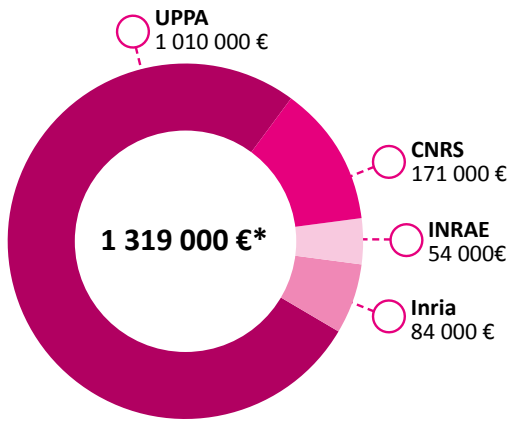
E2S UPPA financial contribution helped with running all these operations; new support functions were implemented with the recruitment of a « data manager », a developer in charge of the information system, and a specialist of quality procedures and control, expert in accompanying and monitoring transformations. Over this entire period, E2S UPPA funding amounts to a total of 188 k€, including 109 k€ for support functions.

HR	109 925
Help on management	
Data manager	3 335
General coordination assistance / 7 new poles of assistance General coordination / General Direction	9 596
	5 234
Continuous improvement	
Transformation manager	47 805
Quality manager	33 064
Help on continuous improvement	10 891
Training plan	65 000
Semaphores consulting	77 842
Advices on CSPs' implementation, coaching, introduction to new management models	
TOTAL	252 407



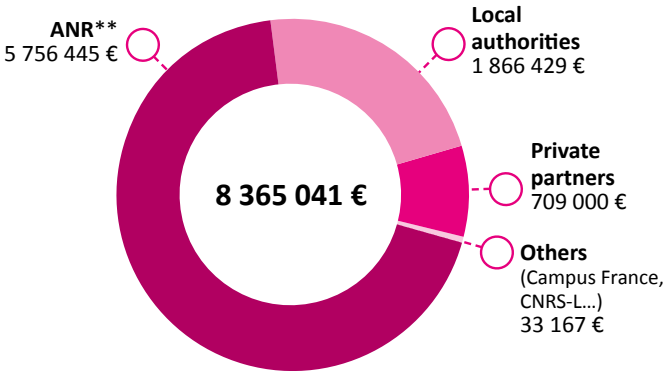
RESOURCES

RESOURCES PROVIDED BY THE CONSORTIUM

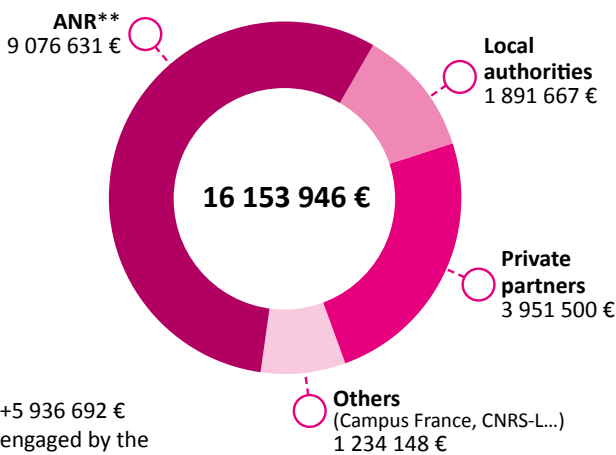


*without Research Administration, Facilities and Administration Costs

CONTRACTS AND SUBSIDIES RECEIPTS



CONTRACTS AND SUBSIDIES ACCOUNTING COMMITMENTS



+5 936 692 € engaged by the consortium over the whole duration of the projects

**French National Research Agency



EXPENSES

EFFECTIVE EXPENSES

E2S UPPA field of action	Expense
Structuration and governance	507 458 €
Research	1 850 936 €
Education	1 538 487 €
Technology transfer	569 539 €
Attractiveness	1 905 073 €
International relations	507 435 €
Student life	60 808 €

ACCOUNTING COMMITMENTS

E2S UPPA field of action	Commitments taken over the duration of projects
Structuration and governance	818 826 €
Research	9 179 822 €
Education	1 867 010 €
Technology transfer	1 548 485 €
Attractiveness	6 889 692 €
International relations	1 725 996 €
Student life	60 808 €