EXPRESSION OF INTEREST FOR A HORIZON 2020/HORIZON EUROPE PROJECT

Title of the targeted call for proposals and/or Topic of interest:

Area 11: International cooperation: Accelerating the green transition and energy access Partnership with Africa

Contact details

Country	FRANCE
Name of the organisation	Aix-Marseille University (AMU)
Laboratory	M.I.O.
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Short description of AMU:

Aix-Marseille University (AMU) was created in 2012, resulting from the merger of the University of Provence, University of the Mediterranean and Paul Cézanne University. It has more than 78,000 students including 10,000 international students, 7,680 faculty and staff members, 12 doctoral schools and nearly 3,300 PhD students. AMU is home to 132 research facilities. It has undertaken the HRS4R labeling process since June 1st, 2019 and is coordinator of the Erasmus + European University Network "CIVIS". AMU has been involved in more than 100 FP7 projects and until now 101 H2020 projects.

AMU Laboratory/ies involved:

Mediterranean Institute of Oceanography. The MIO research laboratory is a component of the OSU-Pytheas Institute and is under the joint direction of Aix-Marseille University, Toulon University, the CNRS and the IRD. Our goal is to better understand the oceanic system and its evolution in response to global changes. The MIO constitutes a center of expertise in marine biology, ecology, biodiversity, microbiology, halieutics, physics, chemistry, biogeochemistry and sedimentology. Our working environment is the world ocean, alongside its continental, atmospheric and sediment interfaces.

Areas of potential contribution:

MIO South Patnership: Tunisia and Morocco

For the last decade, the researchers of MIO have been developing numerous research programs in North Africa, mainly in Tunisia and Morocco. In partnership with Tunisian and Moroccan research institutions such as the universities, engineering schools and others, programs are developed in the in the fields of i) bioenergy (hydrogen and methane), and ii) human-induced pollution in territorial marine waters.

Bioenergy

For 5 years, in partnership with the Higher Institut of Applied Biological Sciences of Tunis (ISBAT), we have been supporting a young team of Tunisian researchers who are developing a project for the H2 and CH4 production from fruits and vegetables waste of the Tunis market. Besides, based one this team we are building international joint laboratory (Laboratoire Mixte International (LMI)) with several other Tunisian (ISSBAT and INRAP) and French institutes (MIO and INSA).

Otherwise, more recently we are building a partnership with the Moroccan Foundation for Advanced Science, Innovation and Research (MASCiR). The projects under development concern (i) the production of bioenergy from micro-algae cultivations of and (ii) the design of new bioprocesses for the phospho-gypsum treatment, waste generated by phosphate mining.

Human-induced pollution in territorial marine waters

The MIO team has built up in 2014 with Tunisian partners an international joint laboratory (LMI COSYS-Med) that aims studying the contamination in South Mediterranean ecosystems. This international joint laboratory associates 3 French (MIO, HSM and MARBEC) and 6 Tunisian institutions (CBS, FSB, INRAP, INAT, INSTM, IPEIT) with more than 100 scientists from both countries. The main objective of the international joint laboratory is to understand the interactions between contaminants and marine ecosystems in order to offer decision support tools and bioremediation tools to decrease the toxicity associated to contaminants. The institutional objective of this international joint laboratory is to create a research center of excellence in Tunisia dedicated to the marine environment.

Short profiles of the main persons involved:

Keywords :

Bioenergy; bioprocesses; electromicrobiology; food waste; microorganisms; aquatic ecosystems; extremophiles; taxonomy; ecology; ecophysiology; physiology; anaerobes; Tunisia; Morocco

People involved :

Yannick Combet-Blanc <yannick.combet-blanc@mio.osupytheas.fr>
Researcher (IRD) at the Mediterranean Institute of Oceanography (MIO). The ecology of marine microorganisms including the extremophiles, and the bacterial taxonomy, physiology, ecophysiology and bioenergy are the main interests addressed by Yannick Combet-Blanc. Basic research questions concern the trophic interactions between microorganisms such as the H2-transfer-interspecies in anoxic environments and in oxic-anoxic interfacial areas. Furthermore, he conducts numerous projects aiming to design process using microorganisms (remediation, acid lactic production, hydrogen and methane production, etc.). Among those, projects are are or have been developed in south countries such as Tunisia, Morocco, Mexico, and Senegal.
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Olivier Pringault <olivier.pringault@mio.osupytheas.fr>
Research director (IRD) at the Mediterranean Institute of Oceanography, (MIO), Olivier Pringault's main interest concerns the ecology of microorganisms in aquatic systems. He conduct projects aiming at understanding the interactions between microorganisms and contaminants. He is particularly interested in the interactions between microalgae and bacteria and how these interactions can be i) affected by contaminants ii) used for the bioremediation of contaminants. He has experience of working with a wide range of techniques (cultures, mesocosms, *in situ*) and situations (on ship, in the field, in the laboratory) and countries (Vietnam, New Caledonia, Fiji, USA, and across Europe), both alone and as part of a group, either as a simple participant or as the coordinator of the program.
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Other people involved :

- Pierre-Pol Liebgott: Bioenergy, electromicrobiology
- Marianne Quemeneur, Gael Erauso : extremophiles, metagenomics
- Patricia Bonin, Alain Dolla, Valérie Michotey : microbial ecology, omics, genetics
- Guillaume Blanc/Christelle Desnues : interaction virus/microalgae