

EXPRESSION OF INTEREST FOR A HORIZON 2020 PROJECT

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

Horizon 2020 Green Deal Call
Topic: LC-GD-7-1-2020

Contact details

Country	FRANCE
Name of the organisation	Aix-Marseille University (AMU)
Laboratory	IMBE
Name of the contact	Bousquet-Mélou Anne
Phone	+33 (0)413551220
Email address	anne.bousquet-melou@imbe.fr nicolas.gochgarian@univ-amu.fr naoufal.aouane@univ-amu.fr

Short description of AMU:

Aix-Marseille University (AMU) was created in 2012, resulting from the merger of the University of Provence, the 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 the coordinator of the Erasmus + European University Alliance "CIVIS". AMU has been involved in more than 100 FP7 projects and until now 102 H2020 projects.

Laboratory involved:

Mediterranean Institute of Biodiversity and Ecology composed of seven major teams :

- 1 [Palaeo-environments and macro-ecological processes](#) (PPM)
- 2 [Origin and evolution of biodiversity](#) (OEB)
- 3 [Ecological vulnerability and conservation](#) (VEC)
- 4 [Natural and cultural heritage restoration engineering](#) (IRPNC)
- 5 [Molecule diversity and functioning in ecosystems](#) (DFME)
- 6 [Biomarkers, environment and health](#) (BEH)
- 7 [Environmental biotechnology and chemometrics for biodiversity promotion](#) (BEC)

Areas of potential contribution:

My research concerns chemical ecology, which studies the interactions between organisms and their biotic or abiotic environment through a wide variety of chemical compounds. My research on understanding the role of plant specialized metabolites (PSM) is based on 3 main axes that have been partly developed during my thesis work at the University of Toulouse III and since my appointment at the University of Aix-Marseille. (1) Chemotaxonomy, which makes it possible to establish relationships

between the chemical composition of plants and their systematic classification; (2) Environmental metabolomics, which assesses the biochemical responses of organisms to the biotic and abiotic conditions of their environment and understands how the different components of global change (biological invasions; land use change; air pollution) affect the production of PSMs; (3) The role of these SMPs, once introduced into the environment, on vegetation dynamics through allelopathic processes. I carry out this work within Mediterranean and tropical ecosystems, particularly in the mangroves of Vietnam, French Guyana and Martinique.

I am particularly interested in mangroves, the only forests at the sea-land interface in tropical and subtropical regions. They are key components of tropical coastal ecosystems and provide many services. They are exposed to the impacts of climate change and human activities. As a result, their ecological functions and the ecosystem services they provide are under threat. Mangroves produce an important diversity of plant specialized metabolites (PSM), whose expression can be strongly affected by the consequences of climate change (e.g. changes in temperature and salinity). These natural compounds represent the strategies developed by plants to survive in their environment because they can inhibit the growth and development of other plants, insects or microorganisms. PSM can be used as natural bioactive compounds in various economic applications such as agronomy, forest management and human health. Improving our knowledge of the functioning of these forests could help predict the future of mangrove development and lead to knowledge useful for the sustainable management of these ecosystems.

I am also developing these research themes in Mediterranean forests.

Involved persons:

Bousquet-Mélou Anne