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Specialization Area: Analysis and Environmental assessment  
Research Area: 3.6. Pollution and environmental impacts



**PhD project: Environmental risk assessment of micro and nanoparticles derived from conventional and biodegradable polymers under marine conditions**

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**Summary:** Year by year, the global plastic production has been increasing sharply, so much so that in 2018 it reached almost 360 million tonnes. Along with its growing abundance, some other factors such as their environmental persistence and chemical composition turn plastics into an environmental threat. Plastic pollution pose a threat especially to marine ecosystems, in which, since 50 years ago, this type of waste has been found. Although bigger plastics cause trouble, most of them are not even visible to the naked eye. These tiny particles are scattered all around the globe, but even so, their biological effect is barely known. In this thesis project, that effect is going to be analysed, both micro-/nanoparticles and chemical additives from conventional and biobased polymers, at the level of organism in different species and developing stages, always under environmentally relevant conditions. The model species selected for this study are *Acartia clausi*, *Paracentrotus lividus* and *Cyprinodon variegatus*, three model organisms for this type of bioassays. The main thesis objective is to assess the environmental risk derived from the plastic release to marine ecosystems and their natural aging. The study will be developed based on standardized methods specifically adapted for micro- and nanoplastics. The tested materials will come from both environmental and commercial products already available in the market, as well as customized ones.

