

The aim of this project is to establish an impartial test-protocol and build a platform for testing AF-coatings in a statically and dynamically manner. With knowledge of type, composition and performance of the anti-fouling paints tested we can advise the ship owners in an objective way and evaluate the ecological impact of a paint through a well-founded life cycle analysis.

### **Hitchhiking across the world's oceans: biofouling and introduced species**

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Biofouling and introduced species are one of the causes of a changing biodiversity in the marine environment. In this talk I will address the topic of hull fouling and introduced species i.e. species introduced by human activities beyond their native range into new areas. In their new habitat, such species pose a threat to native biodiversity because they may alter local communities, and have unwanted economic effects. Hence the introduction of non-indigenous species is recognized as a major threat to the marine environment, and, for example tackled in EU legislation such as the MSFD.

Shipping, with ballast water and hull fouling, is an important vector for species introductions into the marine environment and since the dawn of maritime transport hull fouling has remained an everlasting nuisance, not only because it reduces the ships' speed and clogs intakes and pipes, it also impacts marine biodiversity, for, as biofouling, species are transported all over the world's oceans and introduced into areas beyond their natural distribution.

While ballast water is being tackled in various legislations and regulations, hull fouling remains an important cause of introductions, especially since the ban of the very effective anti-fouling agent TBT (Tributyltin). During the past decades, the chances for species to survive their journey and ultimately to colonise areas beyond their natural distribution has greatly increased, because maritime transport has become increasingly faster and more intense. Moreover, the permanent establishment of migrants is aided by the growing availability of artificial hard substrata in coastal areas and climate change. Barnacles (Cirripedia), probably the most common fouling organisms, are a good illustration of the ongoing changes as many species have nowadays established populations far beyond their original distribution.