



Bundesanstalt für
Materialforschung
und -prüfung

ADLERSHOFER KOLLOQUIUM **Analytik**

Topic: From offshore windfarms to microplastics – Challenges and new analytical tools to decipher environmental impacts related with recent anthropogenic activities within coastal zones

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Chair: Prof. Dr. Carsten Engelhard, BAM – 1.

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[Participation via webex](#)

Summary: Despite the ongoing reduction of emissions of contaminants into the environment, the coastal zones of the North Sea still belong to the most impacted ecosystems worldwide. In particular, the ongoing evolution of coastal zones into industrialized areas, e.g. due to extensive shipping or the construction of offshore wind farms within the framework of the ongoing energy transition in Europe even boosted the release of either known, but also of various new contaminants into the marine environment. This includes e.g. rare element groups such as the so called TCEs beside other threats such as micro and nano plastics (MP/NP), which gained a strong scientific and public interest during the last years.

The accurate analysis of such contaminants is in particular of significance for public health concerns beside the overall future sustainable development and management of the coastal zones as required by EU wide legislation.

This contribution will focus on the role of new powerful analytical tools to study different unwanted chemical side effects on the marine environment due to the strong development in offshore wind energy production within the context of the ongoing European energy transition.

In particular the application of ICP-MS/MS for interference handling as well as the role of new hyphenation approaches for routine ultra trace analysis of emerging contaminants at ng/L levels, in order to allow a systematic evaluation of the emission load caused by anthropogenic activities within the coastal zone will be highlighted. In addition, complementary tool to target new pollutant groups such as plastics and paint particles will be discussed.