

Applications of innovative passive sampling and dosing

CHAIRS: Annika Jahnke, Philipp Mayer, Beate Escher



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Passive sampling methods offer promising tools in a variety of contexts: (i) in studies of partitioning processes between environmental compartments; (ii) in risk-based decision making, e.g. at contaminated sites; (iii) in the assessment of bioaccumulation, exposure and (eco)toxicological effects. A major advantage of passive sampling approaches is that they provide freely dissolved concentrations, which often can be considered as the effective concentration for environmental partitioning processes, bioaccumulation and toxicity. Another benefit is that some passive samplers enrich complex mixtures of chemicals present in the environment, which can then be identified by chemical analysis and/or characterized with bioassays. Numerous passive sampling devices have been developed for both in situ and laboratory-based use, covering matrices such as soil, sediment, water, air, vegetation and biota as well as a range of chemicals of concern. The rapid development of passive sampling and associated dosing methods for organic contaminants in many different media and applications highlights the need for a forum at the SETAC Europe Annual Meeting: In this session, we aim to discuss recent progress, exchange ideas and open up for collaborations within this field. A special focus of this session will be on applications of innovative equilibrium passive sampling and dosing methods for environmental fate, bioaccumulation and toxicity studies. We particularly encourage contributions demonstrating how passive sampling can enhance our understanding of the thermodynamic controls on organic pollutants in the environment and how it can be linked with (eco)toxicological studies, e.g. via passive dosing into cell-based bioassays.

SESSION TYPE: Platform, Poster Spotlight and Poster