

Name of Special Session**S8. Legacy and Emerging Flame Retardants: Biotransformation and Bioavailability****Chairs and/or Organizers**

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Objective

Flame retardants (FRs) comprise a diverse group of chemicals, used in an array of commercial and industrial applications to delay or prevent the onset of fire. These compounds, particularly additive FRs, can enter the environment through spills, leaching and volatilization during their production, use and disposal or recycling. Human and wildlife may be exposed to FRs via a multitude of pathways, including: ingestion, inhalation and dermal contact. This has raised concerns over the potential adverse health effects arising from such exposure, such as: endocrine disruption, neurodevelopmental and reproductive toxicity and even cancer. While several recent studies have assessed external exposure of human and wild life to FRs, knowledge remains limited in the fate, biotransformation and toxicokinetic profiles of these chemicals in exposed organisms.

It is evident that more research is required on FR biotransformation with respect to, e.g., metabolite identification, metabolic pathways, inter-species variation and the influence of congener and FR structure on metabolic susceptibility, as well as detection of FR metabolite residues as biomarkers in exposed species. There is also increased interest in studying the uptake and elimination kinetics of FRs, which is essential for understanding the bioaccumulation potential and consequently assess the risk arising from exposure to these chemicals. Exploring these themes will advance our knowledge and understanding of the consequences of environmental contamination with FRs and support mitigation strategies.

S7: “The Biotic Exposome of Emerging Flame Retardants in the Global Environment” focuses on FRs in the biotic exposome and in the global environment and biota.

S8: “Legacy and Emerging Flame Retardants: Biotransformation and Bioavailability” focuses on FR metabolism and bioavailability only.

S9: “Flame Retardants in Human Tissues; Implications for Human Exposure” focuses on FRs/biomarkers in human matrices (blood, urine and milk) and thus no non-human information.