

Migration Pathways to the environment –"Horizon Scanning" for FRs present in e-waste. ER1

At VU, complementary to the work of ESR1 at UA (to whom ER1 will provide additional supervision and training), this project will exploit the potential of state-of-the-art GCxGC-TOF-MS techniques coupled with sophisticated multivariate data analyses to identify and quantify concentrations of both "established" and "emerging" FRs in a range of electronic waste. The same techniques will be applied to field and laboratory studies of weathering of flame-retarded polymers and FR migration to water and soil. Conditions studied will mimic those encountered during outdoor storage of waste materials and post-disposal in landfill. Methods will be developed to follow the biodegradation of BFRs in waste from landfills using rapid *in vitro* assays (e.g. microsomes). Further, XRF and laser ablation ICP-MS detection techniques will provide information on weathering. ER1 will undertake a secondment to UA where complementary analytical techniques like LCQ-TOF-MS will provide additional information.