

An experimental approach to examining correlations between external exposure to flame retardants and human body burdens ESR6

At NIPH, this project will collect matched samples of indoor air, dust, hair, saliva, and urine from a cohort of households each comprising mother and 1 child aged 6-12 years. Blood serum will be also collected from mothers and if possible from the child, with dietary intake for mothers and children estimated via food frequency questionnaire. Air, dust, urine, and serum samples will be analysed for concentrations of “persistent” FRs (PBDEs and HBCDs) and of emerging “metabolisable” FRs (brominated phthalates and organophosphorus FRs - OPFRs) as appropriate. Hair, nail, and saliva samples will be analysed by ESR9 at VITO. Total external exposure will be estimated for children and adults separately from data on the indoor environment and food frequency questionnaires. These exposure estimates will be compared to information on internal exposures obtained from urinary excretion (“metabolisable” FRs) and serum concentrations (“persistent” FRs).