INFLAME

ER1 Migration Pathways to the environment

”Horizon Scanning” for FRs present in e-waste

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e-waste background

- Globally e-waste growing by about 40 million tons a year
- > 1 billion mobile phones sold in 2007
- e-waste can end up in landfills
  - >4.6 million tons in US landfills in 2000
  - Hong Kong, 10-20 percent of discarded computers go to landfill
- Most polymer electronic materials contain flame retardants, often with halogens
- Regulations:
  - Convention of Basel to control hazardous waste between countries, e.g. to prevent electronic waste being dumped in landfills due to its hazardous content
  - In practice dumping continues in many countries

Exposure

Recycling facilities

backyard recycling

e-waste

Leaching from landfills

Objectives ER1

- To study the mechanisms via which FRs migrate from e-waste

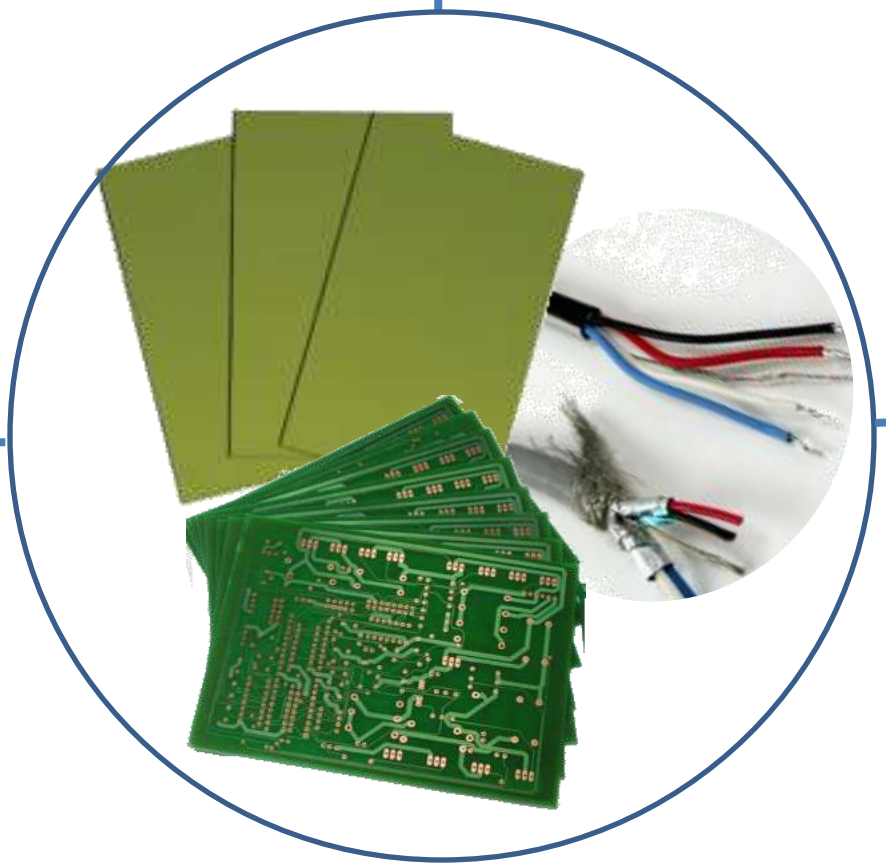
- Develop analytical and leaching methods
- Horizon scanning e-waste
  - Occurrence, leaching (field and lab)
- Hazard of e-waste
  - Toxicity profiling, effect-directed analysis (EDA)
- Training
  - Analytical and leaching methods
  - Multivariate statistics
  - Toxicity screening
- Mobility period
  - UA complementary analytical techniques

Leaching and weathering

Leaching FR to air

Leaching
FR to water

FRs,
concentration,
toxicity profile



Weathering
of material

ER1 vacancy

- Institute for Environmental Studies, VU University Amsterdam
- Mobility period University of Antwerp
- Period: Autumn 2011 – Autumn 2013
- Three PhD students replied
- ER1 vacancy open from February-March 2011