The RAMSES-4-CE project

– developing a smart sensor network for e-waste characterisation –

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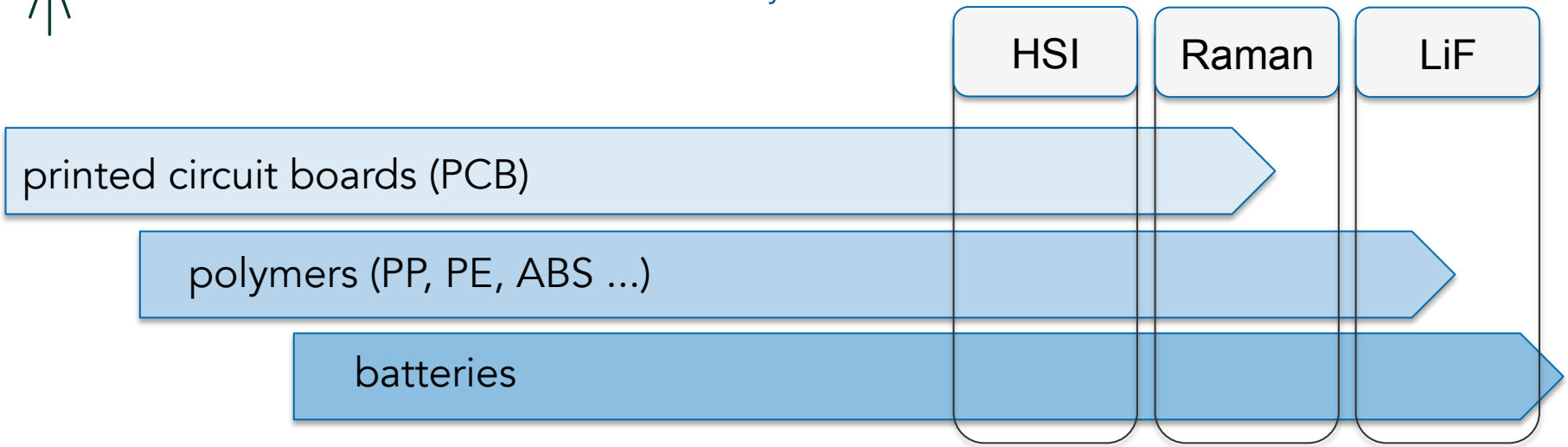
The Scope

... fast identification of critical compounds in complex recycling streams
... using optical spectroscopy-based sensors with real-time data processing

RAMSES4CE for Circular Economy

Raman, Absorption and eMission Spectroscopy in an intEgrated Sensor system for the Circular Economy



HOW?

1. development of an adapted Raman sensor
2. its integration into a LiF-HSI system (EIT inSPECtor)
3. advanced multi-source data fusion + machine learning for rapid integration

SUMMARY

RAMSES4CE for Circular Economy

... provides an integrated solution for multi-sensor imaging and point validation
... using HSI, LiF and Raman spectroscopy with RGB and laser profiler

... delivers sensor-specific spectral libraries (for polymers, semiconductors, battery compounds)
... and efficient data (pre-)processing and fusion routines (Python toolboxes)

... designed for in-line e-waste recycling stream characterisation
... as a contribution to increased efficiency in secondary resource recovery

more information >>> www.ramses4ce.eu

Project Partners:

Helmholtz-Institute Freiberg for Resource Technology | Helmholtz Zentrum Dresden-Rossendorf (HZDR-HIF)
Institute of Applied Physics | TU Bergakademie Freiberg (TUBAF-IAP)
Freiberg Instruments GmbH (FI)
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