

## **SUMMARY**

Waste printed circuit boards (WPCBs) – a common type of e-waste consisting of electronic components with a significant amount of rare and precious metals as well as glass fiber composites. The mechanical size reduction and separation technology of pre-crushed WPCBs, using direct and separative disintegrator milling, has been compared with other technologies (hammer milling and high voltage fragmentation). One of the objectives of the project and this bachelor's thesis, is to investigate the possibility of using inertial-air separation, which can be incorporated into a disintegrator system to reduce the number of operations.

Throughout this work following tasks were successfully completed: Obtaining particles that need to be separated using the CIMM method; Description of particle parameters that will be used for modeling the movement of various particles in an air flow under the influence of various external forces; Determination of air speed and productivity in the grinding and separation system; Experimental testing of the separation process; Comparison of the obtained data with the predicted ones.

While working on it, I had a chance to get more and more knowledge about the recycling of the E-Waste, mainly WPCBs. Me and my supervisor did our experiments laboratory as well get to see some unusual things there. At the same time managed to meet with my co-supervisor and another experiments. This study can contribute to understanding of the WPCBs, how to recycle them, which type of separation is good enough, as the energy prices go higher and world is trying to go to green technology