Contribution ID: **16**   Type: **Paper presentation**

Classification algorithm of an automated sorting system for Construction and Demolition Waste materials

Friday 16 September 2022 12:00 (20 minutes)

Construction and Demolition Waste (CDW) management market size has reached in 2021 USD 212.8 Billion and its constantly increasing and expected to reach USD 287.4 Billion by 2027. The demolition of existing infrastructures generates more than twenty types of materials. CDW management aims at the disposing and reusing the materials to reduce the negative impact on the environment and the consumption of raw materials which have higher costs at present after the COVID-19 pandemic. In the last years, the integration of AI and robots for efficient recycling activities in CDW has been increasing. The development of a system for CDW material handling and processing composed of a robotic arm and classification algorithm will have important benefits such as increasing the total amount of recycled material, maximize the economic value of recycled materials and products, reducing the environmental degradation, greenhouse gas emissions, pollution, contamination. This paper aims to present a classification algorithm for fast identification and selection of CDW materials based on information obtained from several hyperspectral cameras and sensors. The main goal is the division of the materials from the conveyor belt into specific groups and their placement into dedicated bins.

Authors: PETRE, Ioana (SC BEIA CONSULT INTERNATIONAL SRL);   Dr SUCIU, George (Beia Consult International);   Mr TAPURICA, Ionel (SC BEIA CONSULT INTERNATIONAL);   Mr SIMIONESCU , Stefan (SC BEIA CONSULT INTERNATIONAL SRL)

Presenters: PETRE, Ioana (SC BEIA CONSULT INTERNATIONAL SRL);   Mr TAPURICA, Ionel (SC BEIA CONSULT INTERNATIONAL);   Mr SIMIONESCU , Stefan (SC BEIA CONSULT INTERNATIONAL SRL)

Session Classification: Session 2A - Sensor Networking

Track Classification: Sensor Networking