WASTE MANAGEMENT &RECYCLING DECEMBER 02-03,2021

UNITED RESEARCH FORUM (CONNECT WITH RESEARCH WORLD)

*Title: Application of sensors based on the Arduino system in the process of bio-drying of municipal solid waste

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*Abstract:

This paper presents usage of Arduino based sensors in the laboratory simulation of the biodrying process. Biodrying process use generated heat, caused by forced aeration and aerobic decomposition of organic matter, to dry and stabilize organic matrix. In order to optimize biodrying process, several parameters that affects the process has to be monitored. Those are: air humidity, air temperature, air flow rate and CO_2 concentration at the inlet and outlet of the bioreactor cell. In addition, the humidity, temperature and displacements of the organic matrix should also be recorded. While commercial sensors are easily available, low costs of Arduino based sensors makes them a vialable alternative. It will be demonstrated how to adjust and set-up Arduino DHT22, BMP180, MQ-135, CJMCU-811, SHARP GP2Y0A41SK0F, DS18B20, JQC-3FF-SF sensors and switches in order to obtain self-operating biodrying process with continuous data logging. In addition, the results of the single biodrying trial test will be briefly presented.

Acknowledgments:

*Biography :

Dino Bosilj is a doctoral student at the Faculty of Geotechnical Engineering in Varaždin and works as an assistant on the founding research project of the Croatian Science Foundation "Testing and modeling the mechanical behaviour of biodried waste as a prerequisite for energy recovery – Wte" in the scientific field: Technical sciences, field: Interdisciplinary technical sciences, branch: Environmental engineering. His research is mainly based on waste biodrying. He is also a Backend developer and spends his free time programming.

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*Category of Participation: Oral
*Category of Presenation: Student Speaker Presentation
 Session Name: Waste treatment