CoMoSyMe

PROBLEM/ISSUE ADDRESSED

Metalworking fluids are used in machine parks that process metal goods. The quality of the metalworking fluid is difficult to quantify precisely. The industry standard is to measure a mix of different parameters, and to make sure, that each individual parameter stays within the optimal range. Nowadays in industry the operators manually monitor the fluids using a refractometer and add water or oil to regulate concentration. This requires in person sample collection and uses on average about 2-3 liters of chemicals every day.

SOLUTION

The system that is built in CoMoSyMe aims to continuously monitor and control the concentration of metalworking fluids (also called coolants, industrial fluids, cutting fluids), to keep them inside their optimal range.

WHY IT IS IMPORTANT FOR SOCIETY

By keeping parameters like concentration and pH within an optimal range, the fluid lifetime is expected to be extended by about 2-4 times, which will result in a substantially reduced chemical use and decreased waste. This product shall reduce manual work and keep the fluid parameters within their optimal range and, thus, enhance product quality.
Metalworking fluids may have a negative impact on the machine operator's health and could cause skin or respiratory issues from physical contact, the system developed in this project will reduce the need of human interaction with the fluids

eit Manufacturing

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> *"Thanks to EIT we were able to fund the development of a commercialisable prototype"*

MAIN RESULTS & INSIGHTS

- A prototype deployed in one field test in Sweden and in the process of being deployed in a second field test in Italy
- In the field-tests we are using a model to estimate the concentration of the metalworking fluids using an innovative method. Using this method will avoid the usage of a refractometer or titration and reduce the maintenance of the monitoring system