eMOTOR-VTB
design for recycling

PROBLEM/ISSUE ADDRESSED

When it comes to energy efficiency and sustainability electric vehicles offer advantages over traditional fossil-fueled vehicles. However, even electric vehicles are not 100 percent environmentally friendly as many of the components used are not recyclable. At the end of the vehicle's life cycle, these components end up in landfills – especially the magnets that drive them.

SOLUTION

The eMOTOR virtual testbed is a set of existing interconnected test rigs, powered by new sensors which measure recycled components behaviors in electric motors. The aim of this testbed is to provide the tools for redesign and evaluate an e-motor system made of recycled parts, trying to maximise their usage without compromising performance. The result is a digital platform that looks at many aspects of recycling, eco-design and performance evaluation of e-motor components along the entire value chain, focusing primarily on the magnets.

WHY IT IS IMPORTANT FOR SOCIETY

SMEs and LEs can explore the advantages of a new eco-designed motor such as:

- Same or improved performances
- An easier future dismantling design
- Long life quality assessment evaluation
- Life Cycle Assessment (LCA) of new design

> " *Thanks to EIT we had the opportunity to start a research and business project dedicated to the issues of recycling and sustainability. The developed testbed allows companies to evaluate the use of electric motors with recycled parts in their business, fostering a competitive and eco-sustainability advantage.* "

Maurizio Griva - Innovation Manager at Concept Reply

MAIN RESULTS & INSIGHTS

- Evaluate recycled e-motor performance
- Encourage e-motor usage with recycled parts
- Redesign e-motor for sustainability

ADRIAN BABLOK
Project Manager at EIT Manufacturing
END-TO-END DIGITALISED TESTBEDS
Cross-KIC projects
AIM: CREATE A CREATIVE AND INNOVATIVE ENVIRONMENT WHERE START-UPS, SCALE-UPS, INDUSTRY PARTNERS, RESEARCHERS AND INSTITUTES COLLABORATE OPENLY

iFishCan
Intelligent monitoring of food loss and food waste for the fish canning industry

PROBLEM/ISSUE ADDRESSED
The iFishCan testbed is a cognitive IIoT platform designed to improve the efficiency of the fish canning industry. It addresses small and medium-sized enterprises that want to reduce their food waste and their environmental impact.

SOLUTION
iFishCan consists of a low-cost sensor network connected through an IIoT system, which collects data in real time; an advanced AI-engine coupled to a manufacturing execution system (MES) allows predicting different process indicators.

WHY IT IS IMPORTANT FOR SOCIETY
With the mobile testbed, companies can make better-informed decisions and optimise water and energy consumption. iFishCan can be easily adapted and scaled to different types of fisheries and products with a high customisation grade.

> " *Thanks the EIT we were able to build a strongly multidisciplinary team, formed by several start-ups and research and development centres from different Knowledge and Innovation Communities, which was capable of conceptualising and implementing an innovative technological solution addressing the food waste and loss as well as other environmental indicators in the food manufacturing industry.* "

Idoia Olabarrieta Paul - Senior Researcher at AZTI

MAIN RESULTS & INSIGHTS

10% less food loss during production

5% - 10% less energy consumption

5% - 20% less water consumption

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Project Manager at EIT Manufacturing
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PROBLEM/ISSUE ADDRESSED
Food loss reduction and supply chain efficiency are the focus of this digital testbed for the primary sector. A teaching factory builds the bridge between academia and industry and creates a basis for new synergy models.

SOLUTION
The consortium, consisting of partners from the milk processing industry, worked on a robotics-based demonstrator for food processing, applying autonomous pick-and-place operations to package small production batches.

Furthermore, the testbed consists of digitised milk cooling tanks, which allows continuous monitoring. This results in better awareness of critical parameters for raw milk and less food loss.

WHY IT IS IMPORTANT FOR SOCIETY
A teaching factory provides the framework for a two-way knowledge transfer channel in which manufacturing topics form the basis for new synergy models between academia and industry. In addition, the developed testbed enables autonomous food processing and is a pilot for milk tank monitoring.

" Thanks to EIT, we were able to provide an Industry 4.0 testbed which offers the service of the required infrastructure and knowledge for developing, testing and validating digital and advanced manufacturing solutions and IoT in a safe and cost-effective approach for companies without requiring any significant capital investment, addressing food waste loss and other environmental indicators in the food manufacturing industry. "

Kosmas Alexopoulos - Research Engineer at LMS

MAIN RESULTS & INSIGHTS

10% less food loss in the primary sector

5% less manufacturing lead times

1 established and operating teaching factory

ADRIAN BABLOK
Project Manager at EIT Manufacturing
END-TO-END DIGITALISED TESTBEDS
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SAIFE
Safety through AI vision

PROBLEM/ISSUE ADDRESSED
SAIFE stands for "safety testbeds through AI for food production environment" and focuses on reducing the numbers of forklift accidents on European shopfloors.

SOLUTION
The goal is to provide forklift drivers with real-time information about moving persons on the shopfloor in order to prevent accidents. This intelligent system works via visual sensors complemented by an AI software and tablets on the forklifts.

WHY IT IS IMPORTANT FOR SOCIETY
In a primary implementation, six testbeds have been installed in the food industry in real production environments across Europe. This includes also one mobile testbed to be rented out!

"*Thanks to EIT, we were able to make the food industry safer in the future through the synergies of the Knowledge and Innovation Community partners.*"

Sebastian Bienia - System developer in the SAIFE project

MAIN RESULTS & INSIGHTS

Reducing accidents with forklifts on the shopfloors

Enhancing circular economy

Less food loss and food waste

Improving supply chain efficiency and effectiveness

ADRIAN BABLOK
Project Manager at EIT Manufacturing
END-TO-END DIGITALISED TESTBEDS
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