

SUCCESS STORY IN METALLURGY

EPM RIGA

Company "EPM Rīga" was founded in 2010 with the aim to develop and commercialize scientific developments in a number of industries, including designing and testing of prototypes and new technologies and their application in production processes.

THE PROBLEM

Real life prototype of a new liquid metal mixing furnace is expensive to build and test. Simulation is needed.

SUCCESS STORY DETAILS

HPC provider: EPM Riga
 Domain Expert: EPM Riga
 Country: Latvia
 Link:
<https://gitlab.com/eurocc-latvia/mhd-mixing-hpc-model>

THE HPC PROBLEM DOMAIN

Modeling is needed in order to find liquid metal mixing furnace configurations that offer the best mixing conditions and efficiency.

THE SOLUTION

The company has integrated an HPC demonstration case about electromagnetically induced liquid metal into their services.

THE BENEFITS

EPM Riga has achieved additional value to their consultancy service

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THE PROBLEM

Real life prototype of a new liquid metal mixing furnace is expensive to build and test. Simulation is needed.

Possible solutions are harder to explain without any visual materials or trusted case-studies.

THE HPC PROBLEM DOMAIN

Modeling is needed in order to find liquid metal mixing furnace configurations that offer the best mixing conditions and efficiency.

Simulations entail modeling of liquid metal flows in furnace induced by various electromagnetic inductors and their locations relative to furnace. Due to the scale of industrial processes and inherent complexity of MHD modeling, it is oftentimes not possible to accurately model such systems in a timely manner.

THE SOLUTION

The company has integrated an HPC demonstration case developed by the experts of EuroCC Latvia about electromagnetically induced liquid metal flow (link: <https://gitlab.com/eurocc-latvia/mhd-mixing-hpc-model>) into their services as a complementary tool for metallurgical companies to accurately model liquid metal flows in their furnaces induced by various electromagnetic inductors, especially novel permanent magnet systems.

THE BENEFITS

EPM Riga has achieved additional value to their consultancy service by providing their customers with both 1) illustration of possibilities to integrate HPC in their everyday workflow and 2) a training material for HPC use if a client chooses to pursue technological and operational upgrades.