

Other Projects With a Focus on Energy

Hytwin – Hybrid Digital Twin for the Optimization of Plastics Processing Processes

Computer simulations and digital twins offer the possibility of optimizing almost the entire extrusion process. The project team from the “System Analysis, Prognosis and Control” department took a hybrid approach: they developed a digital twin that is both data-based and model-based, which predicts and optimizes using AI. The result is an easy-to-use software platform for quality forecasting that also helps small and medium-sized enterprises (SMEs) to achieve higher production speeds, greater flexibility and higher product quality at the lowest possible cost.



www.itwm.fraunhofer.de/hytwin-en

OpenMeter – Data and Analysis Platform to Increase Energy Efficiency

The availability of consumption data is important for increasing and evaluating energy efficiency, for smart grid planning and for the interdisciplinary development of innovative services and business models. The OpenMeter project created the high-performance digital open data platform “Open Energy Meter Data” – visualization, analysis and comparison of energy consumption data. A team from the “System Analysis, Prognosis and Control” department researched and evaluated mathematical methods of artificial intelligence to derive energy baselines and parametric forecasts of future energy consumption.



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DYNEFF and DingFEST – Efficient Operation of District Heating Plants

In the “DYNEFF” project, researchers from the “Transport Processes” department are working together with GEF Ingenieur AG and Technische Werke Ludwigshafen on “Dynamic network simulation to increase efficiency in district heating generation”. The successful collaboration led to the follow-up project DingFEST “Digital twin for flexible and efficiency-optimized control of decentralized district heating networks”. With the results, the research team is helping supply companies to ensure highly efficient network operation in the long term without jeopardizing their stability, resilience and security of supply – even under increasingly complex and varying operating conditions.



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