

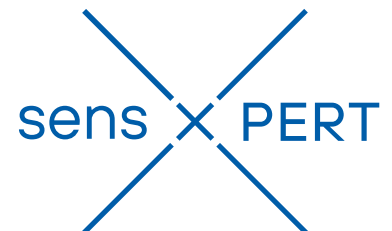
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Company

sensXPERT is a technology brand of NETZSCH Process Intelligence GmbH. It provides data-driven process control solutions that help customers in the composite industry increase their productivity in real time. Developed out of over 50 years of experience in plastics manufacturing, the company enables composite and plastic part manufacturers to a moment-by-moment in-mold material characterization and processing of data to forecast the impact of internal and external mold conditions on final part quality and performance.

Products and technologies

The sensXPERT process control solution feeds through material characterization sensors. The sensors are installed directly into the mold, offering improved sensitivity and the ability to measure a wide range of material properties in real-time. Additionally, the sensXPERT Edge Device takes this wealth of data and integrates it with pre-existing kinetic models, generating advanced predictive machine learning models. These machine-learning models are instrumental in forecasting properties like the degree of cure or crystallization, glass transition temperature, and other relevant thermal or mechanical attributes of the processed raw material. If these predictions stray from the target value, the process allows a dynamically fine-tuning until the projections align with the desired value. This adaptability, fueled by real-time data and predictive insights, helps produce a higher quantity of quality parts while reducing waste. Ultimately, this system boosts manufacturers' abilities to detect quality changes, control processes, and optimize composite manufacturing in a genuinely dynamic and adaptable way.

Strengths

sensXPERT Digital Mold creates an opportunity for process visualization and the ability to remedy deviated parts before they move downstream. Flexibility in the cool-down/post-curing period is another added benefit. Furthermore, an advantage of Digital Mold lies in its creation of a digital thread for each part produced, which is beneficial for quality control and general reporting. Overall, sensXPERT achieves a decrease of up to 50% in existing scrap, an increase of up to 23% in energy savings, and up to 30% cycle time reduction.

Outcome of the Mission

Gaining introductions to key decision makers in the above-mentioned field, e.g. OEMs and aviation suppliers in the field of plastics part production, focusing on high performance thermosets/ composites manufacturing.