

Press release

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Simulation implemented in reality

Injection molding simulated and experienced at DKT 2022

Simulation of injection molding processes yields highly interesting details and learnings. The close-to-reality results in pictures, diagrams and videos create trust in this technology quickly. The successful check that calculations meet the reality of the running process is of critical importance for the experts though. On DKT 2022 there is again the opportunity to see some simulation projects running live.



Figure 1 – The different parts can be found simulated as well as in reality on the DKT ("Butterfly", Mini-Frisbee, and vibration dampening part from left to right).

Simulation implemented in reality

Aachen, 27.06.2022 – On DKT in Nuremberg (June 27th-30th, 2022) SIGMA Engineering GmbH presents on booth 9-215 the new features of SIGMASOFT® Virtual Molding. Numerous projects and resulting parts are shown and discussed on the stand. Three of these projects

are presented in fully automated production parallelly during the exhibition. This allows visitors to check how precisely simulation meets reality and in addition to gain further insights into the different showcased technologies.

Examples include simulation of curing properties or creation of an entirely new 2 component molding process including mold design, if and when jetting occurs in thick-walled parts, or the analysis of cold- and hot-runners. In all cases, simulation is applied successfully and those topics were the focus of the different projects running live on DKT.

Wittmann Battenfeld shows in cooperation with ELMET the 2 component part „Butterfly“. This universal cellphone holder for the dashboard is based on a break-resistant PC from Covestro and is over-molded with self-bonding LSR from Momentive. Here both molds and their cold-resp. hot-runners were optimized with SIGMASOFT®. SIGMA presents simulation videos and calculation details displayed on a 2:1 model of the same mold.

In the case of the project „Mini-Frisbee“, presented at the Arburg booth in cooperation with ACH Solution and Momentive, the focus was beside mold design also on process optimization. The showcased quite thick-walled part, would have had a too long cycle-time with conventional LSR. Utilizing a new fast-curing LSR, the process understanding was improved and got swiftly optimized in combination with the new material.

Simulation of thick-walled rubber parts with potentially occurring jetting and location and severeness of knitting lines can contribute to identify critical areas soonest. LWB Steinkl shows the production of such an EPDM vibration dampening part on their booth.

The evaluation of cold runner systems is often done with a test mold, simulation can optimally support this development. MAPLAN shows an 8-cavity mold, even if this is not live at DKT, the different cold runner development systems will be presented there. Detailed insights into the heart of cold runners, will be shown at the SIGMA booth by using the simulation results.

The usage and application areas of injection molding simulation are as versatile as the different processes, materials and shapes. Simulation allows easy visualization of those areas. „These projects show, that simulation not only delivers ‚colorful pictures‘, but promises reliable



predictions and detailed process understanding“ Thomas Klein, CEO of SIGMA, summarizes the different projects.

Since 1998, SIGMA Engineering GmbH has been driving the development of the injection molding process with its simulation solution SIGMASOFT® Virtual Molding. This virtual injection molding machine enables the optimization and development of plastic components and molds as well as the mapping of the entire production process. The SIGMASOFT® Virtual Molding technology combines the parts 3D geometries with its tooling and temperature control system and integrates the parameters of the production process. This ensures a cost-efficient and resource-saving production as well as high-performance products - from the first shot.

SIGMASOFT® Virtual Molding integrates a multitude of process-specific models including 3D simulation technologies that have been developed and validated over decades and are continuously optimized. The SIGMA Solution Service and Development team supports its customers technical goals with application-specific solutions. The software company SIGMA offers application engineering, training, direct software sales and as a result, a software straight from its developers and designers to help give a solution service by engineers all over Europe.

SIGMA Engineering GmbH, headed by Managing Director Thomas Klein, has subsidiaries in the USA, Brazil, Singapore, China, India, Korea and Turkey. In addition, SIGMA supports its users worldwide in a variety of international companies and research institutions with its Virtual Molding technology.
Further information: [sigmasoft.de](https://www.sigmasoft.de)

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