

Press Release

Contact:

B.Sc. Vanessa Frekers
v.frekers@sigmasoft.de
+49-241-89495-0
Kackertstr. 11
D-52072 – Aachen

**LSR and rubber injection molding
More precise simulation with newly developed material models**

The precision of a simulation highly depends on the material data and the quality of the used material models. During DKT 2018 in Nuremberg, Germany, SIGMA introduces new material models which meet the requirements of more and more complex injection molding processes on simulation software like SIGMASOFT® Virtual Molding.

Aachen, May 15th, 2018 – The advantage of using simulation to design injection molds is beyond dispute. However, as injection molding processes are continuously under development and become more and more complex, SIGMASOFT® Virtual Molding has to be kept up-to-date as well to meet the needs of modern molders.

At this year's DKT in Nuremberg, Germany, SIGMA Engineering GmbH presents new material models for SIGMASOFT® Virtual Molding. With those, the software will be able to fulfill the additional requirements of the industry and to reliably simulate complex processes. Between July 2nd and 5th, 2018, visitors receive firsthand information on the new models at booth 419. Additionally, the influence of material data on the calculation of rubber and LSR parts is the focus of SIGMA CTO Timo Gebauer's presentation "Theoretical Background and Modelling of Rubber Curing in Process Simulation" during the specialist conference.

New material models ensure reliable predictions on the behavior of elastomer and silicones inside the injection molding machine are also possible in the future, thus supporting mold design. Especially one material model for an enhanced prediction of the curing behavior of LSR, which is currently under development, has the potential to enhance virtual injection

molding significantly. Based on well-known reaction kinetics, the model is able to express the curing reaction of multi-phase LSR-systems in a more generalized model.

SIGMA will also present its degradation model for rubber materials in more detail during DKT. A more precise simulation of rubber applications – and their possible degradation – with the help of SIGMASOFT® Virtual Molding contributes to improved part quality and reduced scrap with a minimum expenditure of time.

SIGMA (www.sigmasoft.de) is sister company to MAGMA (www.magmasoft.de), the world market leader in casting process simulation technology based in Aachen, Germany. Our SIGMASOFT® Virtual Molding technology optimizes the manufacturing process for injection molded plastic components. SIGMASOFT® Virtual Molding combines the 3D geometry of the parts and runners with the complete mold assembly and temperature control system and incorporates the actual production process to develop a turnkey injection mold with an optimized process.

At SIGMA and MAGMA, our goal is to help our customers achieve required part quality during the first trial. The two product lines – injection molded polymers and metal castings – share the same 3D simulation technologies focused on the simultaneous optimization of design and process. SIGMASOFT® Virtual Molding thus includes a variety of process-specific models and 3D simulation methods developed, validated and constantly improved for over 25 years. A process-driven simulation tool, SIGMASOFT® Virtual Molding provides a tremendous benefit to production facilities. Imagine your business when every mold you build produces required quality the first time, every time. That is our goal. This technology cannot be compared to any other simulation approach employed in plastics injection molding.

New product success requires a different communication between designs, materials, and processes that design simulation is not meant for. SIGMASOFT® Virtual Molding provides this communication. SIGMA support engineers, with 450 years of combined technical education and practical experience, can support your engineering goals with applications specific solutions. SIGMA offers direct sales, engineering, training, implementation, and support, by plastics engineers worldwide.

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