VIRTUAL MOLDING

UTILIZE THE FULL POTENTIAL WITH AUTONOMOUS OPTIMIZATION

NEWLY DEFINED

SIGMASOFT®
Virtual Molding

Plunge into the world of successful molders and learn about the secret to significantly reduce development cost and time in a few steps – long before the mold is built.

VIRTUAL MOLDING

AUTONOMOUS OPTIMIZATION REVOLUTIONIZES THE ROUTE TO THE BEST INJECTION MOLDING CONCEPT

With version 5.2 SIGMASOFT® Virtual Molding reaches a new dimension of injection molding simulation. Using predefined parameters SIGMASOFT® calculates the optimum configuration of molds, processes, times, temperatures, costs and many more influencing factors in the injection process – automatically. You define your goal and SIGMASOFT® Virtual Molding finds the optimum route – autonomously. This makes your course of action fast, reliable and cost-effective.

Autonomous Optimization is far more than a virtual DoE, on which it is based. In your virtual design of experiments you can now define additional degrees of freedom for your parameters – e.g. costs or time – and afterwards SIGMASOFT® Virtual Molding 5.2 calculates and evaluates innumerable variations in parallel to determine the injection molding process which best achieves the goal.
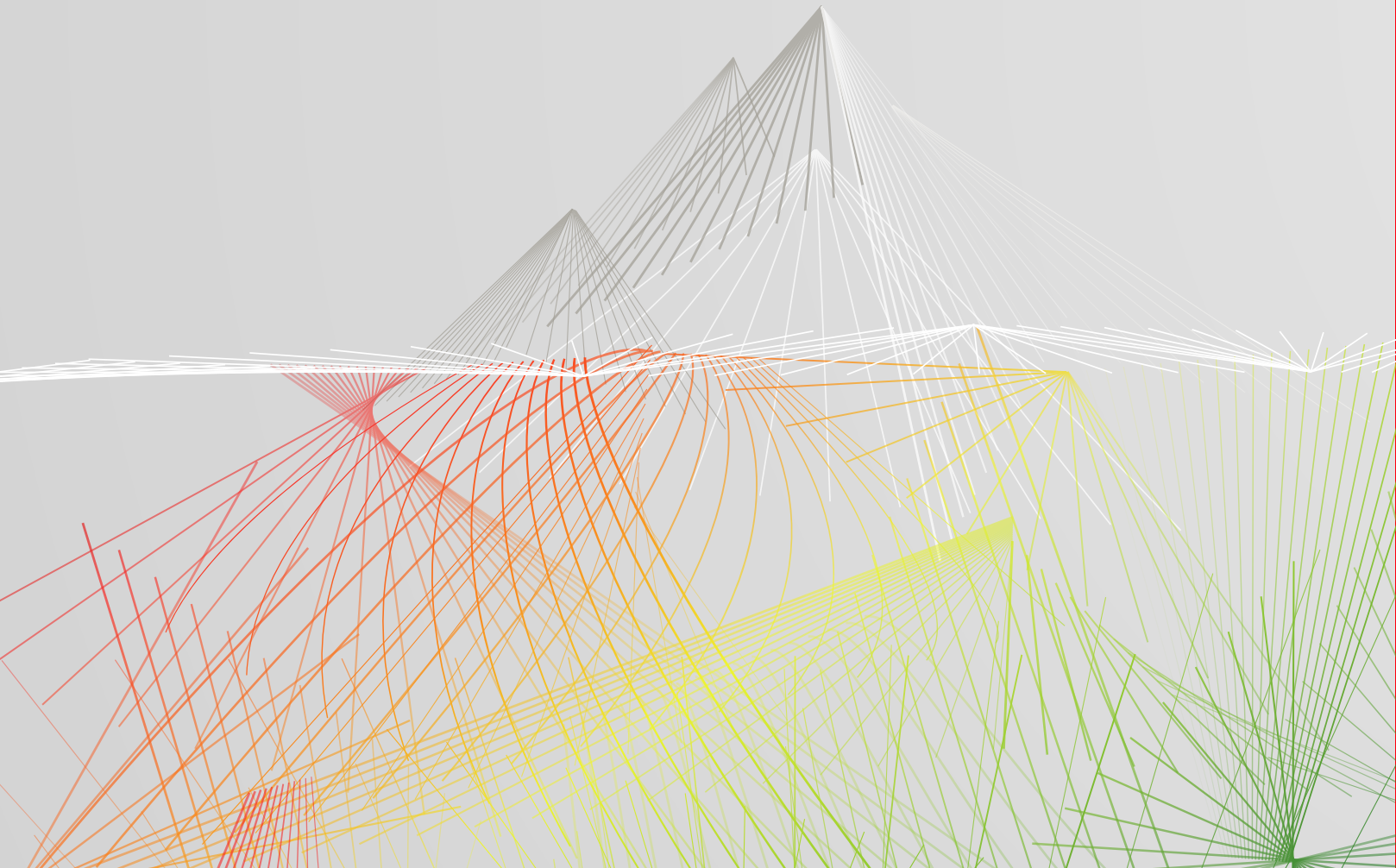
THE TYPICAL SCENARIO

At the beginning of a project it is known that a part will be mounted with different components. For this reason, all dimensions have to be met with tight tolerances. In a conventional approach one would design part and mold based on previous experiences and then the mold would be built. The last step is trial and error on the machine to try to reach the desired tolerances – with an unknown result. The process has an undetermined duration but still has a time limit as the test window on the machine is usually small. At best, parts with the desired quality are produced, but the process is not optimized for energy consumption nor cycle time.

Autonomous Optimization changes the scenario: during the design of part and mold all modifications can be tested on a virtual injection molding machine. Thanks to Autonomous Optimization this virtual injection molding machine can independently find a solution to an issue. For example, it is possible to demand minimum warpage of the part and the machine autonomously picks the correct process parameters.

THE FEEDBACK

Early adopters describe SIGMASOFT® Autonomous Optimization as "game changing" for injection molding. "This tool will change our way to produce parts. It will not only change how we set-up new processes, but also how we design our molds", explains a tester of the new technology.

CHOOSE THE OPTIMUM PROCESS
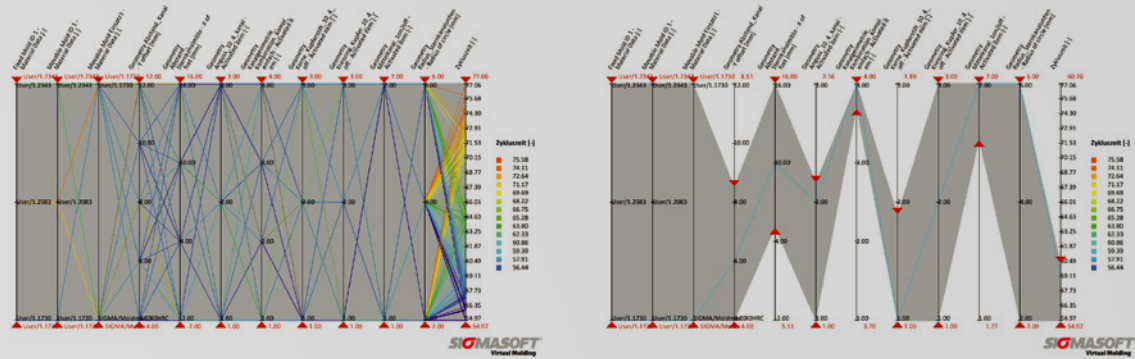
With the new SIGMASOFT® Autonomous Optimization the influence of materials and other process parameters on a certain problem is easily evaluated. For the layout of a tempering concept all possible combinations of mold material, geometries and process parameters and their influence on the resulting cycle time for the part are shown on the left. They can then be narrowed down further to find the ideal concept to meet the demanded specifications at the lowest cost (right).
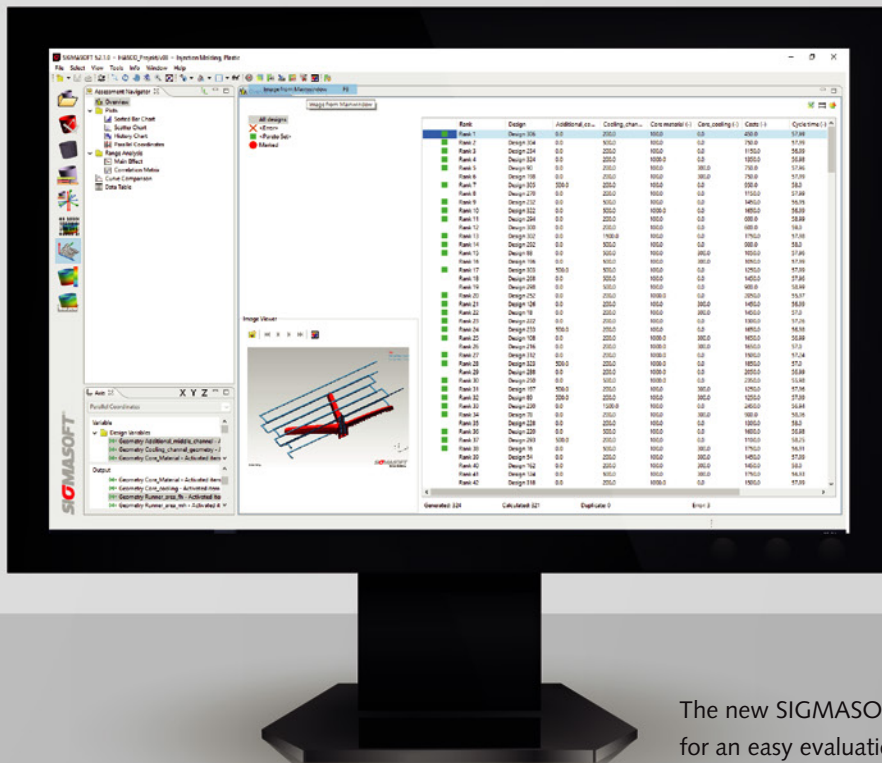

The new SIGMASOFT® Autonomous Optimization allows for an easy evaluation of the calculated designs. Using a ranking system the user can identify suitable parameter combinations with one look. The ability to analyze different diagrams allows for a more detailed evaluation.

SIGMASOFT®
Virtual Molding

THE SECRET OF SUCCESSFUL MOLDERS

The one who knows early, can act in time. Molders who know how the mold, material and temperatures influence each other before the start of production can virtually optimize his or her mold. In addition they can minimize energy consumption in production and find the most efficient way to produce high quality molded parts.

We at SIGMA call this integrative modeling of the injection molding production process VIRTUAL MOLDING. Therein we combine almost three decades of development and experience from worldwide projects. We have a permanent competitive advantage in the highly-competitive injection market for our customers. Through consequent virtualization of all process phases from design to serial production, you can optimize your injection molding production with the use of SIGMASOFT® Virtual Molding. You can also take advantage of our personal Solution Services to help you interpret your results.
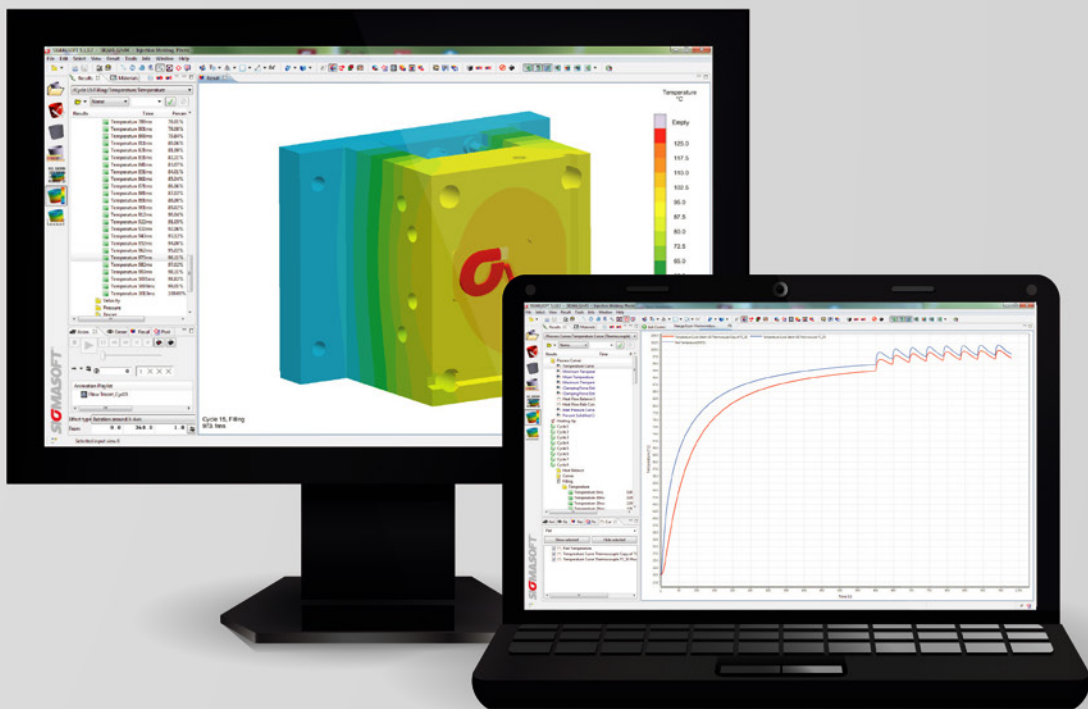
WHY AUTONOMOUS OPTIMIZATION IS THE ANSWER TO KEY QUESTIONS IN THE INJECTION MOLDING INDUSTRY.

Injection molding is evolving. Pressure to reduce cost and time leaves no room for mistakes. Injection molders need to design parts, molds and processes as efficient and fast as possible. Only then can profit margins be maintained. Conventional approaches – based on trial and error or experiences – are no longer sufficient to meet these requirements.

Version 5.2 of the SIGMASOFT® Virtual Molding software introduces Autonomous Optimization that provides a solution to this conflict. With this technology molders can demand a certain goal as they would from a colleague in production. SIGMASOFT® 5.2 will autonomously find the ideal injection molding process.

"This technology will change our way to produce parts. It will not only change how we set-up new processes, but also how we design our molds.

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