VIRTUAL MOLDING
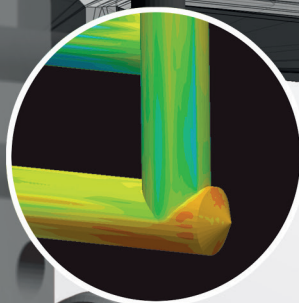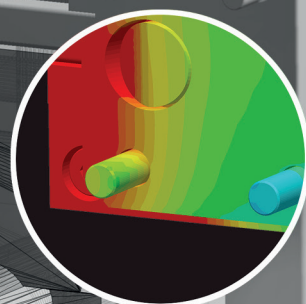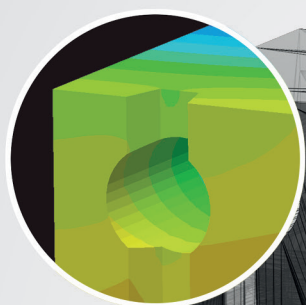
MIM/CIM

Optimize all parameters in the development process of metal and ceramic injection molded parts.

SIGMASOFT® VIRTUAL MOLDING MIM/CIM

Just imagine you could analyze all parameters of your injection molding process, before the first prototype of your mold is built. An entirely virtualized production process, on top of that enriched with special know-how for the processing of MIM and CIM feedstocks. The perfect solution to visualize, analyze and optimize your mold concept, the material flow, use of energy during production and a number of further parameters. A virtual injection machine which can make the difference in profitability for your MIM/CIM injection molding production. This imagination can become reality with SIGMASOFT® VIRTUAL MOLDING MIM/CIM.

Specially developed for the needs of the PIM Industry, SIGMASOFT® VIRTUAL MOLDING MIM/CIM is the only program which can reliably predict the flow behavior of highly filled materials, under consideration of the heat flow between feedstock and mold. The software predicts fluid dynamic phenomena such as jetting, fountain flow and plug flow just as dependably as areas with shear-induced segregation and their influence on part filling. Beside this coupling of particle concentration and viscosity, in the rheological calculation the over proportional increase in viscosity in the areas of low shear rates is also considered, as well as the heat transfer conductivity and the specific heat capacity for the thermodynamic calculation. The temperature sensitive processing of MIM/CIM feedstocks is thus exactly simulated.

With SIGMASOFT® VIRTUAL MOLDING MIM/CIM you optimize your Powder Injection Molding processes in every detail. And find the actually most efficient solution.

SIGMASOFT® MIM/CIM answers the following questions:

- **How should the tempering layout look like?**
- **What is the influence of the selected tempering concept on the cycle time?**
- **How can the energy consumption be reduced?**
- **Which mold concept guarantees the required dimensional tolerance and quality of the molded part?**
- **How does the insert material influence cycle time?**
- **Will segregation impact the mechanical properties and part quality?**

Analysis included:

**Our engineers are there for you
SOLUTION SERVICE for SIGMASOFT® Users**

Almost three decades of plastic and injection molding know-how are contained in each one of our SIGMASOFT® VIRTUAL MOLDING solutions. Each analysis result from our software delivers reliable advice for the design of the optimal mold and process. To use the complete potential from SIGMASOFT® VIRTUAL MOLDING, the user has the SOLUTION SERVICE at hand – a team of engineers and technicians with profound experience in processes, materials and modelling. Additionally our Solution Service offers you competent support when setting up a project, as well as in the evaluation and analysis of the different results.
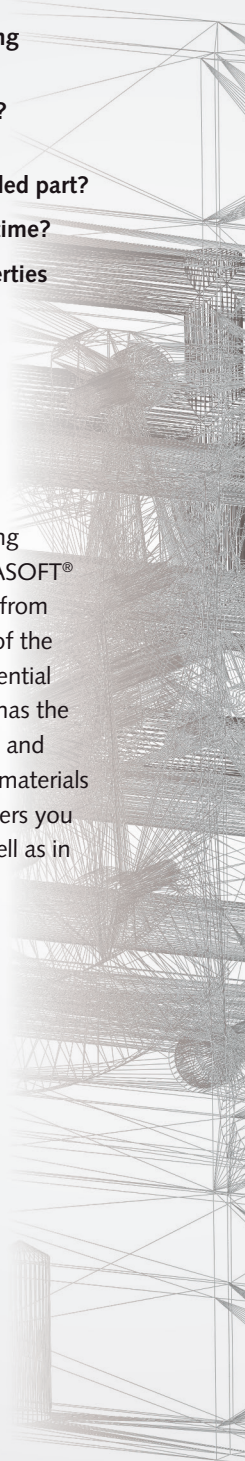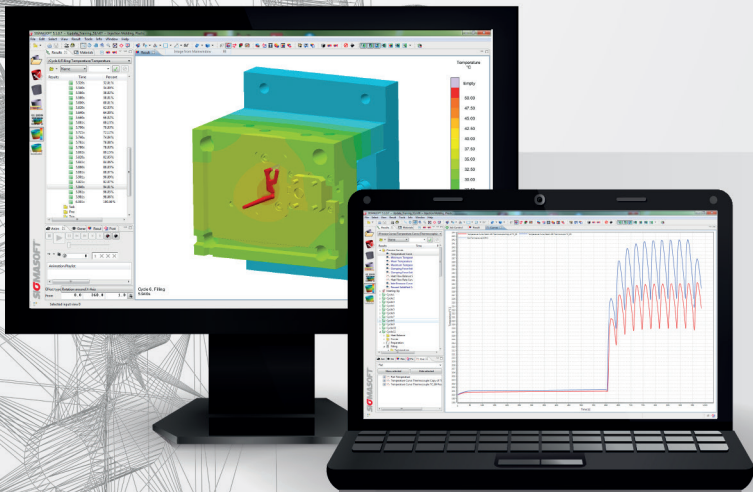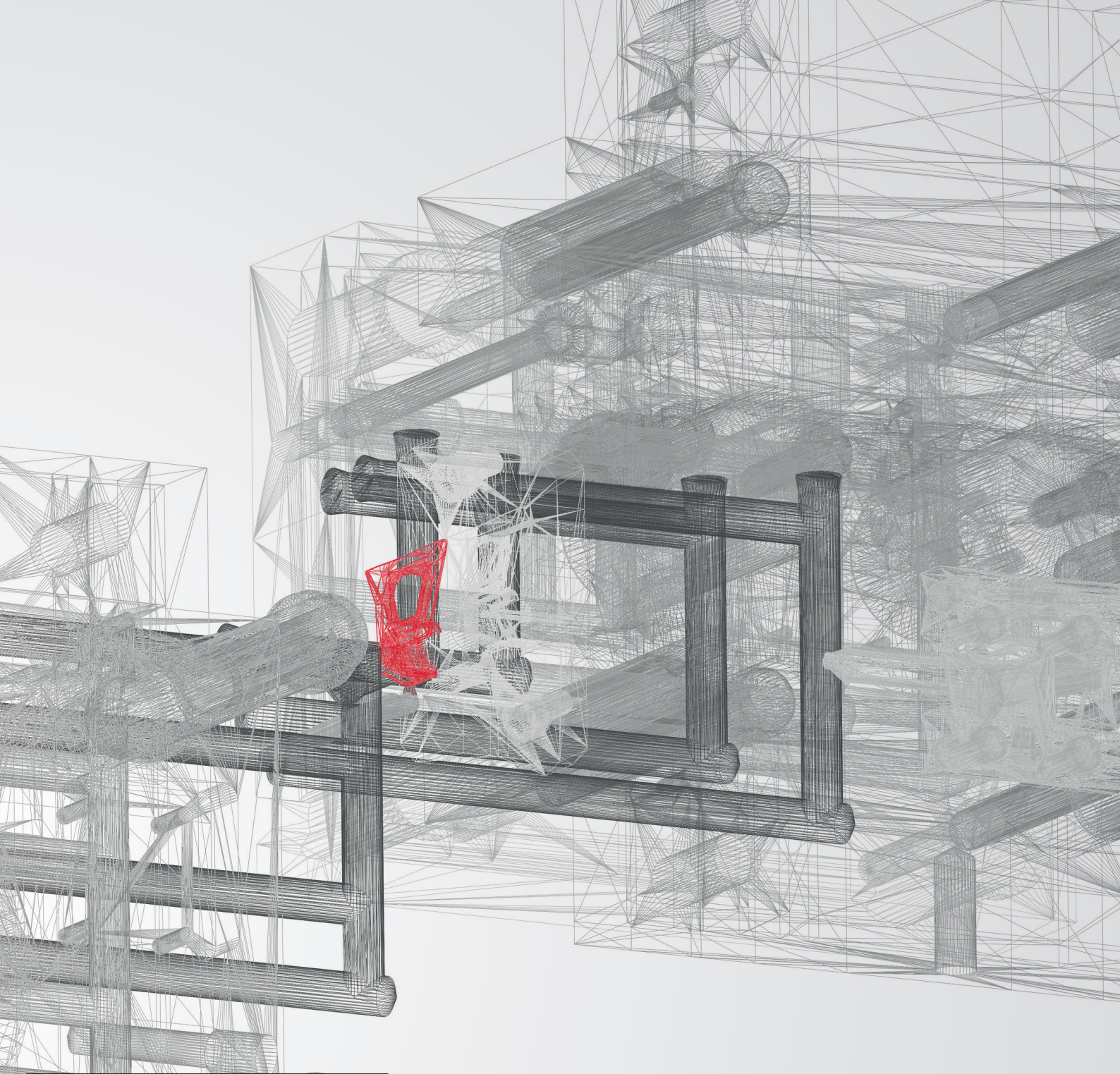
The intuitive, graphical user interface of SIGMASOFT® leads you step-by-step through all process levels. Automatic algorithms allow you to mesh a complete mold in a few minutes. Without need for mesh healing, triangle manipulation or removal of rounded or chamfered corners. SIGMASOFT® VIRTUAL MOLDING MIM/CIM makes the mold and process transparent during production.

SIGMASOFT® VIRTUAL MOLDING MIM/CIM
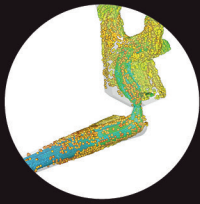
Perfections the mold filling …

… because the local particle concentration and its coupling with viscosity is equally considered as the thermal behavior of the mold and its influence on the part filling.
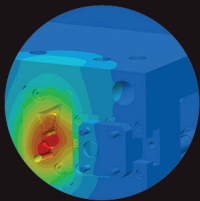
Improves the part quality …

… because with the software it is possible to precisely predict the particle segregation.

Optimizes processes …

… because all process times are taken into account over several cycles – even potential time-outs between cycles.

Takes care of the optimum thermal layout …

… by testing different tempering concepts comfortably and fast before the mold is built – even of innovative concepts for serial production.

Precisely predicts the part deformation…

… because to exactly predict the deformation of the green part it already considers all thermo-physical interactions and in-molded strain while the part is in the mold and furthermore tempering processes after ejection as well.

Avoids mechanical weak points in the part …

… because our software solution predicts the particle concentration just as reliably as the potential appearance of voids, weld lines and air traps.