# GEODICT
## The Digital Material Laboratory

GeoDict® Workflow for Foams

GENERATE AND SIMULATE FOAMS WITH GEODICT®

- Simulate large deformations of foams

- Generate models of your foams without meshing with a few clicks

- Determine the thermal conductivity of your foams

- Compare different materials virtually without the need of manufacturing prototypes

- Combine your material law with different pore shapes in a few hours on your PC instead of spending days in the lab...

MATH
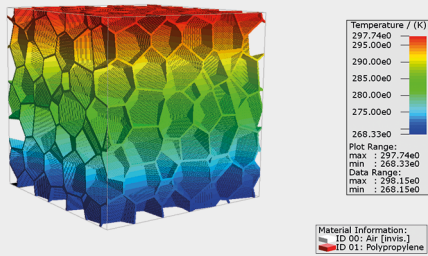**2 MARKET**
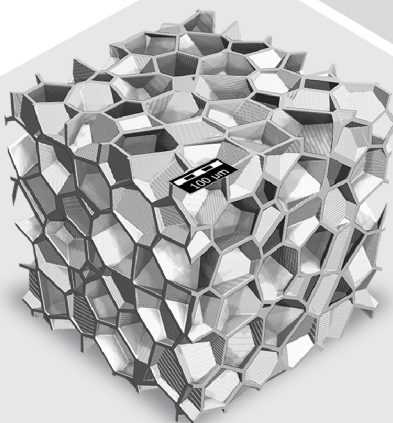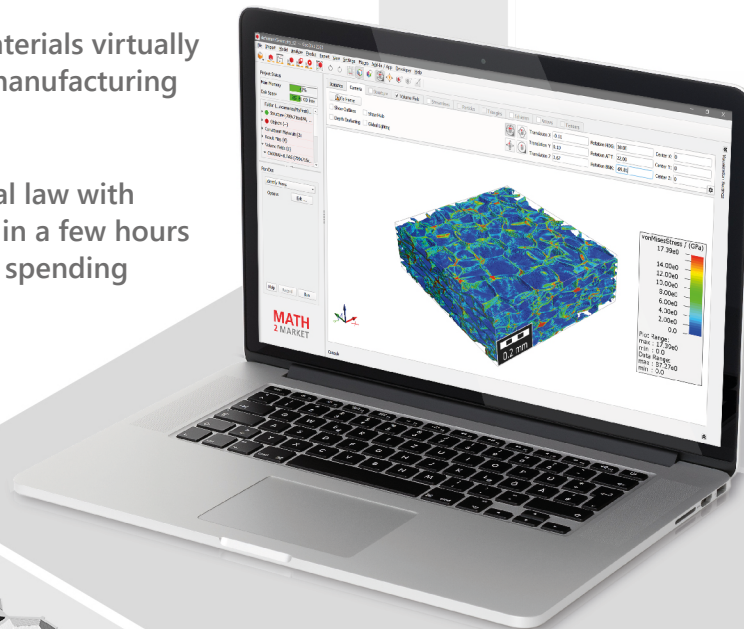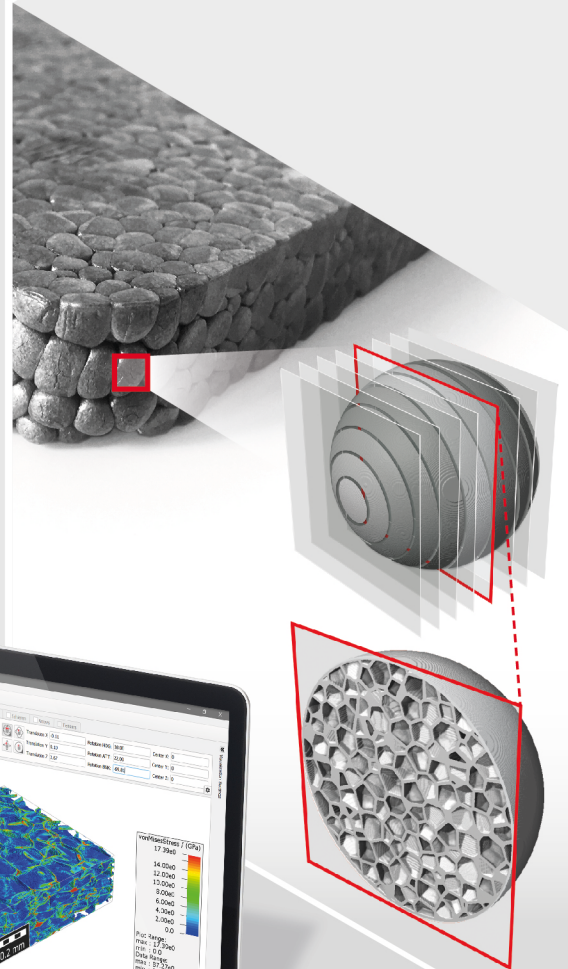
1 — Structure Generation
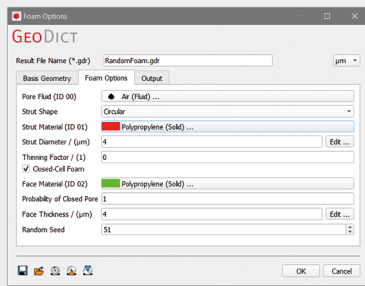
- Generate your own material model with FoamGeo – our generator for foam structures.
- Design your material model from scratch or use 3D image data from a µCT scan
- Vary your material model to do parameter studies

Result: Material model of your foam

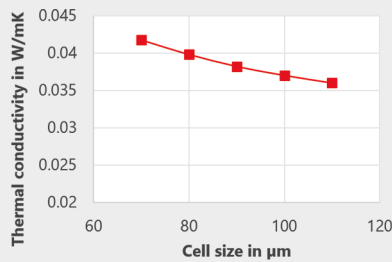## 2 — Properties Determination

- Predict the thermal conductivity of your foam in a few minutes with ConductoDict
- Determine acoustic properties with AcoustoDict
- Simulate flow through your foam
- Determine stiffnes tensor

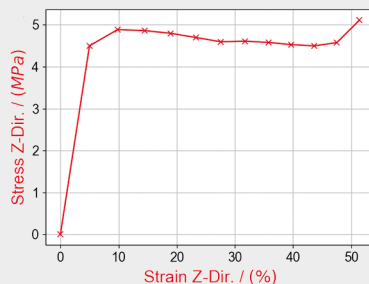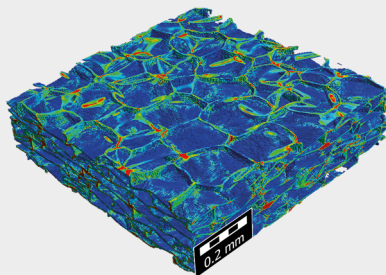**Result: Properties of your foam**

3 — Parameter Studies

Do parameter studies on foams by varying

- Cell size
- Wall thickness
- Solid volume fraction
- Mechanical properties of the base material

Result: Most promising designs of your foam

4 — Large Deformation

- Simulate large deformation of foams
- The buckling of cell walls can be observed
- Simulated stress-strain curves show typical behavior of foams
- Define a variable pore pressure inside the cells to observe the influence of pore pressure during compression
- Use plastic material laws for your bulk material which you can define by importing experimental data and use our reverse engineering function

Result: Mechanical behavior of your foam

MATH 2 MARKET