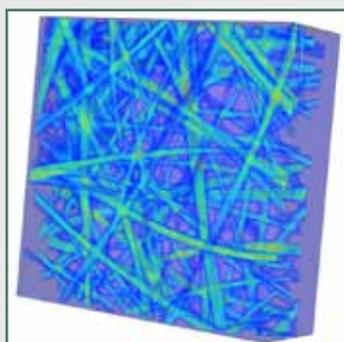
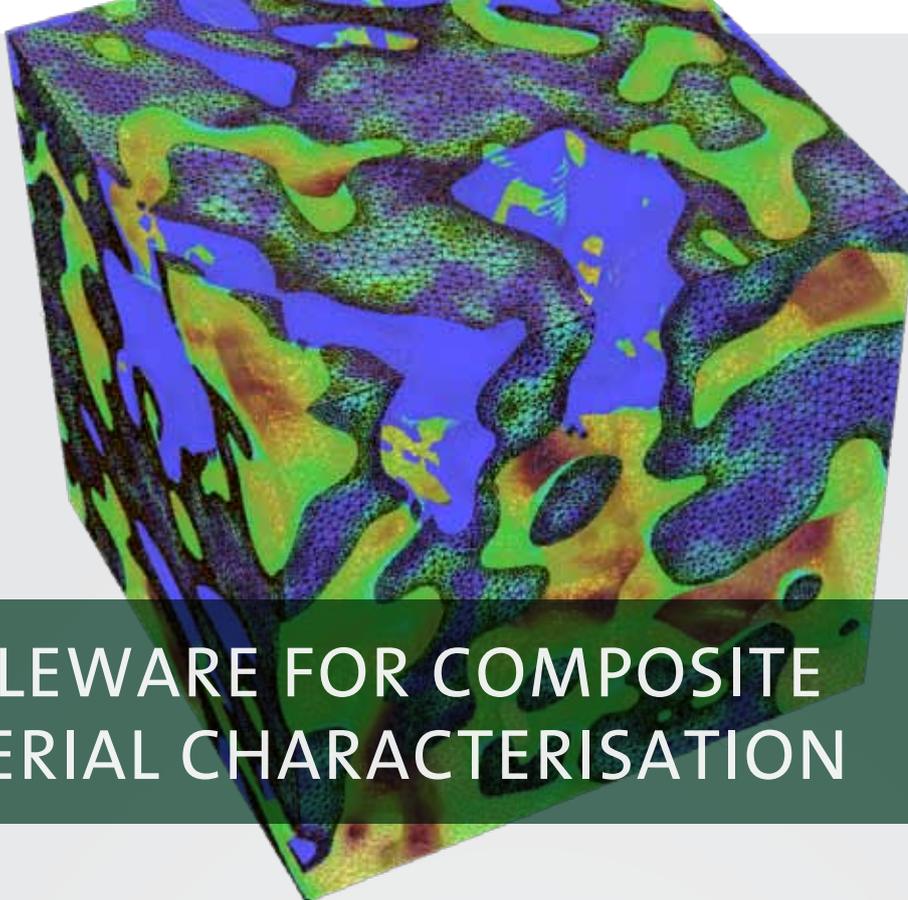
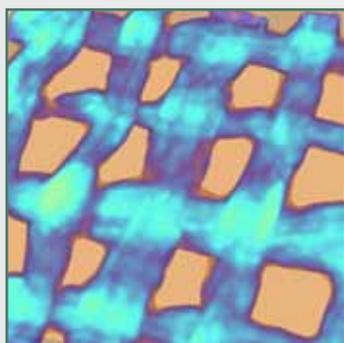


SIMPLEWARE FOR COMPOSITE MATERIAL CHARACTERISATION



Simpleware provides industry-leading software solutions and services for visualising, analysing and meshing the internal structures and features of composite material samples taken from scans (CT, micro-CT, FIB-SEM...). Visualise and quantify your data, export multi-part meshes for Finite Element Analysis (FEA) and Computational Fluid Dynamics (CFD), and calculate effective material properties using homogenisation techniques. With Simpleware, you can enjoy an intuitive interface, best-in-class material segmentation, superior surface reconstruction and volume meshing, comprehensive scripting options and dedicated support from an expert team.

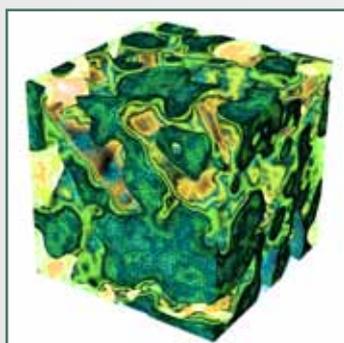


From Image to Model in Minutes

Simpleware software offers an intuitive interface for processing 3D image datasets from a comprehensive range of scan modalities. Find tools quickly and easily using the ribbon interface, and make use of a comprehensive set of easy-to-follow tutorials when learning the software. Full technical assistance on image processing and model generation is also available from our team of support engineers.

Automate Your Workflow

It is possible to customise Simpleware software to meet your specific workflow needs. A scripting API allows access to all options within the software and provides support for a range of languages, including Python, C# and Java. This functionality enables you to automate repeatable operations, build wizards and integrate your own plugins. Script creation is also possible through macro recording.



User Benefits

- » **Intuitive user interface:**
easy-to-learn and easy-to-use
- » **Customisable and extensible:**
comprehensive scripting facility
- » **Established solver compatibility:**
direct export for all leading FE/CFD solvers
- » **Fully supported:**
receive expert advice on your workflow

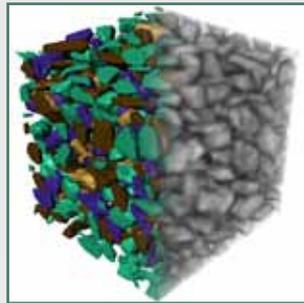
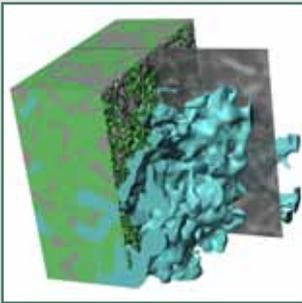
Software Highlights

- » **Import 3D image data of any scale:**
CT, micro-CT, nano-CT, FIB-SEM...
- » **Advanced 3D image processing tools:**
visualisation, segmentation, measurement
- » **Calculate effective material properties:**
range of homogenisation modules available
- » **Conforming multi-part meshing:**
automated, robust, fast, simulation-ready

PROCESS 3D IMAGE DATA

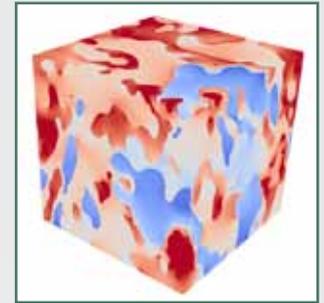
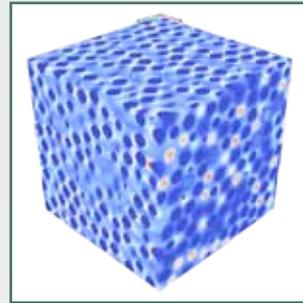
Simpleware software provides a wide range of tools and filters for processing composite scan data. Render 2D image stacks in 3D directly after import, and explore your data with colour and opacity mapping and animation features. Semi-automated segmentation tools are available for identifying solid, liquid and gaseous regions, and watershed tools provided for separating and grouping particles.

- » Generate animations
- » Easily segment and analyse different particles with watershed-based tools
- » Use a wide range of image transforms
- » Reduce noise and smooth images



Simpleware provides fully integrated homogenisation modules (+SOLID, +FLOW and +LAPLACE) for calculating the effective material properties of scanned samples. Use +SOLID to calculate elastostatic properties, +FLOW to calculate absolute permeability, and +LAPLACE to calculate effective electrical conductivity/permittivity, thermal conductivity and molecular diffusivity.

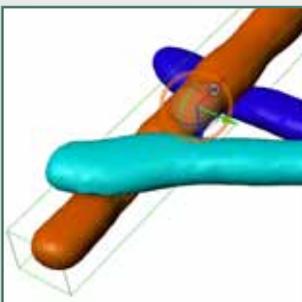
- » Choose from full FE-based homogenisation or quick calculation of analytical bounds (+SOLID and +LAPLACE only)
- » Select from a range of predefined boundary conditions to reduce boundary effects
- » Visualise fields obtained from FE simulations
- » Assess the symmetry level of analysed samples



QUANTIFY YOUR DATA

Composite samples can be rapidly quantified using intuitive measurement tools and a choice of built-in and user-defined statistics templates. Obtain pore and fracture dimensions, fibre orientations, volume fractions and other information from your scan data.

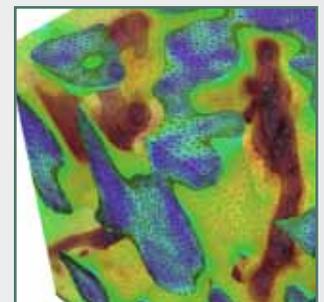
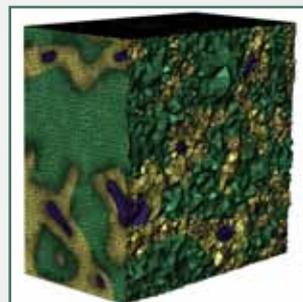
- » Quick measurements available
- » Generate centrelines
- » Compute statistics within user-defined regions of interest
- » Interface with MATLAB®



EXPORT FE AND CFD MESHES

Simpleware software utilises proprietary image-based meshing algorithms that enable the generation of multi-part FE and CFD models. Generate models with conforming interfaces and shared nodes ready for a wide range of simulation applications, and export directly to all leading CAE solvers.

- » Define FE contacts, node sets and shells
- » Define CFD boundary conditions
- » Optimise mesh quality for specific metrics
- » Inspect mesh quality before export



Visit our website for a fully functional 30-day free trial. Trial versions are fully supported by our technical team.

Simpleware develops industry-leading image processing software solutions and services for 3D image data visualisation, analysis and model generation.



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www.simpleware.com