Import Formats

DICOM (version 3.0 and 2D stacks) including:

– 4D (time-resolved) DICOM with time step selection

– Option to store DICOM tags with imported data

DICOM encapsulated STL surface models

ACR-NEMA (versions 1 and

- Particle ellipsoid diameter (Mean, SD, Min, Max)
- Particle flatness
- Particle elongation
- Particle shape factor
- Particle sphericity

Plot statistics, export as *.png or *.csv:

- Volume histogram
- Area histogram
- Flatness histogram
- Elongation histogram
- Shape factor histogram
- Sphericity histogram

Particle visualization:

- Contact count
- Voxel count
- Surface area
- Boundary contact area
- Label contact area
- Volume
- Max greyscale
- Mean greyscale
- Major length
- Flatness
- Elongation
- Shape factor
- Sphericity
- Orientation angle to x/y/z axis
- Orientation to mean
- Export as *.csv or *.txt files

Map to mesh:

- Export (or assign using Simpleware Elite or Apex) particle volume fraction information per mesh cell

Pore Analysis

Allows pores (either open or closed) to be analyzed from a mask or multi-label mask

Two types of pore analysis available:

- Open: for connected pore networks
- Closed: for pores that are separated from each other

Statistics for analyzed region or region of interest:

- Total pores count
- Total throat count volume
- Volume fraction
- Internal pore volume (Mean, SD, Min, Max)
- Internal pore surface area (Mean, SD, Min, Max)
- Pore equivalent volume sphere diameter (Mean, SD, Min, Max)
- Pore flatness (Mean, SD, Min, Max)
- Pore elongation (Mean, SD, Min, Max)
- Pore shape factor (Mean, SD, Min, Max)
- Pore sphericity (Mean, SD, Min, Max)
- Pore coordination number (Mean, SD, Min, Max)
- Throat contact count
- Throat contact area
- Throat radius (Mean, SD, Min, Max)
- Throat flatness (Mean, SD, Min, Max)
- Throat elongation (Mean, SD, Min, Max)
- Throat eccentricity (Mean, SD, Min, Max)
- Throat shape factor (Mean, SD, Min, Max)

Plot statistics, export as *.png or *.csv:

- Volume histogram
- Area histogram
- Flatness histogram
- Elongation histogram
- Shape factor histogram
- Sphericity histogram

Particle visualization:

- Contact count
- Voxel count
- Surface area
- Boundary contact area
- Label contact area
- Volume
- Max greyscale
- Mean greyscale
- Major length
- Flatness
- Elongation
- Shape factor
- Sphericity
- Orientation angle to x/y/z axis
- Orientation to mean
- Export as *.csv or *.txt files

Map to mesh:

- Export (or assign using Simpleware Elite or Apex) pore volume fraction information per mesh cell

Surface Mesh Generation

Topology and volume preserving smoothing

Triangle smoothing

Decimation

Multipart surface creation

Surface element quality control (for volume meshing in third party software)

So-called ‘sub-pixel accuracy’ through the use of partial volume effects data

Surface Mesh Quality Inspection Tool

Inspect surface triangles or clusters of triangles

Option to show mesh errors (e.g. surface holes, surface intersections) and warnings

Show distorted elements above a user-defined threshold

Display quality metric histograms

Zoom into the pathological element to inspect it more closely

Measurement Tools

Create and save points, distances and angles in 2D/3D

Visualization options to display all at once or selected

Snap to 3D surface option

Profile line

Histogram

Export as comma-separated values

Centerline creation toolkit:

– Centerline creation (general)

– Centerline creation for fibers

– Junction editing

2D contour measurements:

– Creation mode

– Area

– Total perimeter

– In-circle