



## 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
- 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

## 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

## 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-center





