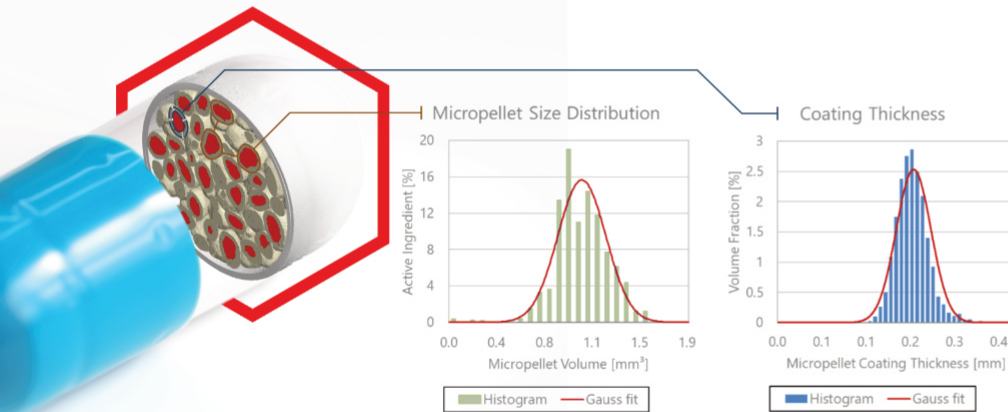


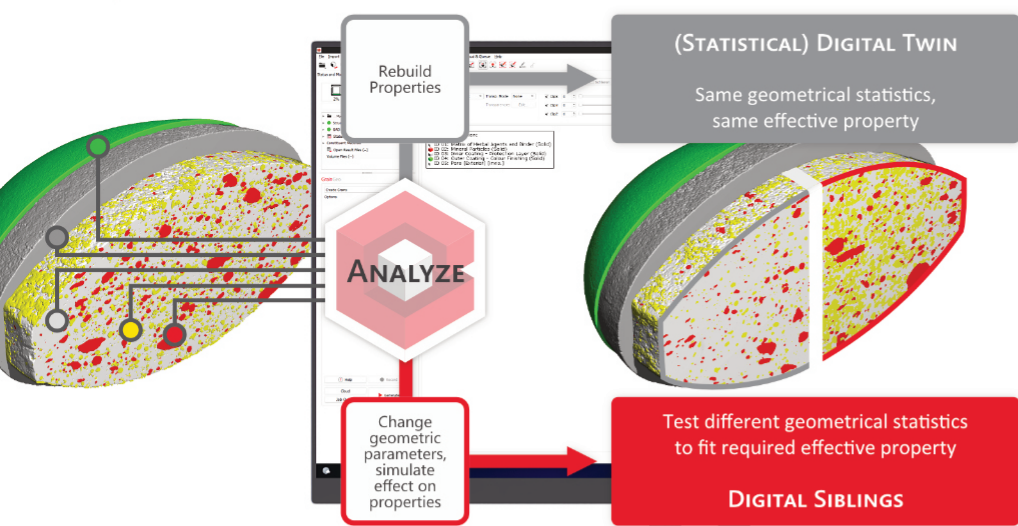
DIGITALIZATION

- Segment and convert μ CT scans into 3D digital structures of powders, tablets, pellets, capsules... with image filters and AI tools
- These digital structures are the basis for **analysis and multiphysics simulations**.



NON-DESTRUCTIVE ANALYSIS & QUALITY CONTROL

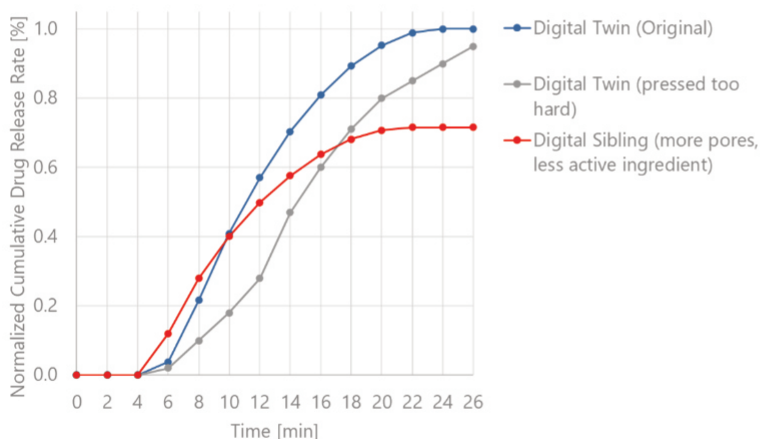
- Extract **grain & pore size distribution, packing density, porosity, tortuosity, and coating thickness** directly from 3D scans.
- Perform **digital testing of stability and dissolution** without destroying samples.
- Enable **simulation-based analytics** for reliable quality control.



DIGITAL TWINS & DIGITAL SIBLINGS

- Build **digital twins** of powders, granules, tables, capsules, and more in full 3D detail from parameters extracted from digital analysis.
- Generate **digital siblings** by systematically varying particle morphology, excipient ratios, compaction force, or coatings uniformity.
- Conduct **sensitivity analysis and virtual scale-up** prior to manufacturing.

Results from Dissolution Simulation - Cumulative Drug Release Rate



PROPERTY PREDICTION

- Run **multiphysics simulations** to predict packing, compaction, mechanical robustness, friability, permeability, release, and dissolution kinetics.
- Directly link microstructure to critical quality attributes.
- Support QbD strategies, regulatory submissions, and high reproducible, **accelerated formulation development** with physic-based predictions.