Numerical simulation of internal nozzle flow and primary atomisation in injection systems

Mathematical modelling of liquid drop evaporation phenomena
**X-ray micro-tomography** is a non-intrusive and non-destructive full volume imaging technique that allows **3D characterization of materials’ microstructure** with high spatial resolution (voxel size nearly equal 1 micrometer).

**Measurement principle**

The object, positioned between the X-ray source and the X-ray detector, is rotated in very small steps around its vertical axis. For each step a 2D X-ray image is acquired by the detector. The X-ray images are processed and tomographic volume reconstructions are performed using standard filtered back-projection based on Feldkamp algorithm.

**X-ray computed microtomography for drop shape analysis and contact angle measurement**

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**Defects (colored in transparency) in Carbon Fiber Composites**

**X-ray microCT (Bergamo)**

**Volume reconstruction and analysis with CAD model comparisons (metrology): discrepancy of tolerances in color on arbitrary slice**

CFD and FEM simulations on real geometries producing more robust prediction data (images of diesel injector).

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