

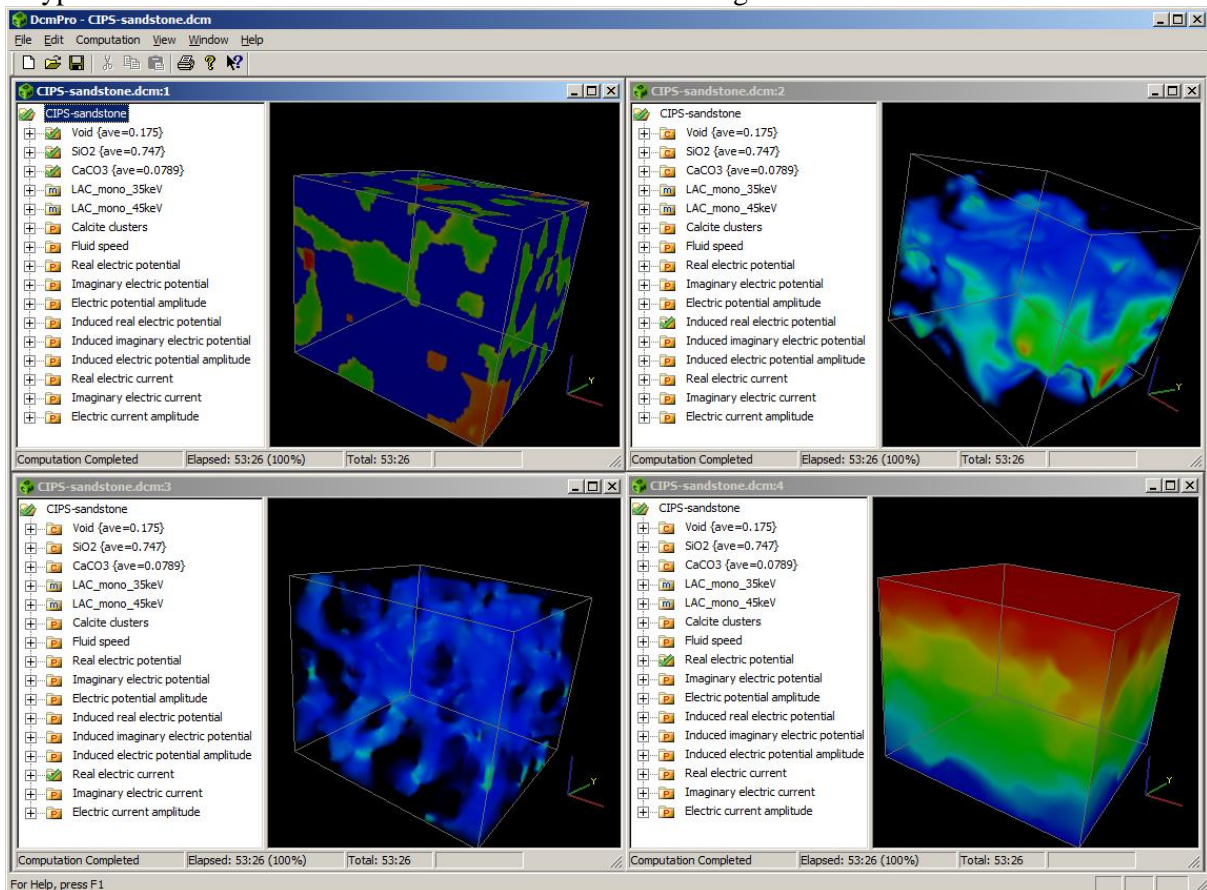
## DCM software release information

The [DCM software](#) is a *Microsoft Windows*<sup>TM</sup>-based application for 3D microstructure characterization, modelling and visualization. A tutorial introduction is available at <http://dx.doi.org/10.1063/1.4937523>. It includes the following functionalities:

- Generate digital 3D representation of material compositional phases in a sample using the data-constrained modelling (DCM) methodology and X-ray CT data, even for the cases that there are partial volumes of multiple compositions in the same image voxel;
- Visual presentation of 3D volumetric data. The visualization is compatible with various display devices, including stereo 3D monitors;
- Exporting 3D data in various formats, including the web-friendly XHTML/X3D format for interactive 3D online visualization;
- Functionality of the software can be extended by adding plug-in modules to perform virtually unlimited 3D modelling. A set of C++ programming API is included for user convenience.

The [DcmLite](#) software can be downloaded for evaluation. Other variations of the *DCM software* include: *DcmEdu*, and *DcmPro*. *DcmLite* is intended for demonstration of concept and is feature-limited. It is a 32-bit desktop application and free for non-commercial purposes. The fully featured versions *DcmEdu* and *DcmPro* are 64-bit applications which can handle large data sets and can use *Microsoft* CPU clusters to speed-up data processing tasks. The fully featured versions require an account registration (by clicking the registration link when the DCM software is started) or a hardware USB key by CSIRO. Please feel free to contact us if you would be interested in acquiring a DCM software user licence, R&D collaboration, commercial exploitation, or knowing more about DCM. The DCM website is at <http://research.csiro.au/dcm>. The CSIRO DCM development team can be reached by email at [dcm@csiro.au](mailto:dcm@csiro.au). General enquiries about CSIRO should be directed to [enquiries@csiro.au](mailto:enquiries@csiro.au).

A typical DCM software user interface looks like the following:



General information about DCM is available on the DCM homepage at <http://research.csiro.au/dcm>. The latest release of the *DCM software* binary executables is available at <https://data.csiro.au/dap/landingpage?pid=csiro:9448>. Selections of DCM plug-ins and datasets are published on the CSIRO Data-Access-Portal at <https://data.csiro.au/dap/search?q=dcm> or <https://data.csiro.au>.

The version 2.6.1 build 2648 release include the following files

- [DcmLite-setup-2.6.1.2648.exe](#): The installation file for the DcmLite version.
- [DcmEdu-setup-2.6.1.2648.exe](#): The installation file for the DcmEdu version.
- [DcmPro-setup-2.6.1.2648.exe](#): The installation file for the DcmPro version.

The release also includes a number of data files in the DEMO directory. It contains a number of DCM files which can be opened with any version of the latest DCM software release. It also contains a number of data directories. These are for the purpose of assisting new users to get started. They include:

- [CIPS-sandstone.dcm](#) demonstrates basic DCM features with a CIPS sandstone sample. The microscopic distributions of pores, quartz and calcite are derived from the CT data in the *Sandstone-CT-35keV* and *Sandstone-CT-45keV* data directories. Some plug-in features may require additional plug-ins which are available at <https://data.csiro.au>, search for keyword “dcm”.
- [Carbonate.dcm](#) demonstrates basic DCM features with a carbonate sample. The microscopic distributions of pores, calcite and dolomite are derived from the CT data in the *Carbonate-CT-28keV* and *Carbonate-CT-38keV* data directories. Some plug-in features may require additional plug-ins which are available at <https://data.csiro.au>, search for keyword “dcm”.
- [Mixture.dcm](#) and the associated sample source code constitute a demonstration of the plug-in feature for simulation of a hypothetical oil and water mixture.
- [MyPlugin.dcm](#) and the associated source code demonstrate the basic structure of a DCM plug-in program
- [WallPaper.dcm](#) and the associated source code are additional demonstrations the plug-in feature.
- [Sandstone-CT-35keV](#): A directory containing the CIPS sandstone X-ray CT slices at beam energy 35keV in TIF format. The value of an image pixel is its CT-reconstructed imaginary refractive index  $\beta$ . Each voxel represents a physical volume of  $5.92 \times 5.92 \times 5.92 \mu\text{m}^3$ .
- [Sandstone-CT-45keV](#): A directory containing the CIPS sandstone X-ray CT slices at beam energy 45keV in TIF format. The value of an image pixels represents its CT-reconstructed imaginary refractive index  $\beta$ . Each voxel represents a physical volume of  $5.92 \times 5.92 \times 5.92 \mu\text{m}^3$ .
- [Carbonate-CT-28keV](#): A directory containing the carbonate X-ray CT slices at beam energy 28keV in TIF format. The value of an image pixel is its CT-reconstructed imaginary refractive index  $\beta$ . Each voxel represents a physical volume of  $1.85 \times 1.85 \times 1.85 \mu\text{m}^3$ .
- [Carbonate-CT-38keV](#): A directory containing the carbonate X-ray CT slices at beam energy 38keV in TIF format. The value of an image pixel is its CT-reconstructed imaginary refractive index  $\beta$ . Each voxel represents a physical volume of  $1.85 \times 1.85 \times 1.85 \mu\text{m}^3$ .