

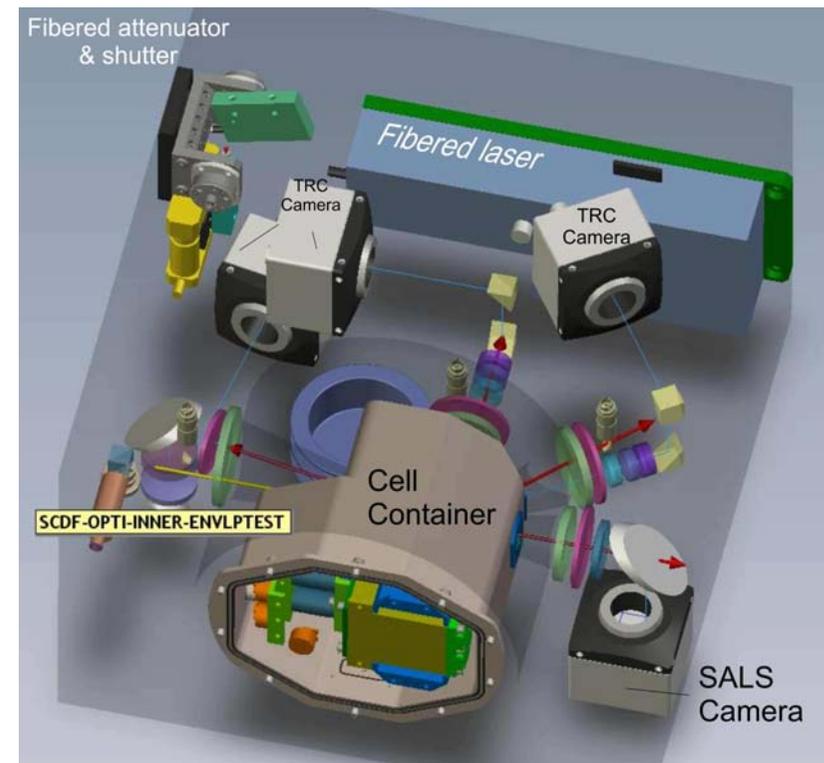
Colloids in space: status of ESA instrument development

- Phase A2 for SCDF finished in November 2010. Recommendation: consider a “flexible” facility. No reason to be bound to the European Drawer Rack;
- ESA proposes to launch a phase A/B to study the accommodation of a modular instrument, the Colloid Light Scattering (COLIS) to be hosted in the Microgravity Science Glovebox;
- ESA Programme Board endorsed (unanimously) the decision in May 2011.

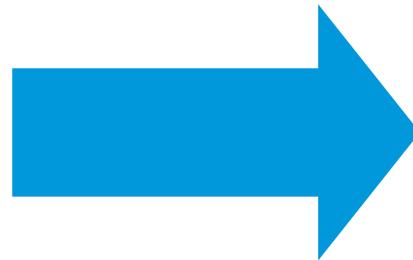
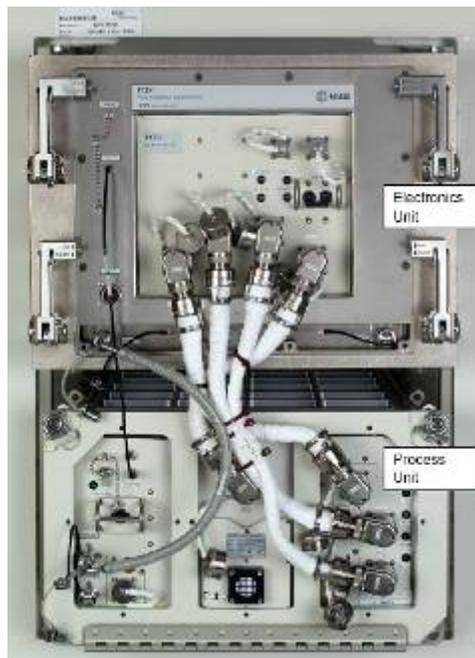
Colloids in space: basic requirements

Overall requirements unchanged (from ESR)

Type of cells	Exchangeable in orbit. Three types of cells: A requires stirring B requires stirring and the possibility to have externally controllable electric field gradients in the cell volume C requires stirring and the possibility to mix two fluids of equal volumes at the beginning of the experiment
Temperature control	T adjustable for cell A. Ambient for cells B, C. Accuracy +/- 0.1 °C, stability < 0.01 °C long term
Depolarised DLS	At angles 170°, 90°, 35-60 (nice top have).
Small angle LS	Homodyne, camera based. 0.1° to 10°. Frame rate > 10 Hz
Time Resolved Correlation	Same DLS angles. Frame rate up to 1000 Hz
Image processing	Basic on-board TRC processing



–From SCDF to COLIS: modular, with less mass and volume constraints.



Additional information:

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