

MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM (A2)
Microgravity Sciences onboard the International Space Station and Beyond (6)

Author: Dr. Vladimir Pletser
European Space Agency (ESA), The Netherlands, vladimir.pletser@esa.int

FIRST INVESTIGATIONS WITH THE PROTEIN CRYSTALLISATION DIAGNOSTICS FACILITY
ON BOARD THE INTERNATIONAL SPACE STATION

Abstract

The Protein Crystallization Diagnostics Facility (PCDF) is an instrument developed by Astrium under an ESA contract to observe and study with advanced diagnostics nucleation and crystallisation processes of molecules from solutions in long duration microgravity on board the International Space Station. The first experiment PROTEIN to fly with PCDF aims at unravelling physical processes and relating the formation of defects in crystals to their growth conditions. This PCDF experiment is scheduled to fly on the ISS, integrated in the European Drawer Rack and will be followed and teleoperated by the supporting science teams from User Support Operation Centers on ground. Future experiments will utilize the existing infrastructure to support advanced light scattering capabilities to enable investigations of various solutions including proteins, zeolites and colloids. The paper will recall the PCDF design. The aim of the PROTEIN experiment will be summarized and first results will be presented. The future evolution of PCDF will be addressed.