

MICROGRAVITY SCIENCES AND PROCESSES (A2)
Facilities and Operations of Microgravity Experiments (5)

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ELECTROSTATIC LEVITATION FURNACE FOR ISS/KIBO

Abstract

JAXA is now going to start the development of new ISS/KIBO material processing equipment, called Electrostatic Levitation Furnace(ELF). ELF is the levitation furnace using electrostatic force, and samples are heated by semiconductor laser from multiple directions to keep the isothermal temperature profile in the sample, and maximum temperature would be up to 3000 degree Celcius, depending on the sample materials and diameter. The merit of using electrostatic force is that we can process the non-metalic samples, such as oxidesand glasses. ELF would be installed into Multi-purpose Small Payload Rack(MSPR) which has been launched by HTV2 this January. ELF is one of the equipment which uses MSPR Workvolume, so the volume of ELF is limited to fit into the Workvolume, should be approx. 600mm depth , 900mm width and 700mm height. In this presentation, we will present the latest status(such as development schedule and mission target of initial phase) and specifications of ELF.