

**MPB TECHNOLOGIES INC.**

1725 North Service Road  
Dorval, Québec  
H9P 1J1

**Contact:** Dr. A.K. Ghosh, Director, Space & Photonics Division, 151 Hymus Blvd.,  
Pointe Claire, Québec, H9R 1E9  
**Tel:** (514) 694-8751 **Fax:** (514) 695-7492

**Products/Services:** Federally incorporated in 1976, MPB Technologies Inc. specializes in high technology systems and products, and in contract research and development. The company is divided into six technologically oriented divisions: Communications; Electromagnetics; Electronic Systems; Fusion Technology; Laser & Electro-Optics; and Space and Photonics. The following are some of the space-related activities undertaken by MPB Technologies Inc.

**Flight Qualified Payloads for Space**

**Configurable Hardware for Multidisciplinary Projects in Space (CHAMPS):** Get-away special controlled environmental generic chamber for multidisciplinary microgravity projects, CHAMPS enables investigators to specify their own experimental configuration while providing them with generic peripherals such as support structure, power supply, thermal insulation, control and data acquisition electronics, ground support equipment and user-friendly software. The first experiment to be flown will involve the study of Liquid Phase Electro-Epitaxial (LPEE) crystal growth of GaAs under microgravity conditions.

**Laser Materials Processing System for Microgravity Projects (LAMPS):** Designed for KC-135 flights, LAMPS is a research facility to conduct laser material processing (welding, drilling etc.) under microgravity conditions. It consists of a 100 Watt CO<sub>2</sub> laser, a material processing station with computer controls and data acquisition systems, and a real-time interferometric holography system for diagnostics.

**Aquatic Research Facility (ARF):** Designed to study the effects of microgravity on the behaviour of aquatic invertebrates and microorganisms, it is a mid-deck experiment for the Space Shuttle.

**Telerobotics:** MPB Technologies is currently involved in developing three advanced telerobotic prototypes: a macro robot, a micro robot and a research robot. Almost all aspects of robotic technology are involved in these systems, including materials and sensors (e.g. force, vision, tactile).

**Intersatellite Communication Link Program (ISL):** A test bed has been developed to study optical technologies for intersatellite communication. The program has included the use of laser diodes and heterodyne receivers to simulate data transmission rates up to 1 Gbit/s.