Remotely Controlled Mixers for Light Microscopy Module (LMM) Colloid Samples

*Automation enables samples to be processed quickly and efficiently*

Developed by NASA Glenn Research Center, the LMM aboard the International Space Station (ISS) is enabling multiple biomedical science experiments. Techshot, Inc., has developed a series of colloid specialty cell systems (C-SPECS) for use in the colloid science experiment module on the LMM. These low-volume mixing devices will enable uniform particle density and remotely controlled repetition of LMM colloid experiments. By automating the experiment process, C-SPECS allow colloid samples to be processed more quickly. In addition, C-SPECS will minimize the time the crew will need to spend on colloid experiments as well as eliminate the need for multiple and costly colloid samples, which are expended after a single examination.

This high-throughput capability will lead to more efficient and productive use of the LMM. As commercial launch vehicles begin routine visits to the ISS, C-SPECS could become a significant means to process larger quantities of high-value materials for commercial customers.

### Applications

**NASA and Commercial**

- On-orbit analysis of colloid samples
- On-orbit analysis of macromolecular samples

### Phase II Objectives

- Finalize design requirements
- Design and fabricate flight-like hardware for C-SPECS
- Conduct C-SPECS performance tests

### Benefits

- Automates colloid biomedical experiments aboard the ISS
- Allows colloid samples to be processed more quickly
- Offers potential for better understanding of pharmacological processes

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