Nikon System Selected for ISS Mission to Advance Microgravity Life Science Research Project

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Nikon Corporation has announced that its live cell observation system has been selected for use aboard the International Space Station (ISS) as part of a new life sciences research initiative.

The system, developed in collaboration with Nikon Instruments Inc. (NII), will support research into the effects of microgravity on biological systems, with applications in drug discovery and disease research. The project is backed by the Center for the Advancement of Science in Space (CASIS), which manages the ISS National Laboratory.

The technology is scheduled to launch aboard NASA's Northrop Grumman Commercial Resupply Services (CRS) 24 mission from Cape Canaveral in April 2026, where it will undergo initial operational verification.

Advancing research in microgravity

The system will form part of the Nikon Experimentation Microscope in Orbit (NEMO), enabling scientists to culture, maintain, and observe live cells and tissues in space.

By combining Nikon's imaging technology with a cell culture incubator and automated media system developed by BioServe Space Technologies, the platform will allow for high-precision analysis of how cells respond to microgravity conditions.

This capability is expected to support research into ageing, disease mechanisms, and pharmaceutical development, areas where microgravity offers unique insights not possible in Earth-based environments.

A long-standing role in space technology

Nikon has a long history of supporting space missions, with its cameras and lenses used by NASA since the Apollo era. More recently, its imaging technology has been adapted for scientific use aboard the ISS, including microscopy systems designed for confined and complex space environments.

The current project builds on earlier work initiated in 2021, when Nikon was selected for an ISS development programme supported by CASIS and U.S. government funding. Under that programme, Nikon and NII jointly developed the live cell observation system, with NII responsible for overall project management.

Bridging space research and Earth-based applications

The research focuses on Microphysiological Systems (MPS), advanced 3D culture models that replicate conditions inside living organisms. Observing these systems in microgravity allows scientists to better understand how biological processes change in space, with potential implications for healthcare on Earth.

Insights gained from the project are expected to inform both future space exploration and terrestrial medical research, particularly in areas such as tissue response, disease progression, and drug effectiveness.

By extending its expertise into space-based life sciences, Nikon is positioning its technology at the intersection of advanced research and real-world application—supporting a growing field where project delivery, scientific innovation, and international collaboration converge.