

SCIENCE SHELL

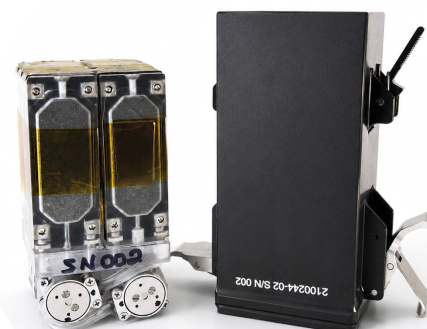
TYPE-VII

YURI

Our Bioreactor Type-VII ScienceShell

Currently operational on ISS in ScienceTaxi BioSpin

The ScienceShell features a modular, 3D-printed design comprising **one central reaction chamber and two integrated tanks**. It is specifically engineered to support **ion exchange process** in which ion-exchange membrane divides the reaction chamber, enabling the controlled transfer of ions essential for the generation of target products. Each side of the chamber can be equipped with customized cathodes and anodes, allowing flexible adaptation to a wide range of electrochemical or bioelectrochemical applications. The tanks and reaction chambers are **modular design and can be adjusted to the required volume** for any specific experiment.



- Compatible OuterShell: 448
- Automation Level: Fully Autonomous
Operation Type: Active
- LoC: 3** ; 1 (InnerShell) + 2 (OuterShell)
- Maturity: Spaceflight Proven (**TRL 9**)
- Last mission: HUMB
- Material of CC and Tank: Biocompatible photopolymer resin
Manufacturing Process: 3D Printed and Assembled by Yuri
- Number of CC/Reaction Chamber: 1
Number of Tanks: 2
- Volume of CCs: 15 ml
Volume of Tanks: 4.5 ml
- Medium Exchange:**
By: Yuri Fluidic Pumping System, Ion-Exchange Membrane
NOs. of exchanges: 2
Duration of exchange: 1.5 Minutes each
- Compatibility of Facility: **ScienceTaxi Haven-1, ScienceTaxi BioSpin**, SABL, Kubik, through ScienceBox (TangoLab & ICE Cubes)
- Already flown biological material/cells: Basfia succiniciproducons

