The BioPOW instrument prototype was designed to purify amino acids, in-situ, from complex ocean world samples to enable sensitive and accurate detection by conventional analysis techniques (e.g. GC-MS).

- Individual modules (sample cup, manifold purifier, and derivatization tank) were tested for performance before integration into a small size (12cm × 20cm × 20cm) and low weight (590 g) automated platform.
- BioPOW produces sample-agnostic, purified amino acids for versatile downstream detection techniques.
- This prototype can improve detection sensitivity and confidence in biosignature detections at ocean worlds, supporting future life-detection capabilities.

Article Citation: