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DEVELOPMENT STATUS OF ONE MEMBRANE BASED SEPARATOR FOR SPACE OXYGEN
GENERATION SYSTEM**Abstract**

Separation of a continuous two-phase gas/liquid flow stream into the respective gas and liquid stream in a microgravity environment is a necessary and challenging requirement in manned space station Environmental Control and Life Support System (ECLSS). Here we describe development status of one membrane based static water/gas separator (WGS) designed for use in the Oxygen Generation Assembly (OGA) by electrolysis of purified water for space station. A proof-of-concept separator has been designed, fabricated and tested to assess the performance. Furthermore, the WGS flight experiment was flown aboard the A300 Zero-G to evaluate the effectiveness of the separator in a microgravity environment, and to support the development of the flight like WGS. The flight like WGS has been developed and incorporated into the flight experiment OGA. This paper presents results of both the ground and parabolic flight performance tests of the WGS. The results show that this WGS design can fulfillment the requirement of the space station OGA.