

SPACE PROPULSION SYMPOSIUM (C4)  
New Missions Enabled by New Propulsion Technology and Systems (6)

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PROGRESS TOWARDS ENABLING A NEXT-GENERATION SOLAR ELECTRIC PROPULSION  
TRANSPORTATION CAPABILITY

**Abstract**

The National Aeronautics and Space Administration has identified the use of Solar Electric Propulsion (SEP) at power levels in excess of those currently being used as potentially enabling space transportation for both future human-crewed and robotic exploration missions. Increasing the power level of these systems increases thrust sufficiently to enable high specific impulse payload deliveries with acceptable trip times for missions that could not be practically preformed using conventional chemical propulsion. A range of advanced technologies is currently under development in order to enable this next generation capability. Integrated in-space system demonstration options are also being formulated, as potential interim steps towards this desired solar electric propulsion capability. This paper summarizes the current status of both the advanced technology development activities and the efforts to identify options for in-space demonstrations of these technologies.