



**GS Yuasa Technology's Lithium-ion Batteries Installed in Epsilon-2 Launch Vehicle and Exploration of energization and Radiation in Geospace (ERG) Satellite**

GS Yuasa Corporation (Tokyo Stock Exchange: 6674; "GS Yuasa") announced that the lithium-ion batteries manufactured by group company GS Yuasa Technology Ltd. ("GYT") have been installed in the Epsilon-2 Launch Vehicle, launched from the Uchinoura Space Center by Japan Aerospace Exploration Agency ("JAXA") on December 20, 2016, and the Exploration of energization and Radiation in Geospace (ERG) satellite (nicknamed "Arase") carried by the rocket.

Epsilon-2 is installed with the common lithium-ion batteries for launch vehicles, developed by GYT under a contract with IHI Aerospace Co., Ltd. based on JAXA's request. The batteries supply electricity to the rocket control equipment.

ERG carries space use lithium-ion battery\*<sup>1</sup> JMG035 (35Ah), commissioned by JAXA Research and Development Directorate and developed by GYT, and the batteries supply electricity to the satellite when it goes into the shadow of the earth\*<sup>2</sup>.

GYT develops, manufactures and distributes batteries and power sources for special applications and has been supplying high-performance, high-quality batteries for special environments of sea, land and air (from depths of 6,500 meters below the ocean surface to 36,000 kilometers high in space).

The GS Yuasa Group will continue to contribute to space development projects through the development and manufacturing of high performance lithium-ion batteries going forward.

\*1 In addition to the above, GYT has developed a total of eight models of space use lithium-ion batteries commissioned by JAXA Research and Development Directorate to respond to a wide range of electricity requirements of various types of satellites. These models include JMG042 (42Ah), JMG050 (50Ah), JMG055 (55Ah), JMG100 (100Ah), JMG110 (110Ah), JMG150 (150Ah) and JMG190 (190Ah).

\*2 The artificial satellite operates on electricity supplied by solar cells but there are periods when it does not receive sunlight as it goes behind the earth while orbiting. During this period, the lithium-ion batteries supply the electricity necessary for operation of the satellite.

[Specifications of the lithium-ion batteries installed in the ERG satellite]

Component code	JMG035
Nominal voltage (V)	3.7
Capacity (Ah)	35
Dimensions (mm) <sup>*3</sup>	W98×D37×H159
Mass (g)	1,050

\*3 Height (H) includes electrode (excluding stud bolts)

[Images]

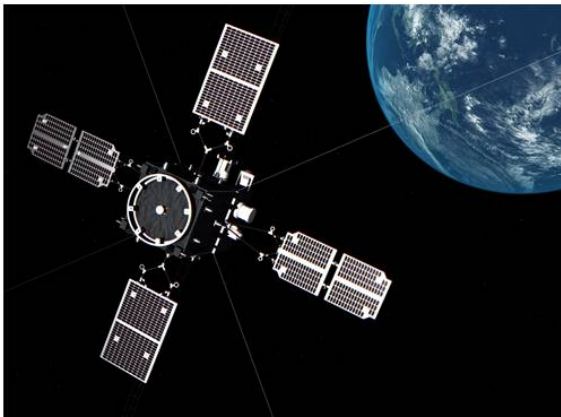
1. Epsilon Launch Vehicle (© JAXA)



2. Common lithium-ion battery for launch vehicles



3. Exploration of energization and Radiation in Geospace (ERG) satellite (© JAXA)



4. Lithium-ion battery JMG035 installed in ERG satellite

