

## A Review of Remote Sensing Observations of the Near-Earth Asteroid (25143) Itokawa

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The Hayabusa spacecraft carried out detailed scientific observations of its mission target asteroid, (25143) Itokawa, using the onboard devices: a telescopic imaging camera (AMICA, at 0.38 - 1.01  $\mu\text{m}$  with seven narrowband filters), a near-infrared spectrometer (NIRS, 0.8 - 2.1  $\mu\text{m}$ ), an x-ray fluorescence spectrometer (XRS), and a laser altimeter (LIDAR), revealing its shape, mass, and surface topography and mineralogical properties. From the low bulk density ( $1.9 \pm 0.1 \text{ g/cm}^3$ ), high porosity (40 %), boulder-rich appearance, and irregular shape, it is considered that Itokawa has a rubble-pile structure. We learned that Itokawa has a large variety of albedo, color, and spectral shape, which can be explained by space weathering on the S-type asteroid. At the conference, we review these findings by the remote-sensing devices. In addition, we introduce our recent research activity at Seoul National University using AMICA data archive, which includes an updated data reduction process, studies of back-scattering properties and spatial variation of the optical spectra using all AMICA filters.

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