

## Operataion test of LIBS onboard lunar and planetary rover

KAMEDA, Shingo<sup>1\*</sup>, ISHIBASHI, Ko<sup>2</sup>, CHO, Yuichiro<sup>3</sup>, KOBAYASHI, Masanori<sup>2</sup>, ARAI, Tomoko<sup>2</sup>, NAMIKI, Noriyuki<sup>2</sup>

<sup>1</sup>Rikkyo University, <sup>2</sup>Chiba Institute of Technology, <sup>3</sup>The University of Tokyo

We are developing Laser Induced Breakdown Spectroscopy (LIBS) instrument for lunar and planetary exploration. We manufactured a prototype model in 2011. It is composed of a high-energy pulse laser, optics for focusing light at the surface of the target, an image sensor, and spectrograph. We attended the field roving test of one of the prototype of lunar and planetary exploration rover, Micro-6 at the top of Mt. Aso in Kumamoto from 7 to 9 in November, 2011. We used a prototype LIBS model without a pulse laser to demonstrate the performance of auto-focus mechanism because there are many tourists and we had to avoid injuring their eyes without eye-safe glasses. After that, we performed the test with a high energy pulse laser with mini-rover in the room in Sagamihara campus of ISAS/JAXA. We confirmed that it is difficult to install the LIBS on the gimbal at the top of the mast of the rover because of its weight and the data rate is too low to control our prototype. In this presentation, we report our test result and introduce the renewed design of LIBS for lunar and planetary exploration.