



## The science system on-board the Emirates Lunar Mission's Rashid rover

**Sebastian Els**<sup>1</sup>, Sara Almaeeni<sup>2</sup>, and Hamad Almarzooqi<sup>3</sup>

<sup>1</sup>Mohammed Bin Rashid Space Center, ELM, Dubai, United Arab Emirates (sebastian.els@mbrsc.ae)

<sup>2</sup>Mohammed Bin Rashid Space Center, ELM, Dubai, United Arab Emirates (sara.almaeeni@mbrsc.ae)

<sup>3</sup>Mohammed Bin Rashid Space Center, ELM, Dubai, United Arab Emirates (Hamad.AIMarzooqi@mbrsc.ae)

The Emirates Lunar Mission is developing the small and light weight "Rashid" rover. The goals for this rover are to traverse several hundred meters on the lunar surface during the course of one lunar day. The Rashid rover's science objectives cover both fundamental science as well as engineering topics with the goal to enable future missions to the lunar surface, and other airless solar system bodies. Hence, Rashid will carry a suite of scientific instruments and an experiment, covering a wide range of the physical properties at the lunar surface. The focus of investigation for the microscopic imager (CAM-M) will be to measure the regolith particle size distribution, and the lunar surface structure at microscopic scales. The Langmuir probe system (LNG) will address the electron density profile of the sheath, its behavior over the course of the lunar day, and its dependence on topographic features. A thermal imager (CAM-T) with low spatial resolution is also foreseen. Finally, the in-situ testing of the adhesive and abrasive properties of various materials to lunar regolith is planned to be conducted by the MAD experiment. In this paper the science program and instrumentation of the Rashid mission will be outlined.