

# Ice-drilling and ground characterization on the moon for space mining

*Author One<sup>1</sup>, Author Two<sup>2</sup> and Author Three<sup>3</sup> (initials and surnames only)*

***B.H. Ryu<sup>1</sup>, J. Lee<sup>2</sup>, H.W. Jin<sup>3</sup>, H.S. Shin<sup>4</sup>***

Note: Presenting author's name should be underlined.

1. Research Specialist, Korea Institute of Civil Engineering and Building Technology, Republic of Korea; e-mail: [tnt306@kict.re.kr](mailto:tnt306@kict.re.kr)
2. Research Fellow, Korea Institute of Civil Engineering and Building Technology, Republic of Korea; e-mail: [jlee@kict.re.kr](mailto:jlee@kict.re.kr)
3. Senior Researcher, Korea Institute of Civil Engineering and Building Technology, Republic of Korea; e-mail: [hyunwoo.jin@kict.re.kr](mailto:hyunwoo.jin@kict.re.kr)
4. Senior Research Fellow, Korea Institute of Civil Engineering and Building Technology, Republic of Korea; e-mail: [hyushin@kict.re.kr](mailto:hyushin@kict.re.kr)

Keywords: Ice-drilling, lunar ground characterization, space mining

## ABSTRACT

Prospecting ice on the Moon requires drilling systems to obtain subsurface samples and measure composition of ice deposits. Landers and rovers need to be equipped with drilling equipment in order to analyze the ice and subsurface resources located at the poles of the Moon. These devices must be small, lightweight, low-power, highly efficient, and high-performance units in order to function properly under the extreme conditions of the lunar environment. Researchers have developed a prototype drilling apparatus able to operate in atmospheric and cold environments. Newly developed drilling system in Korea, capable to perform not only sampling but also subsurface investigation, is introduced.