

21st IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND  
DEVELOPMENT (D3)Strategies & Architectures as the Framework for Future Building Blocks in Space Exploration and  
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## THE TECHNICAL FEASIBILITY OF 3D PRINTING TECHNOLOGY FOR LUNAR BASE

**Abstract**

Lunar In-Situ Resource Utilization (ISRU) has been suggested for the self-sustaining habitation and future space exploration. The main idea behind focusing on ISRU is based on the fact that launching all the necessary resources from Earth to space is very restrictive and expensive (it can cost up to 20,000 to transport one kilogram of materials from Earth to Moon which can exponentially scale if we were to transport to space).

Aside from that, we utilized the use of FOSS (Free Open-Source Software) to detect the potential regions with access to available solar energy for 3D printing for lunar architecture. The adaptation of 3D printing technology on the moon is a referenced on paper to highlight the sustainability of the additive manufacturing for creating shielding lunar habitats in the future.

In particular, we take into account the availability of raw materials with access to regular sunlight intensity in those regions. Adaptation of the 3D printing technology on the moon is presented to demonstrate the sustainability of the additive manufacturing for future missions.