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DESIGN AND DEVELOP ADVANCED ROBOTIC CONTOUR CRAFTING PROCESS

Abstract

We have designed and developing a prototype keeping in consideration with special consideration for challenges such as the complexity of the cluttered and dynamic working space. This project research focuses on a unique architecture interfaced with robotic building construction techniques with designs for assisting rapid buildup of new paradigms Lunar and Martian bases. Tools and equipment's used are flown form Earth and proposed to build infrastructure to support future mission and settlement on the Moon and Mars. Our research lab investigates novel directions in adaption of our fabrication technologies by using in-house laboratories and produce new technologies and data. Beside building 3D Printing Technology called Contour Crafting, Notion Robotics Lab are into research other fabrication technologies which is under development and understanding the planetary applications that we plan to develop new techniques for construction of infrastructure such as regolith soil and building materials. This research paper will present a conceptual design of a Lunar Contour Crafting System with Co-operative Autonomous Robot designed to autonomously fabricate integrated structures on the Lunar Surface using high strength concrete based on Lunar regolith, which includes fibers fabricated from melted regolith. Design concept will be presented as we as results, key issues and concerns along with study evaluations with respect to exploration and other performance and developed at Notion Robotics Lab. Keywords:- Robotic Contour Crafting, Co-operative Autonomous Robots, Construction of Infrastructure, Fabrication Technologies, Inhabitable Outpost.