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Nota di contenuto	Space Structures and Materials Design and Operations -- Water as the main component of cosmic radiation shielding spacecraft wall modelling -- Prospects for the Use of Thin Film Photovoltaic Converters for Space Applications -- Features of Comparison Function for Simulating the Reaction Control System Using Analytical Networks -- Statistical Approach for Monitoring the Lack of Quality in Aerospace Manufacturing Operations -- Nanoparticles for space theranostics -- Moon exploration and exploitation -- The European Moon analog LUNA -- Regolith Analogs Analysis Through DEM A Focus on Repose Angle Test -- Cohesive Strength Tests of Lunar Regolith Simulants During

Storage and Flow -- Earth and Space Mining a Short Overview of the Technical and Technological Challenges -- XRD analysis of lunar and Martian soils as a prerequisite for future human missions.

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## Sommario/riassunto

This book collects advances, innovations, and applications in the field of space resources and exploration, as presented by international researchers at the 7th Space Resources Conference (KGK), held in Kraków, Poland, on May 23–24, 2024. The book serves as a forum for discussion on the state-of-the-art technologies applicable to current challenges of space exploration, the use of space resources to improve the living conditions of humans and protect Earth's natural environment, and the latest research results on space resource extraction, transportation, manufacturing in space, and how to develop settlements on the Moon and Mars. Topics include bioastronautics and life support systems, Earth observation and sensors issues, space law, subspace missions, space industry, society and space, space education, and space structures design and operations. The book, which is selected by means of a rigorous peer-review process, presents a wealth of exciting ideas that will open novel research directions and foster multidisciplinary collaboration among different specialists.

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