PRAISED BY ROBERT ZUBRIN

"LET'S MAKE THIS VISION A REALITY"
ROBERT ZUBRIN

The New Beginnings

Genesis

ONE WAY TO CREATE THE FIRST STABLE ATMOSPHERIC LAYER ON MARS

Bence Mátyás

FEATURING BIOLOGICAL TRANSFORMATION AS A METHOD FOR TERRAFORMING MARS AND INCLUDING THE LATEST PRIVATE SPACE BIOSCIENCE RESEARCH.

"*Genesis: The New Beginnings* explores terraforming Mars at the soil level, detailing the steps to make the planet breathable—a must-read for space enthusiasts."

-BERTALAN FARKAS, ASTRONAUT

Genesis outlines a roadmap for Mars colonization, blending soil biology and greening technology. Bence Mátyás introduces concepts like microbial terraforming, plant-based environmental engineering, and Plant Transporting Rocket Capsules, offering practical steps to make Mars habitable. His experimental results align with Carl Sagan's findings on gas production and atmosphere thickening, providing a compelling link for readers interested in planetary transformation. The book also covers the MayaSat-1 mission, setting a new standard for private space bioscience research. Launching in June 2025 aboard SpaceX's Falcon 9, the mission will carry unflown biological experiments and return valuable microgravity data. Mátyás explores Mars-focused experiments that combine microbial science with greening technology, bridging space exploration challenges with humanity's drive to innovate. A must-read for those interested in Mars exploration and sustainable space development.

"A visionary guide to building a future on Mars."

-VICTOR MAIER

"A breakthrough in private space biosciences."

-ANNA SANDAK

Dr. Bence Mátyás, CEO and founder of Genesis SFL, is an environmental engineer at the forefront of space biology and Mars terraforming. Renowned for his terraforming mission plan showcased on Shark Tank Budapest Edition (Cápák Között), he has made significant contributions to advancing orbital bioscience. With research published in leading journals like Electrophoresis and The Lancet Planetary Health, and a European Space Agency grant to develop portable labs, he is positioning his company as a global leader in accessible and affordable microgravity studies.

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One way to create the first stable atmospheric layer on Mars at the soil level.

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Genesis: The New Beginnings

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info@genoplant.com

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ARCHI-SKIN: Opportunities for Engineered Living Materials in Extreme Conditions

Anna Sandak[1,2,3] Anja Černoša[1,3], Ana Gubenšek[1,3], Wojciech Pajerski[1,3]

[1]InnoRenew CoE, Livade 6a, 6310 Izola, Slovenia, anna.sandak@innorenew.eu
[2]Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska, Glagoljaška 8, 6000 Koper, Slovenia
[3]Andrej Marušič Institute, University of Primorska, Titov trg 4, 6000 Koper, Slovenia

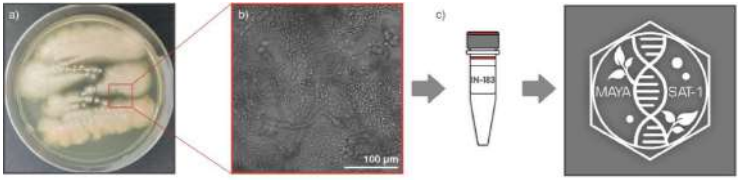
Materials have shaped civilizations, driving technological advancement across industries. Nowadays, a material's relevance is increasingly determined by its adaptability, functionality, and environmental impact, especially in critical applications requiring resilience, such as construction or aerospace industries. Advances in materials science and a shift toward active, adaptive systems have opened the door to a new frontier: Engineered Living Materials (ELMs).

Combining artificial and biological components, ELMs represent a groundbreaking development in materials engineering. Unlike conventional materials, ELMs harness the unique capabilities of biological building blocks, enabling

them to perform functions such as self-repairing cracks in coatings, replicating under controlled conditions, and responding to environmental changes.

This presentation will explore the emerging role of ELMs, with a focus on applications in extreme environments, including space. Our research includes developing a living coating system for the construction sector based on fungal biofilms, designed for self-healing, adaptability, and resilience. To push the boundaries of this research, our biofilm samples are currently in orbit and will undergo testing upon their return to evaluate the effects of radiation and microgravity on their properties and behavior.

Our work is part of a larger initiative advancing the use of innovative materials in space exploration. Supporting this research is MayaSat-1, a reusable biological incubator cube developed by Genesis SFL, designed to carry a variety of biological samples, including plants, fungi, algae, and human DNA, into space. Integrated into the Mission Possible space capsule, MayaSat-1 will orbit Earth three times before returning for analysis, offering critical insights into biological resilience and adaptation in space contributing to experimental advances in space research.



Fungus Aureobasidium pullulans (strain IN-183) cultivated on PDA solid agar medium. (b) Microscopic detail of biofilm structure. (c) Schematic representation of the MayaSat-1 biological payload integration.

By combining ELMs with pioneering biological research, we aim to develop sustainable, self-regenerating materials capable of supporting human habitation in the most challenging environments. This research represents a significant advancement for space infrastructure and sustainable innovation on Earth, paving the way for a future where biological resilience becomes integral to advanced materials engineering.

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