Characteristics of long-term solar container substances in organisms

Are photosynthetic microorganisms adapted to space conditions?
The exciting field of agriculture adapted to space conditions is at its beginning. So far,photosynthetic microorganisms have shown unique propertiesand mechanisms proving their ability to enhance plant growth and improve crop yields in various environments by means of secondary metabolite and fertilisers production.

Why are cyanobacteria suited for space agriculture?
The limited resource availability in space makes photosynthetic microorganisms like cyanobacteria well-suited for space agriculture because of their ability to use light as an energy sourceand carbon dioxide as a carbon source.

Do water characteristics affect the radiation distribution of SODIS containers?
However,increasing the volume of the SODIS containers must be carefully addressed to ensure that the effect of water characteristics on the radiation distribution(absorption and scattering) is considered to conduct an in-depth evaluation of the radiation reaching pathogens.

What are photosynthetic microorganisms?
Photosynthetic microorganisms are a foreseen solution for supporting plant development, growth, and stress tolerance in closed environments, like those designed for space colonisation.

Why is the ISS A Microbial Observatory?
The ISS is an enclosed habitat and has application as a 'microbial observatory' to study the effect of space conditions on microbial life. In Astrobiology,studying microbial life in space is crucial to answering the primary questions related to the 'origin of life.'

Can cyanobacteria and microalgae be used in space experiments?
In fact,cyanobacteria and microalgae have already been used in several space experimentsto study their growth and photosynthetic capabilities under simulated microgravity conditions (Mapstone et al. 2022),and their use as food or oxygen suppliers (Gòdia et al. 2002; Lasseur et al. 2005).

This comprehensive review summarized the aging characteristics of MPs in terms of the physiochemical properties, environmental behavior, mechanisms, and affecting factors, and ...

A long-term (147-day) greenhouse pot experiment was conducted to differentiate the main focus of the study: physical and chemical effects of oil (vegetable and diesel) in freshly spiked ...

These experiments provided evidence that not only bacterial and fungal spores but also dormant forms of organisms that reached higher levels of evolutionary development had the ...

Characteristics of long-term solar container substances in organisms

This review summarizes the gut colonization modes of Lactobacillus and Bifidobacterium in the context of their natural niches and engraftment metadata in an attempt to ...

Therefore, the present study aims to compare the activity changes of PAOs and GAOs when subjected to long-term starvation conditions and the recovery of their metabolic activity in terms ...

The environmental DNA (eDNA) metabarcoding was applied to assess benthic ecological health in the west coast of South Korea by investigating a long-term microbial community change (2015-17). The ...

This model system, which has the advantages of extensive genetic and biochemical information, shows no features of long-term memory. To study long-term memory, neural cell line systems have been ...

Microplastics (MPs) are widely found in the ocean and cause a serious risk to marine organisms. However, fewer studies have been conducted on benthic organisms. This study ...

Long term (90 day) stability, aggregation kinetics in the presence and absence of natural organic materials (NOM), and metal leaching of five commercial single wall carbon nanotubes ...

In today"s dynamic energy landscape, harnessing sustainable power sources has become more critical than ever. Among the innovative solutions paving the way forward, solar energy ...

The amount of plastic waste and microplastics released into marine environments has increased rapidly in recent decades. The durability of plastic materials results in major problems following their release ...

The effects of these biotic disturbances on the multiple soil functions generated by soil organisms have hardly been identified. It is crucial to investigate the impacts of long-term fertilization ...

We researched the long-term stability (in air, nitrogen, and low pressure) and degradation trend of perovskite solar cells in space. We found they have high stability after 400 days ...

However, increasing the volume of the SODIS containers must be carefully addressed to ensure that the effect of water characteristics on the radiation distribution (transmission and ...

Thermal power plants based on solar energy under construction or completed have increased significantly as a way of energy production in the USA, Southern Europe, Australia, and ...

The long-term effects of salinity on extracellular polymeric substances (EPS), microbial activity and microbial community from biofilm and suspended sludge (S-sludge) in an anoxic-aerobic ...

Characteristics of long-term solar container substances in organisms

One of the next-generation solar cells mounted on SDX is a perovskite solar cell (PSC), which is cost-effective and has the potential for high specific power and radiation tolerance. It is ...

Therefore, the term "natural light" should be understood as a concept encompassing the entire solar spectrum along with a combination of environmental factors, rather than being limited ...

Article on Chemical characteristics of long-term acid rain and its impact on lake water chemistry: A case study in Southwest China, published in Journal of Environmental Sciences 138 on ...

Prospects for the use of certain types of phototrophic microorganisms in LSS are considered. The influence of space expedition stress factors on phototrophic microorganisms is ...

Plastic is one of the most widely used materials today in many different products due to its moldable and lightweight characteristics. It is these same characteristics that make it almost indestructible. So, the ...