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HCG035-P02

Room:Convention Hall

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The small ecosystems using cyanobacteria and a Martian regolith simulant

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The detailed verification of the space-environment tolerance of the creature on the earth has the merit of a lot of new results and the possibility about the development related to them. Specifically, the appearance of the cyanobacteria, one of photosynthetic creatures, on the earth had a great influence on the material recycling and the oxidation of the atmosphere in the earth in the past period. Arai et al.(2008, 2010) have reported that *Nostoc* sp. of the cyanobacteria showed the high tolerance to vacuum. It has been also proved that cyanobacteria could grow in the Martian regolith simulant. Their results lead the possibility that the dried cyanobacteria can be carried in the outer planet from earth, in future, too. Here, we design small scale of bio-ecosystem using the Martian regolith simulant and the cyanobacteria. The designed small ecosystems are variously changed in the environmental conditions. We will review the utilization for teaching materials in the designed system which examines the process of the change and also discuss the possibility that the small ecosystems are able to use in the several research fields after our investigation.

Keywords: cyanobacteria, Martian regolith simulant, small ecosystems, teaching materials