Opinion
Volume 6:5, 2022

Journal of Environmental Hazards

ISSN: 2684-4923

Open Access

Current Progress, Problems and Perspectives in the Biological Conversion of Methane to Polyhydroxyalkanoates

Kohei Iritani*

Department of Applied Chemistry, Tokyo University of Technology, Tokyo 192-0982, Japan

Introduction

The most common environmental disease today is pollution, which is the waste that humans release into the air, water and land. It is accountable for the loss of human capital, ecosystem degradation, an estimated nine million premature deaths annually and enormous economic losses. Ocean pollution is a significant part of global pollution, but it is not sufficiently recognized or controlled. It is very bad for people's health and well-being. The extent and nature of these effects are still poorly understood. Conduct a comprehensive investigation of the known and potential health effects of ocean pollution. Make these threats known to policymakers, leaders of governments, international organizations, civil society and the general public worldwide. Prioritize interventions to control and prevent seawater pollution and protect human health [1,2].

Discussion

The amount of plastic waste that ends up in the oceans each year is estimated to be 10 million metric tons, making it a component of ocean pollution that is rapidly growing and very visible. In the oceans, mercury is the metal pollutant of greatest concern; It comes from two main sources: small-scale gold mining and combustion of coal. Harmful algal blooms (HABs) spread to previously unaffected regions as a result of the global spread of industrialized agriculture and the growing use of chemical fertilizers. Seas and marine organisms are tainted by chemical pollutants everywhere, from the high Arctic to the deepest oceans.

The ocean, wildlife and human health are all at risk from plastic waste pollution. From 2020 to 2027, the global plastic market is expected to expand at a compound annual growth rate (CAGR) of 3.2 percent, reaching a value of $568.9 billion in 2019. However, the current outbreak of the coronavirus (COVID-19) is elevating the issue of pollution caused by plastic waste to an entirely new level. Due primarily to the pandemic response, projections indicate that the global market for plastic packaging will grow at a CAGR of 5.5% from USD 909.2 billion in 2019 to USD 1012.6 billion by 2021. Despite its potential for recycling and reuse, the majority of this plastic waste ends up in either landfills or incinerators, where it is permanently lost as a resource. The Environmental Protection Agency (EPA) reports that in 2015, 75.4% of the plastic materials produced by municipal solid waste streams in the United States were dumped in landfills, 15.5% were burned for energy and 9.1% were recycled. Dumping plastic waste makes it difficult to keep the environment clean and green. Marine life, including ocean animals and coral reefs, have been severely impacted by this "white pollution" caused by enormous amounts of plastic debris in aquatic environments. For instance, the marine species have experienced issues such as ingestion, entanglement, debilitation and suffocation as a result of these marine debris. As a result, the marine species' life quality has decreased, they have been unable to avoid predators as effectively, they have a diminished capacity to reproduce and they have died.

In both laboratory-scale and field-scale studies, numerous researchers have investigated and reported the potential of such bioremediation technology with varying HPAM removal efficiency from oil field produced water. The current review is in line with the UN Sustainable Development Goal 6 for water security. It emphasizes the scope of these HPAM-based EOR applications, the difficulty of produced water treatment, current and potential solutions and the potential for future reuse of treated water sources. The large amount of plastic that is currently contaminating the land, air, waterways and oceans in which we live is another issue that requires our attention. Worldwide, approximately 380 million tons of plastic are produced annually as of 2018 [3-5].

Conclusion

Additionally, waste packaging foam was used as a crosslinker due to its low surface energy in a co-Pickering emulsion system with silica and Span 80 to stabilize the emulsions. The discarded PS plastic can be dissolved in a styrene monomer and used to build a hydrophobic skeleton for the target material thanks to its low surface energy. As a result, the produced foam was able to separate oil spills and heavy oil from water due to its superhydrophobic and oleophilic properties. The control experiments on the amount of water revealed that the amount of water used to prepare the material had a significant impact on the foam's capacity to absorb oil.

Acknowledgement

None.

Conflict of Interest

There are no conflicts of interest by author.

References

1. Aoyagi, Shuichi, Hiraku Onishi and Yoshiharu Machida. "Novel chitosan wound dressing loaded with minocycline for the treatment of severe burn wounds." *Int J Pharm* 330 (2007): 138-145.
2. Singh, Rita and Durgeshwer Singh. "Chitin membranes containing silver nanoparticles for wound dressing application." *Int Wound J* 11 (2014): 264-268.
3. Vournakis, John N., Marina Demcheva, Anne B. Whitson and Sergio Finkielsztein, et al. "The RDH bandage: hemostasis and survival in a lethal aortotomy hemorrhage model." *J Surg Res* 113 (2003): 1-5.
4. Hamlyn, P.F. "Fabricating fungi." *Biomacromolecule* (1991): 254-7.
5. Rabea, Entsar I., Mohamed E-T. Badawy, Christian V. Stevens and Guy Smagghe, et al. "Chitosan as antimicrobial agent: applications and mode of action." *Biomacromolecules* 4 (2003): 1457-1465.

***Address for correspondence:** Kohei Iritani, Department of Applied Chemistry, Tokyo University of Technology, Tokyo 192-0982, Japan; E-mail: iritani.k88@gmail.com*

Received: 28 August, 2022, Manuscript No. jeh-23-85956; **Editor assigned:** 30 August, 2022, PreQC No. P-85956; **Reviewed:** 15 September, 2022, QC No. Q-85956; **Revised:** 21 September, 2022, Manuscript No. R-85956; **Published:** 29 September, 2022, DOI: 10.37421/2684-4923.2022.6.181

How to cite this article: Iritani, Kohei. "Current Progress, Problems and Perspectives in the Biological Conversion of Methane to Polyhydroxyalkanoates." J Environ Hazard 6 (2022): 181.