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Plastic Pollution and Effective Solutions

Environmental pollution due to plastic waste has become a major issue throughout the world. Because of the easy handling and the low cost of manufacturing, plastic products are popular among people. However, increased use of plastics leads to the accumulation of plastic waste causing severe environmental damages. Single used plastic products, such as bottles and plastic bags are thrown away after using only one time. Irresponsible use and disposal of plastic waste results in creating mountains of plastic landfills and the pollution of water resources as well as the oceans around the world. It is not possible to ban the use of plastic products because of their widespread applications in every field. Instead, it is important to find effective solutions to handle plastic waste and reduce the pollution. An effective solution is to find new methods to properly recycle plastic waste and convert them into usable forms such as generation of energy. Literature reviews show that this argument has not changed over a period of time. Scholarly conversation on plastic pollution since 2000 till 2017 demonstrates the importance of using technology to recycle plastic waste in order to minimize the extremely damaging environmental pollution.

Plastic pollution has caused a tremendous environmental damage due to landfills and accumulation of plastic waste in the ocean forcing authorities to take measures to address the issue. Publications published prior to 2010 raise the concerns about environmental damage due to plastic pollution. It has become a major challenge since enormous amount of landfills created from

plastic waste. Several programs have been introduced by governments at national, state and local levels to minimize the negative consequences of plastic pollution. Researchers highlight that there should be higher level of education about the damages of plastic pollution and how they can be more responsible in using and discarding plastic products (Jakovcevic, 2010). Some solutions such as charging for using plastic bags have shown their effectiveness in some areas while they have failed in other areas due to negative consumer reaction for such measures. The same concerns about the environmental pollution are one of the main focal points highlighted by scholars of 2010. Synthetic clothing that use plastic materials can tremendously contribute to the pollution of water ways and oceans around the world. The most disturbing finding is that washing machine use produces microfibers every time they are used for washing clothes. According to researchers, “Clothing, no matter its composition, breaks down due to: aging and abrasion from wear, and abrasion in the washing machine. This abrasion creates microfibers: if the clothing is synthetic this will produce plastic microfibers (Miller, et al., 2017). Scientists have conducted research on the level of impact on ocean waters because of microfibers. Collection and scientific analysis of water samples from various aquatic resources have revealed increasing level of microfibers contained in the samples. Therefore, scholars have made credible arguments on the negative consequences of plastic pollution.

Advancing science and engineering can help find more effective solutions to address the issue of plastic waste. Scholars highlight the importance of utilizing science and engineering to develop novel technologies to reduce plastic pollution according to the published work before 2010. Environmental pollution due to plastic waste contributes to global warming and other negative impacts on the environment, but new technologies on processing the plastic waste can help

reduce this damage (Azapagic, 2003). It is important to study techniques and methodologies to find effective solutions for the threat of environmental pollution due to plastic waste. This is similar to the views of scholars expressed after 2010. Because of the higher cost associated with recycling and handling of this type of materials, they are mostly thrown away without effective monitoring. However, science and technology have developed novel processing techniques to recycle plastic waste more effectively with reduced cost (Ma. et al., 2016). Researchers and engineers have made consistent effort to develop novel techniques to recycle plastic waste in order to minimize the effects of plastic pollution.

Advanced engineering methods allow converting plastic waste into usable energy. According to the research publications before 2010, advanced techniques have been developed using chemical engineering concepts of transforming plastics into energetic gases through combustion. Therefore, it will encourage the utilization of these types of technologies because of generating additional revenue since the demand on energy is also steadily increasing. The findings suggest that, “The gasification process appears technically feasible, yielding a producer gas of valuable quality for energy applications in an appropriate plant configuration” (Arena and Di Gregorio, 2010). Therefore, plastic waste can be reduced while using it to generate energy. Researchers continually work along these concepts in order to further improve energy generation processes using plastic waste after 2010. Experts report that “pyrolysis technology gained a lot of attentions since it could convert plastic waste into oil that could be used as crude oil for further upgrading, distillation, or directly utilized with other conventional fossil fuels” (Areprasert, 2017). More importantly, this technique involves only low-budget with minimum skills to handle the operation when generating energy from plastic waste.

Plastic pollution has become a serious environmental problem due to the accumulation of plastic waste in the ocean and forming landfills with these harmful materials. Since the use of plastic materials and products made with plastics is on the rise due to the convenience of handling, it is not possible to drastically reduce the use of these materials. Therefore, it is important to find effective ways to handle plastic waste and turn it into usable forms. Scholarly conversation argues that it is important to find solutions based on advanced technologies to recycle the plastic waste in order to minimize the pollution. Science and engineering have developed novel technologies to process plastic waste more effectively with low budgets to convert it into usable form of energy. The conversation has not changed during the period since 2010 till 2017.

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