Institute of Chemical Engineering

Biodegradation of polyethylene using soil bacteria and rhamnolipids

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Authors:	Agnieszka Gąszczak, Elżbieta Szczyrba, Tetiana Pokynbroda, Nataliia Koretska
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Abstract: Seven strains of bacteria were isolated from the landfill. The isolates were co-cultivated with LDPE and rhamnolipids. Changes in the structure of LDPE films after 28 days of exposure to bacteria were confirmed by FTIR spectroscopy. The toxicity of plastic biodegradation products in a liquid nutrient medium was investigated and their safety for plants was shown. However, these biodegradation products have acute lethal toxicity for the crustacean Daphnia magna.

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