

ASEANの科学技術の今を伝える

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Translated from Japanese

Singapore devises safe recycling method for electronic waste plastics

On November 13, researchers at Nanyang Technological University (NTU) in Singapore announced that they have devised a safer way to recycle plastic from electronic waste (e-waste). The results of their research were published in the scientific journal *Chemical Engineering Journal*.



Electronics are one of the largest sources of plastic waste. Plastics from e-waste often contain harmful chemical additives that can pollute the environment if not disposed of properly. One of these contaminants is brominated flame retardants (BFRs), which make plastics fire-resistant. When e-waste plastics are discarded, these compounds leach into the environment. Additionally, heating the plastics during recycling releases toxic compounds.

To make e-waste plastics safer to recycle, researchers led by Associate Professor Lee Jong-Min from NTU's School of Chemistry, Chemical Engineering and Biotechnology

used a mixture of 1-propanol and heptane to dissolve and remove BFRs from ABS plastic, a type of plastic used in keyboards and laptop housings.

Because this solvent only dissolves BFRs, the recovery rate of plastics after removing BFRs was over 80%. The solvent does not change the properties of the plastics. The researchers hope that this method will facilitate clean plastic recovery and increase the recycling rate of e-waste plastics.

https://spap.jst.go.jp/asean/news/241203/topic_na_02.html