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Singapore researchers develop flame retardant removal process

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A published paper by researchers at Singapore's Nanyang Technological University (NTU) focuses on a method to remove brominated flame retardants (BFRs) from plastic before it is recycled.

BFRs are considered a toxic compound but are found in commonly used and recycled items including laptop computers, keyboards and smartphones, says NTU.

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NTU says a research team led by Associate Professor Lee Jong-Min at its School of Chemistry, Chemical Engineering and Biotechnology has come up with a way to make BFR-contaminated plastic recycling safer.

Using a mixture of 1-propanol and heptane, the team says its process dissolved and removed BFRs from acrylonitrile butadiene styrene (ABS), a resin type commonly used in the casings of keyboards and laptops.

According to NTU, the solvents dissolved predominantly BFRs, enabling the researchers to recover more than 80 percent of the plastic after removal of the BFRs. “The properties of the plastic were also unchanged,” states the university.

The project’s findings were published in a paper titled “Enhanced extraction of brominated flame retardants from e-waste plastics” in *Chemical Engineering Journal* and highlighted in *Pushing Frontiers*, NTU’s research and innovation magazine.

Last year, researchers at the same university announced their development of a way to convert plastic scrap into a scaffolding to serve as hosts for tumours in medical laboratory applications.

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