

Rubbish v.s. Rubbish

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Abstract

Disposal of polystyrene products (e.g. lunch box) is a hot pollution issue to be of great urgency. Incineration and land filling² seem to be inefficient ways to deal with such problems because of their intrinsic properties. Recently, studies showed that an organic extract named limonene from citric fruit peelings can dissolve used polystyrene foam under room temperature obviously¹. Steam distillation was used to overcome the volatility of limonene during the extraction by allowing it to evaporate at a lowered temperature³. Undoubtedly, limonene demonstrated its discrete property to dissolve polystyrene products and had been basically proved from present experiments that no toxic gas is evolved during the dissolution (which has to be further verified). However, the extraction was not economical as only a small portion of extract contained limonene. Further studies need to be done to increase the proportion of extract in certain amount of citric fruit peelings and find out the optimum limonene concentration on polystyrene dissolution with reasonable cost. Indeed, if such studies succeed, we can lead to a “win-win” situation that the fruit peelings wastes can be reused to recycle the polystyrene wastes by such environmentally-friendly alternative approach⁴.

Reference

1. <http://www.sony.com.hk/Electronics/corpcruise/news/news02.html>
2. http://www.epd.gov.hk/epd/tc_chi/environmentinhk/waste/waste_maincontent.html
3. <http://www.schoolscience.co.uk/downloads/ici/smellpracs.pdf>
4. http://www.chm.bris.ac.uk/webprojects2002/howells/twelve_green_chemistry_principle.htm