Electronic Supplementary Information (ESI)

Vacuum pyrolysis depolymerization of waste polystyrene foam into high-purity styrene using spirit lamp flame for convenient chemical recycling

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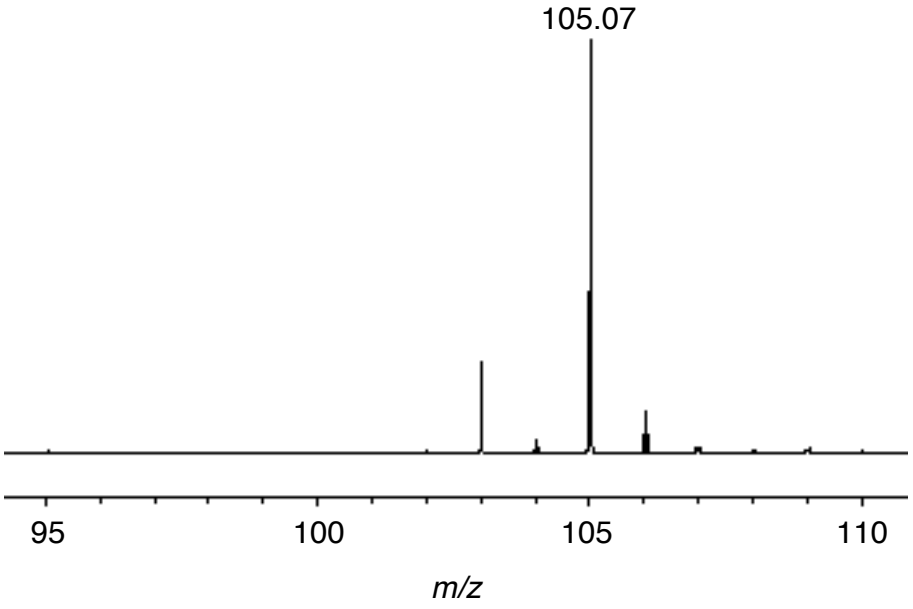


Figure S1. Mass spectrum of the styrene recovered by the vacuum pyrolysis of the waste PS foam. TOF-MS with the APCI method. Eluent: methanol. *m/z* = 105 (M+1).

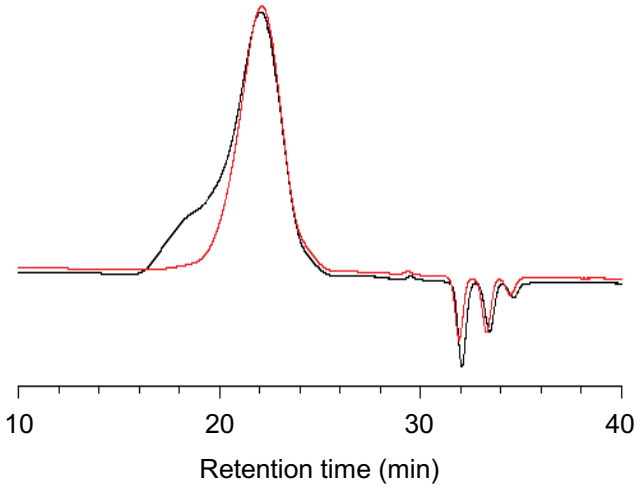
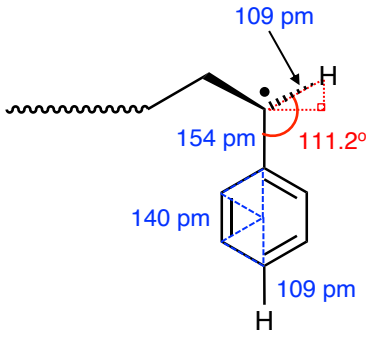


Figure S2. GPC profiles of polystyrenes prepared from the recovered styrene (red) and pure styrene (black). The polymerization was carried out in bulk using AIBN as the initiator (3 mol%) at 60 °C for 7 h under an N_2 atmosphere.



$109\,sin(111.2 - 90) + 154 + 140 \times 2 + 109 =$ **582.4 pm**

Figure S3. Calculation of the spatial dimensions of the PS chain end using bond lengths and angles.