

Supplementary information for

**Depolymerization of Vulcanized Poly(cyclopentene),
Poly(norbornene-*ran*-cyclopentene) and Poly(*endo*-
dicyclopentadiene-*ran*-cyclopentene) Rubbers by Ring-Closing
Metathesis Depolymerization towards Monomer Recycling**

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9507, Japan

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Fig. S1. ^{13}C NMR spectrum of poly(CP) described in Table 1.

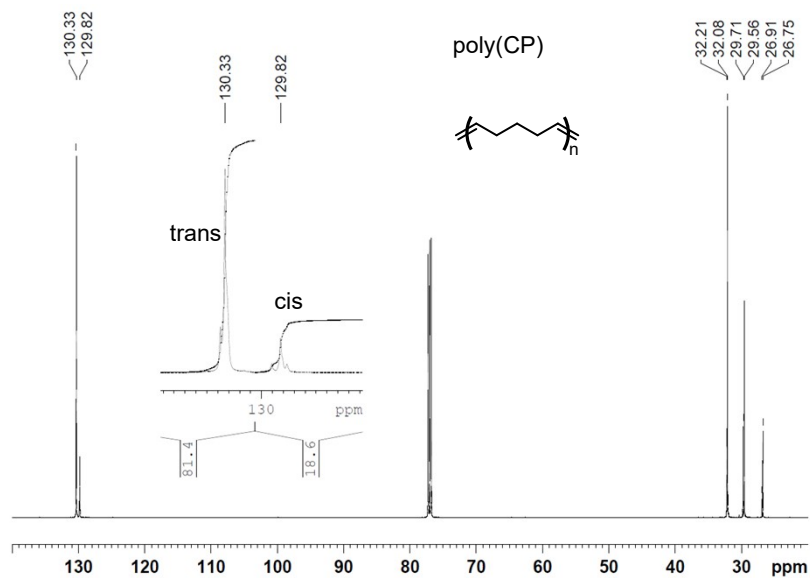


Fig. S2. ^{13}C NMR spectrum of poly(NB-*ran*-CP) described in Table 1.

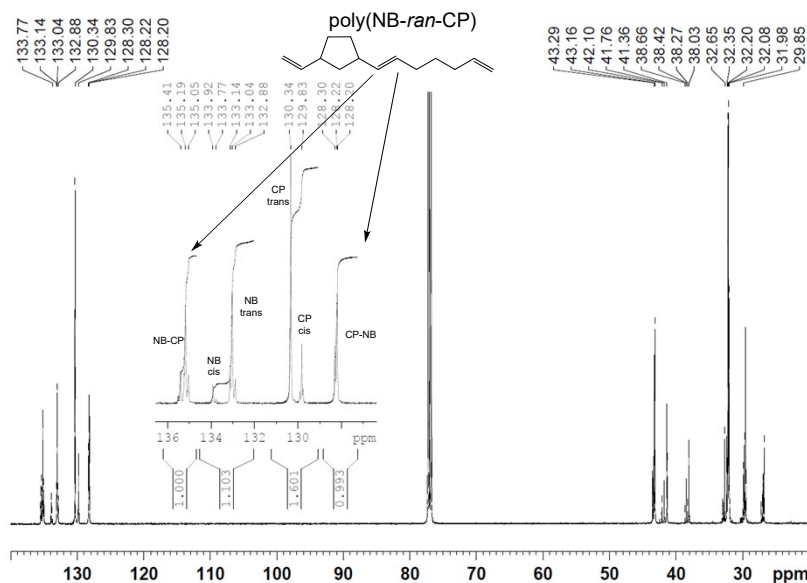


Fig. S3. ^{13}C NMR spectrum of poly(DCP-*ran*-CP) described in Table 1.

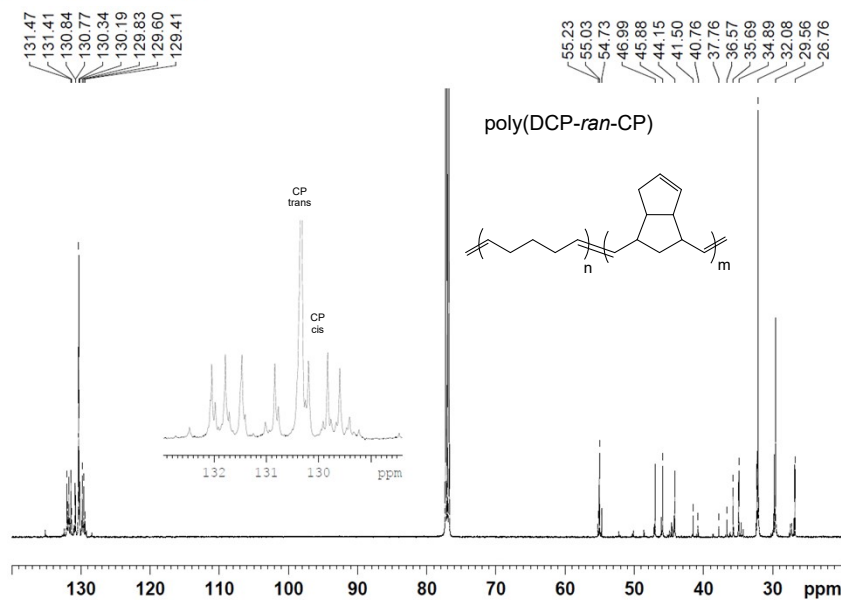


Fig. S4. GPC traces of pristine poly(CP) and toluene-extracted part of vulcanized poly(CP) in Table 3.

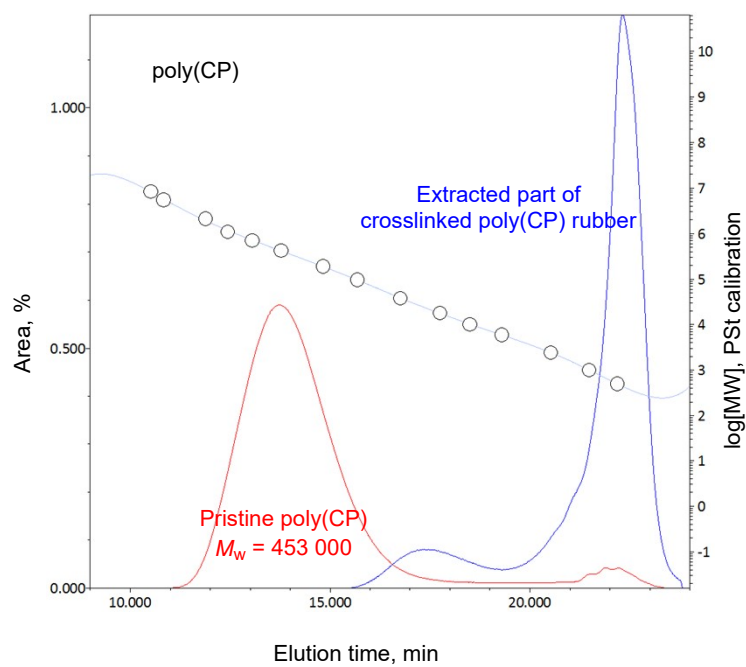


Fig. S5. GPC traces of pristine poly(NB-*ran*-CP) and toluene-extracted part of vulcanized poly(NB-*ran*-CP) in Table 3.

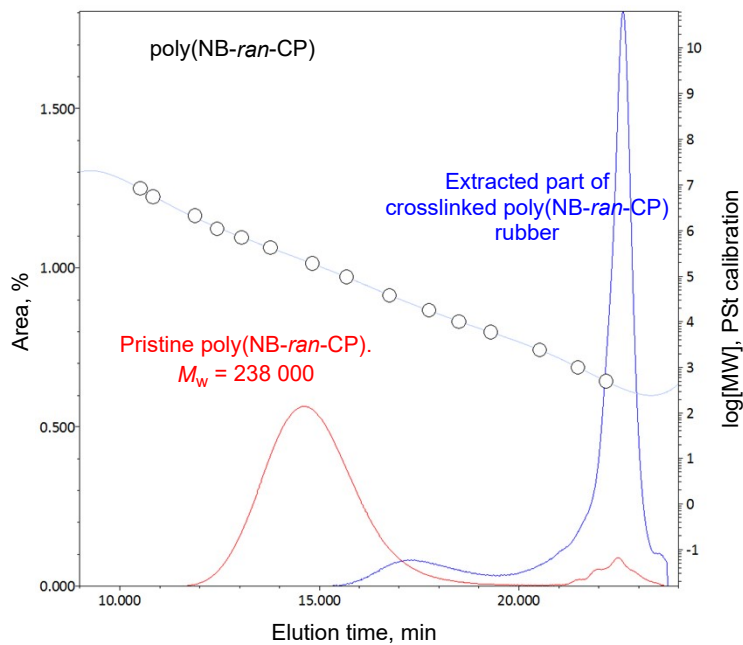


Fig. S6. GPC traces of pristine poly(DCP-*ran*-CP) and toluene-extracted part of vulcanized poly(DCP-*ran*-CP) in Table 3.

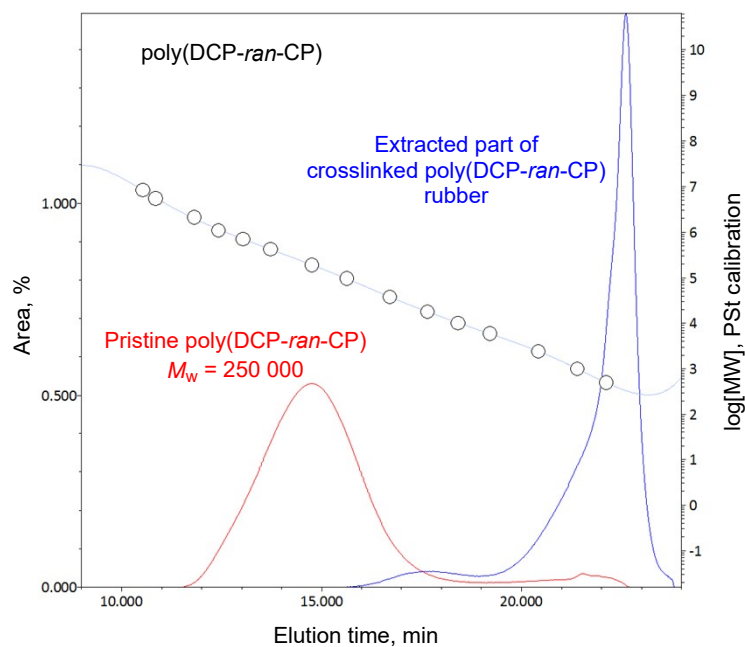


Fig. S7. ^1H NMR spectrum of non-volatile soluble part of depolymerization of poly(CP) described in Table 4.

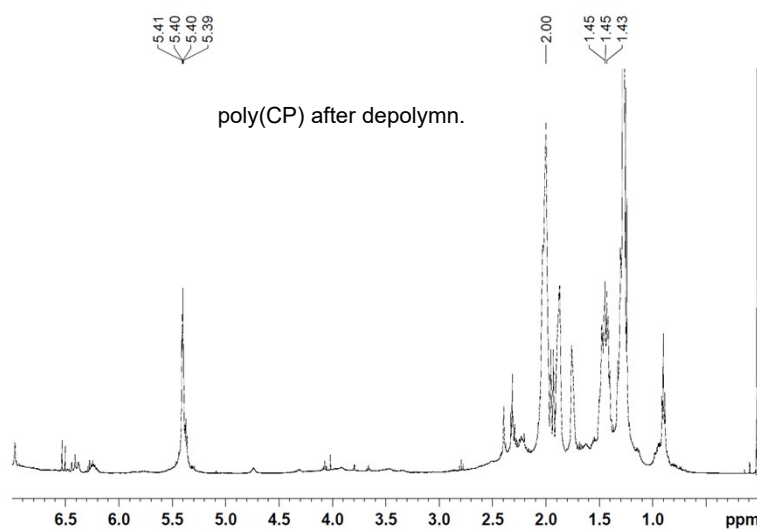
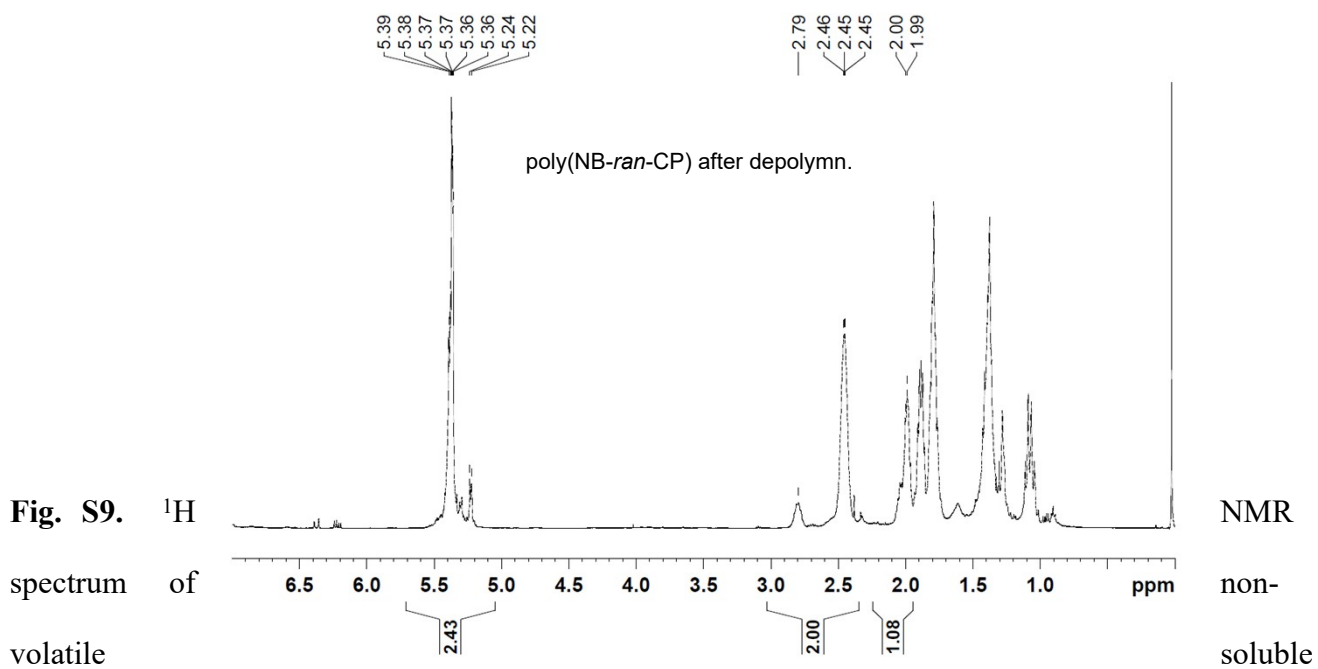


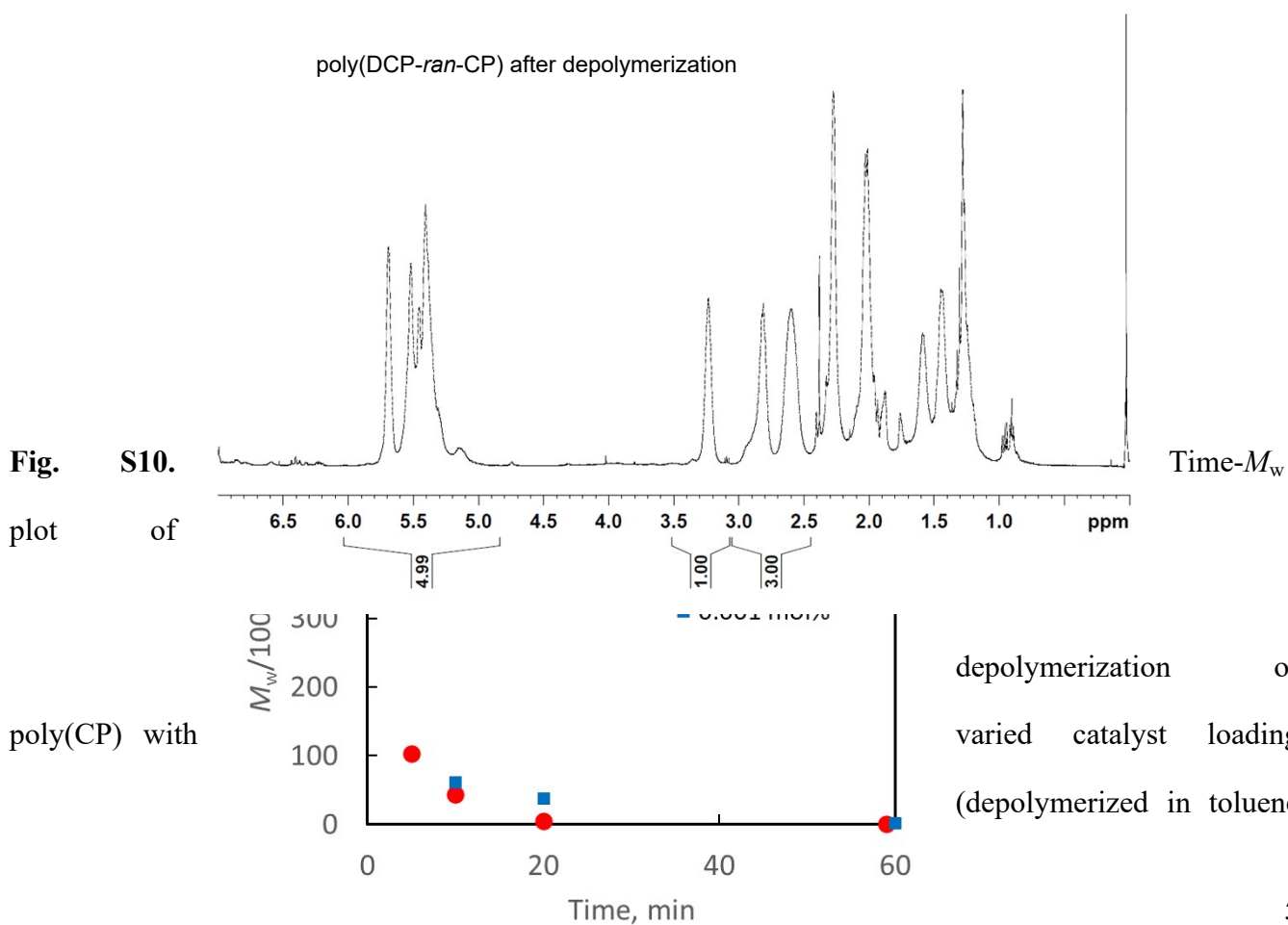
Fig. S8. ^1H NMR spectrum of non-volatile soluble

NMR spectrum of non-

part of depolymerization of poly(NB-*ran*-CP) described in Table 4.



part of depolymerization of poly(DCP-*ran*-CP) described in Table 4.



at 25 °C; [total polymer units] = 0.5 M, [(H₂IMes)(PCy₃)Cl₂Ru=CHPh]/[total polymer units]×100 = 0.05 or 0.001 mol%.).

Fig. S11. Time- M_w plot of depolymerization of poly(NB-*ran*-CP) with varied temperature (depolymerized in toluene; [total polymer units] = 0.5 M, [(H₂IMes)(PCy₃)Cl₂Ru=CHPh]/[total polymer units]×100 = 0.05 mol%.)

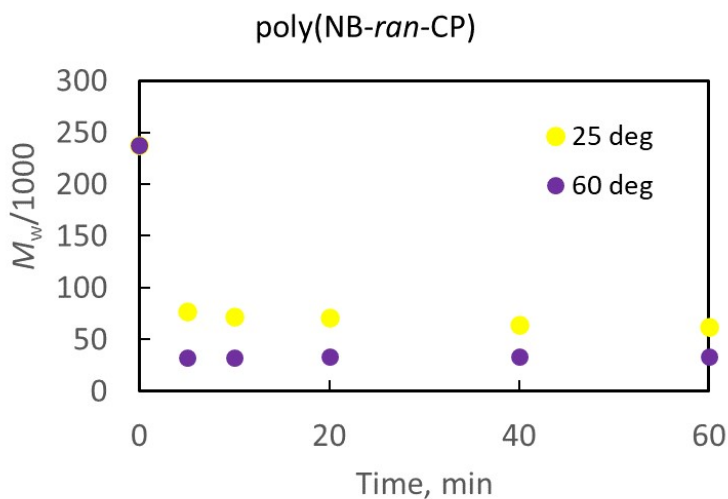


Fig. S12. Time- M_w plot of depolymerization of poly(DCP-*ran*-CP) with varied temperature (depolymerized in toluene; [total polymer units] = 0.5 M, [(H₂IMes)(PCy₃)Cl₂Ru=CHPh]/[total polymer units]×100 = 0.05 mol%.)

poly(DCP-ran-CP)

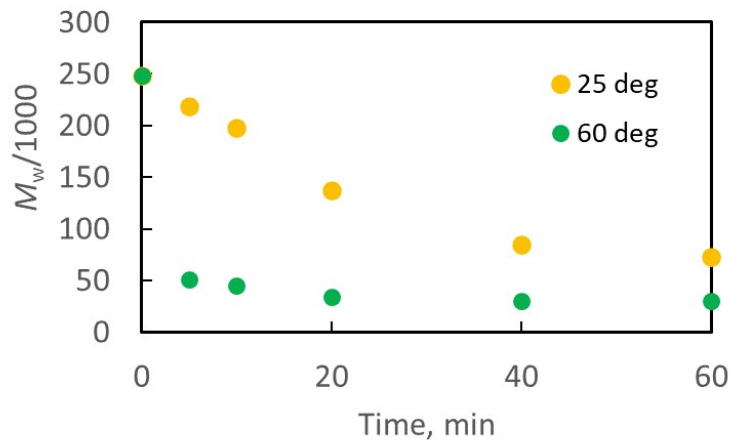


Fig. S13. ^1H NMR

volatile soluble part

depolymerization of

poly(CP) rubber described in Table 5.

spectrum of non-

of

vulcanized

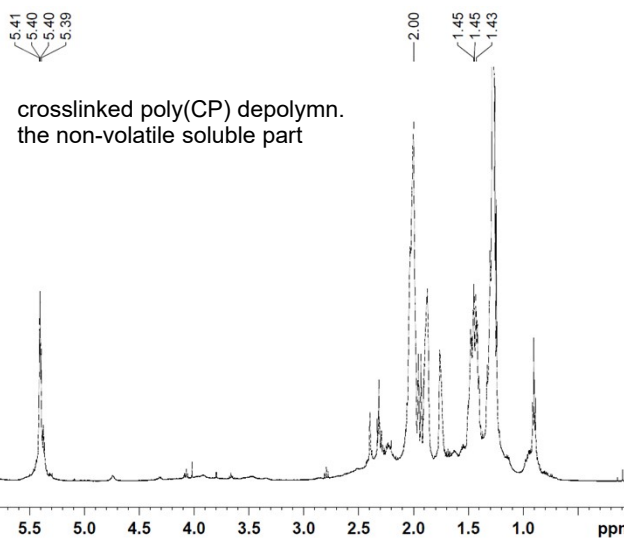


Fig. S14. ^1H

non-volatile

depolymerization of vulcanized poly(NB-ran-CP) described in Table 5.

NMR spectrum of

soluble part of

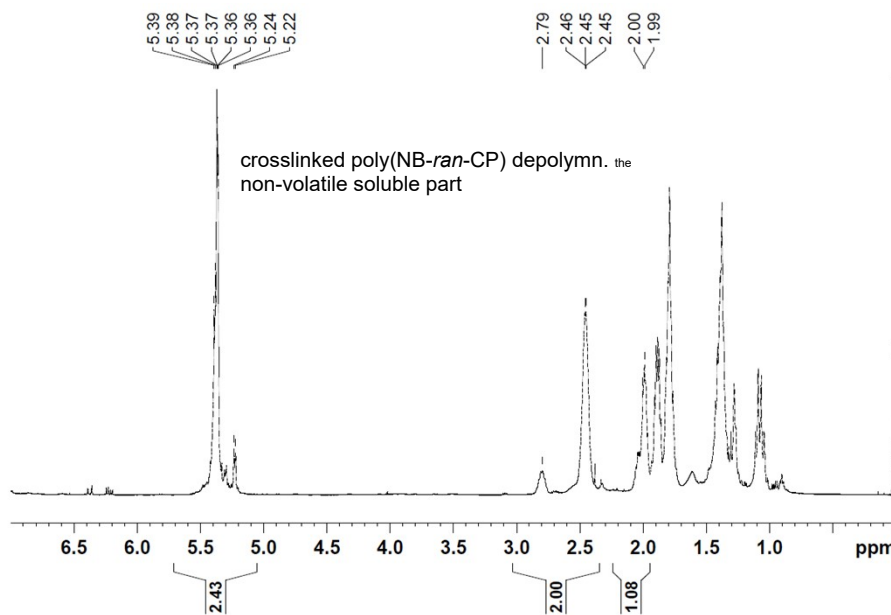


Fig. S15. ^1H NMR spectrum of non-volatile soluble part of depolymerization of vulcanized poly(DCP-*ran*-CP) described in Table 5.

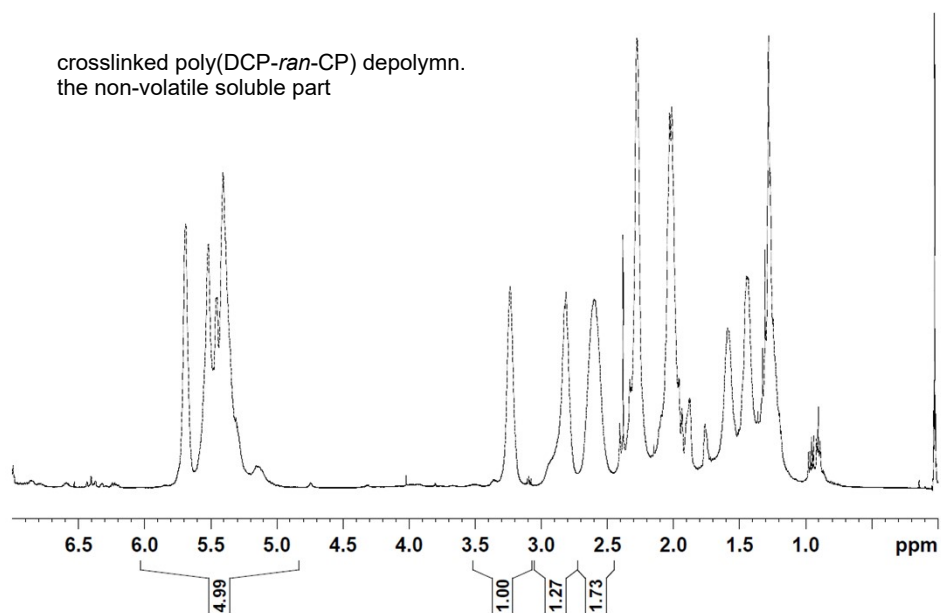


Fig. S16. Calibration curve of GC measurement to quantify cyclopentene recovery described in Experimental (Analyses of Polymer and Monomer).

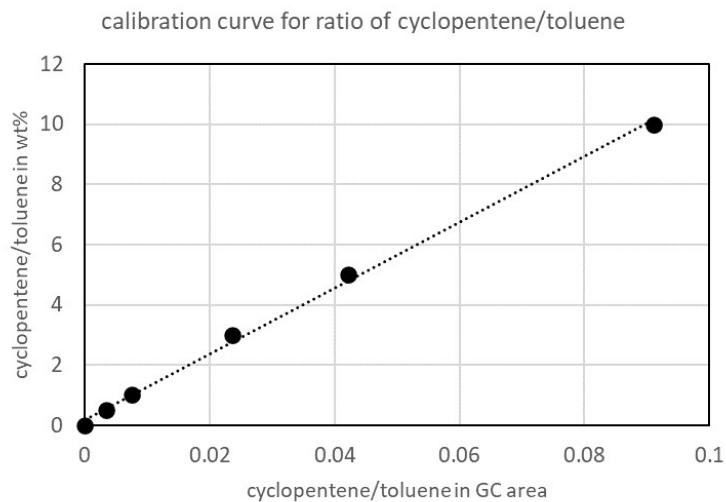
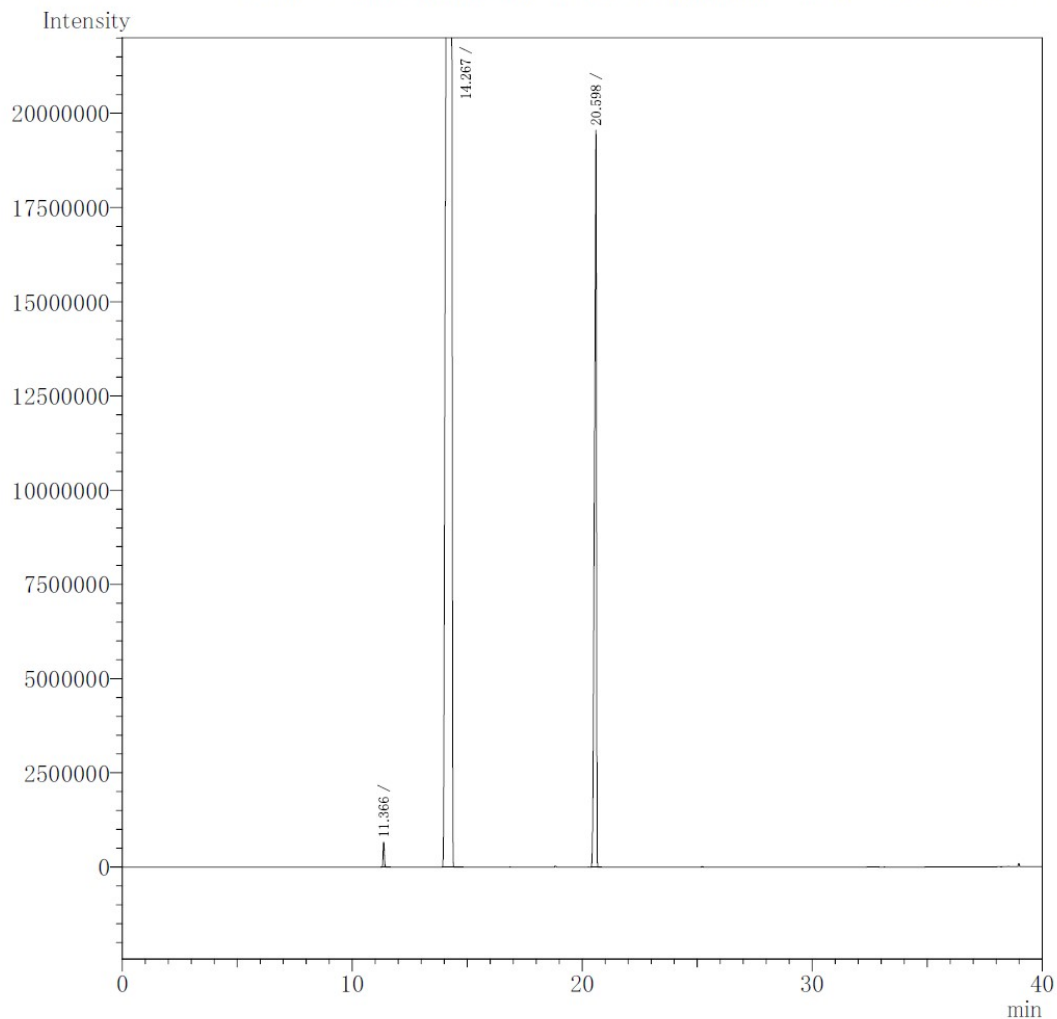


Fig. S17. a PDF file of a GC measurement report of depolymerization mixture of pristine poly(NB-*ran*-CP) described in Table 4.

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ピーク番号	保持時間	面積	高さ	濃度	単位	マーク ID#	化合物名
1	11.366	2386009	661001	0.254			
2	14.267	816144849	62353845	86.745			
3	20.598	122318937	19532445	13.001			
合計		940849795	82547291				