Structure and thermal properties of phosphorus-containing polyol synthesized from cardanol

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SI.1 The FT-IR spectra of 9,10-dihydro-9-oxa-10-phosphaphenanthrene-10-oxide (DOPO)

Figure SI.1 shows the FT-IR spectra of DOPO. In FT-IR analyses on DOPO, the stretching vibration at 2385 cm\textsuperscript{-1} is for P—H,\textsuperscript{3} the stretching vibration disappeared in PCP, implying that the reaction of P(O)—H of DOPO with cardanol diol (ECD) had occurred.

SI.2 The \textsuperscript{1}H NMR spectra of DOPO

Figure SI.2 shows the \textsuperscript{1}H NMR spectra of the DOPO, in \textsuperscript{1}H NMR analyses on DOPO, the peak at \(\delta 9.00\) is associated with the P—H,\textsuperscript{3} which disappeared in the \textsuperscript{1}H NMR spectrum of the resulting cardanol polyols (PCP). This result indicates that the epoxy groups of ECD was reacted with DOPO.

References


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