

Low dielectric material from novel core-fluorinated polybenzoxazine

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Differential scanning calorimetry (DSC) was performed by a TA Instruments Q-2000 apparatus (USA) at a heating rate of 20 K/min. The gel fraction of the FPBO sample was found by change its weight before and after extraction with acetone for 48 h at 56 °C [1]. The thermo-oxidative destruction of polymer was studied *via* thermogravimetric analysis on a TA Instruments Q-50 apparatus (USA). A heating rate of 20 K/min within the temperature range from 25 to 800 °C was applied. The dielectric characteristics of FPBO were investigated by the method of dielectric relaxation spectroscopy using an alternating-current bridge P5083. The measurements were performed at room temperature in the frequency range $10^2 - 10^5$ Hz. The cell with flat and polished stainless steel electrodes was used for the measurements. The sample was placed between electrodes. The radius of the sample was 7.03 mm, the thickness of the sample is 260 μm . The percentage of water absorption of cured sample was calculated according to the previously described procedure [1]. The cured sample was dried under vacuum at 80 °C for 12 h before placing in the environments of water at room temperature for one day and one week. Then, the percentage of water absorption of cured sample was determined gravimetrically.

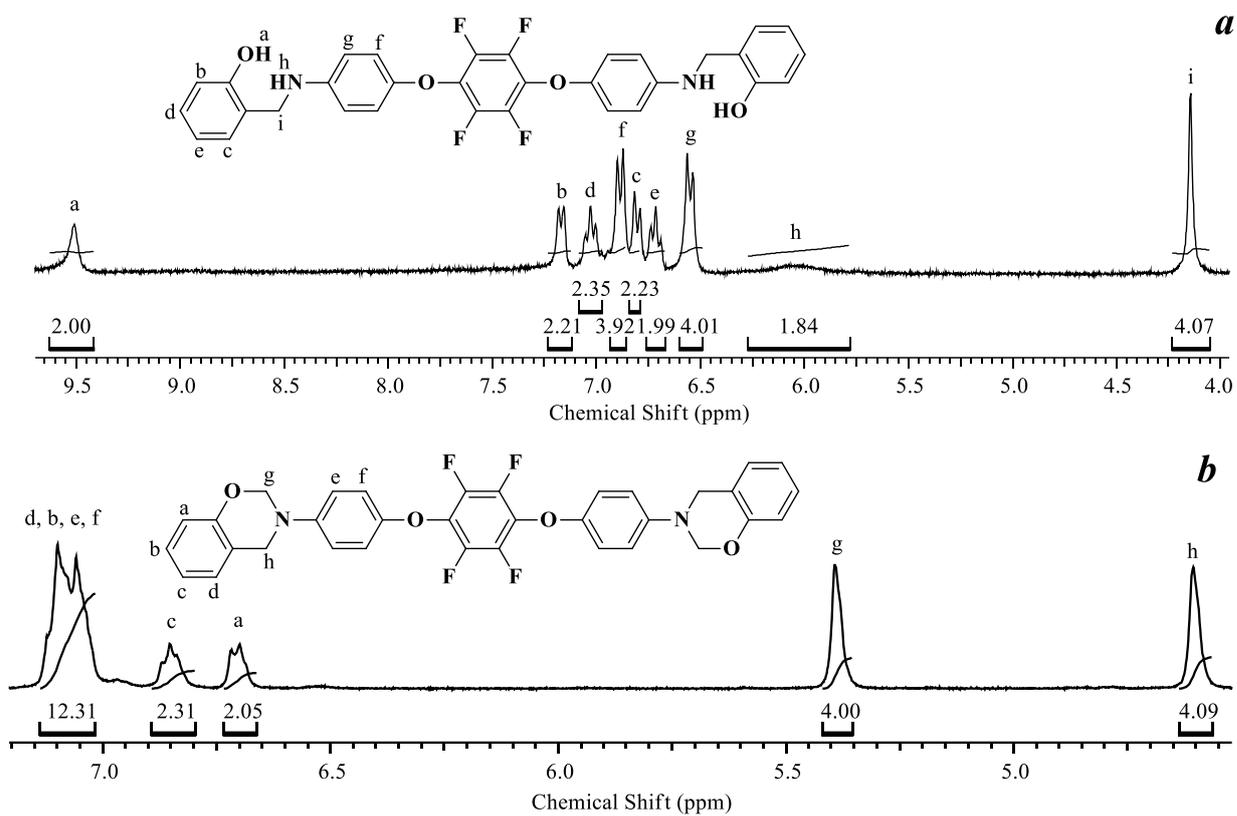


Figure S1 ^1H NMR spectra of monomers **2** (a) and **3** (b).

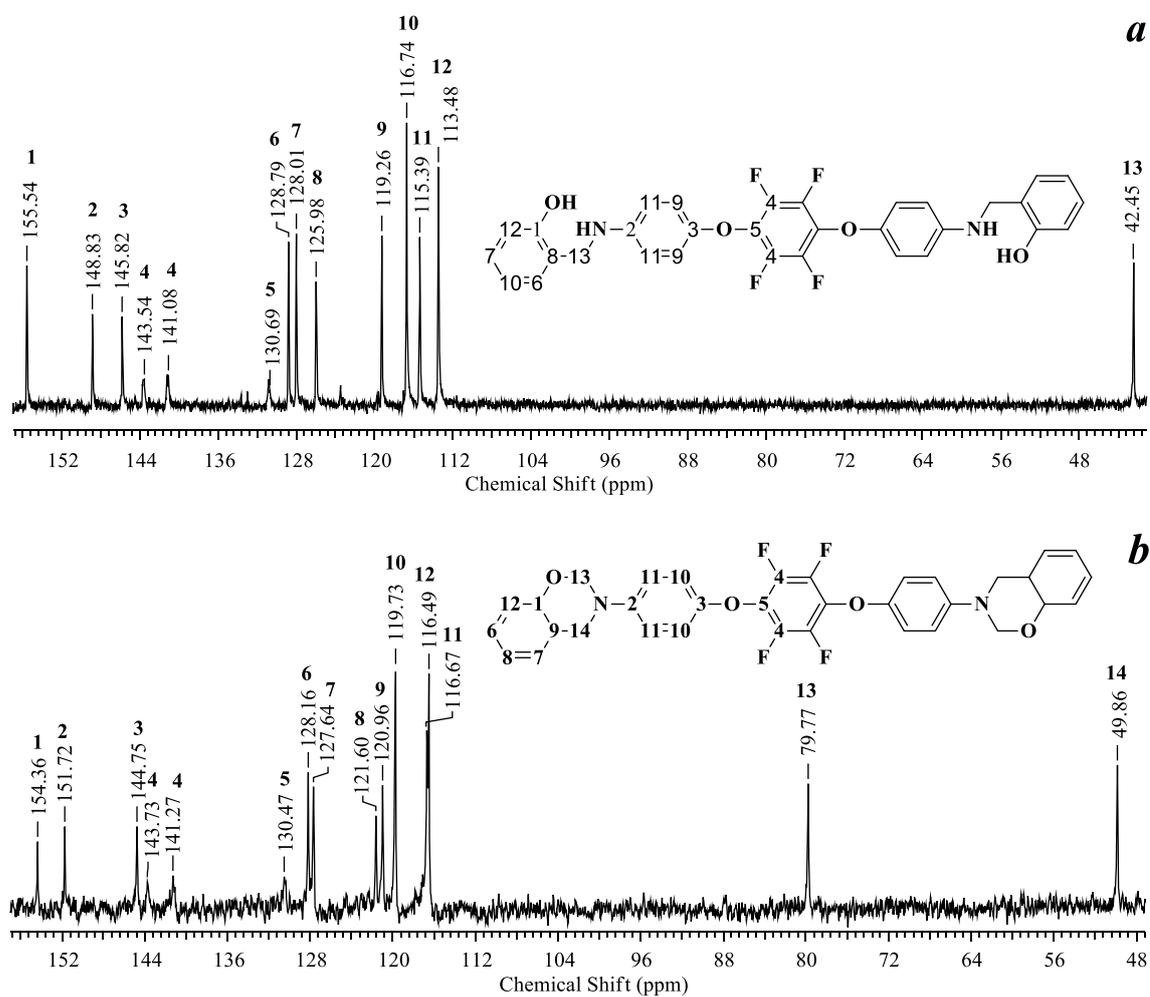


Figure S2 ^{13}C NMR spectra of monomers **2** (a), **3** (b).

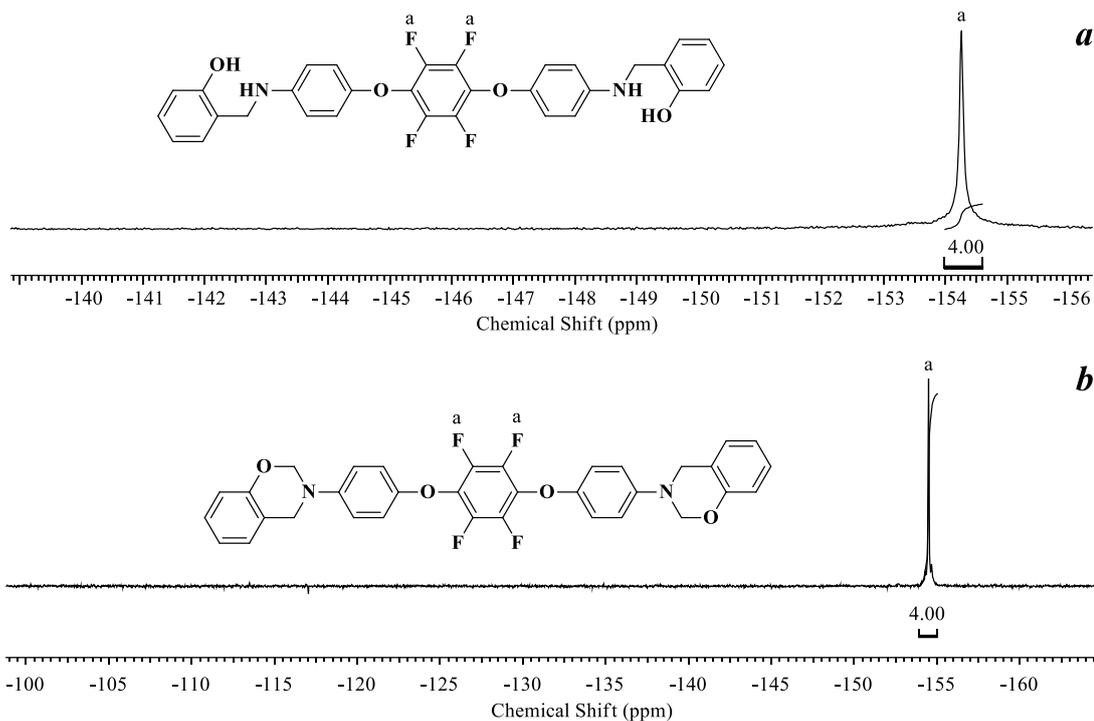


Figure S3 ^{19}F NMR spectra of monomers **2** (spectrum *a*), **3** (spectrum *b*).

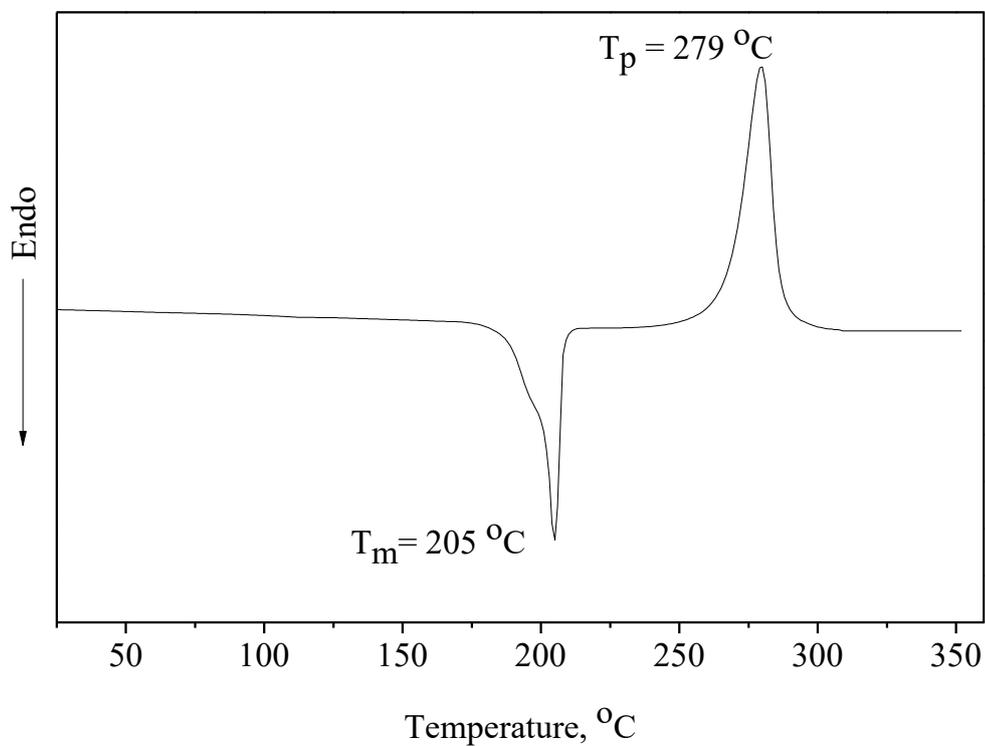


Figure S4 DSC thermogram of monomer **3**.

References

- 1 Y.-C. Su and F.-C. Chang, *Polymer*, 2003, **44**, 7989.