## Supplementary Material

# Cross-linked metathesis polynorbornenes based on nadimides bearing hydrocarbon substituents: synthesis and physicochemical properties

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## X-ray diffraction data for NBI

**Table S1.** Crystal data and structure refinement details for **NBI**.

| | **NBI** |
|---|---|
| Empirical formula | $C_{28}H_{34}N_2O_4$ |
| Formula weight | 462.57 |
| T, K | 120 |
| Crystal system | Orthorhombic |
| Space group | $P2_12_12_1$ |
| Z | 4 |
| a, Å | 7.0666(12) |
| b, Å | 10.2915(17) |
| c, Å | 32.255(5) |
| α, ° | 90 |
| β, ° | 90 |
| γ, ° | 90 |
| V, Å$^3$ | 2345.7(7) |
| $D_{calc}$ (g cm$^{-1}$) | 1.310 |
| μ, cm$^{-1}$ | 0.87 |
| F(000) | 992 |
| $2\theta_{max}$, ° | 58 |
| Reflections measured | 27656 |
| Independent reflections | 6207 |
| Observed reflections [I > 2σ(I)] | 4751 |
| Parameters | 311 |
| R1 | 0.0634 |
| wR2 | 0.1338 |
| GOF | 1.049 |
| $\Delta\rho_{max}$/ $\Delta\rho_{min}$ (e Å$^{-3}$) | 0.279/-0.236 |

# IR spectra of the synthesized monomers and polymers

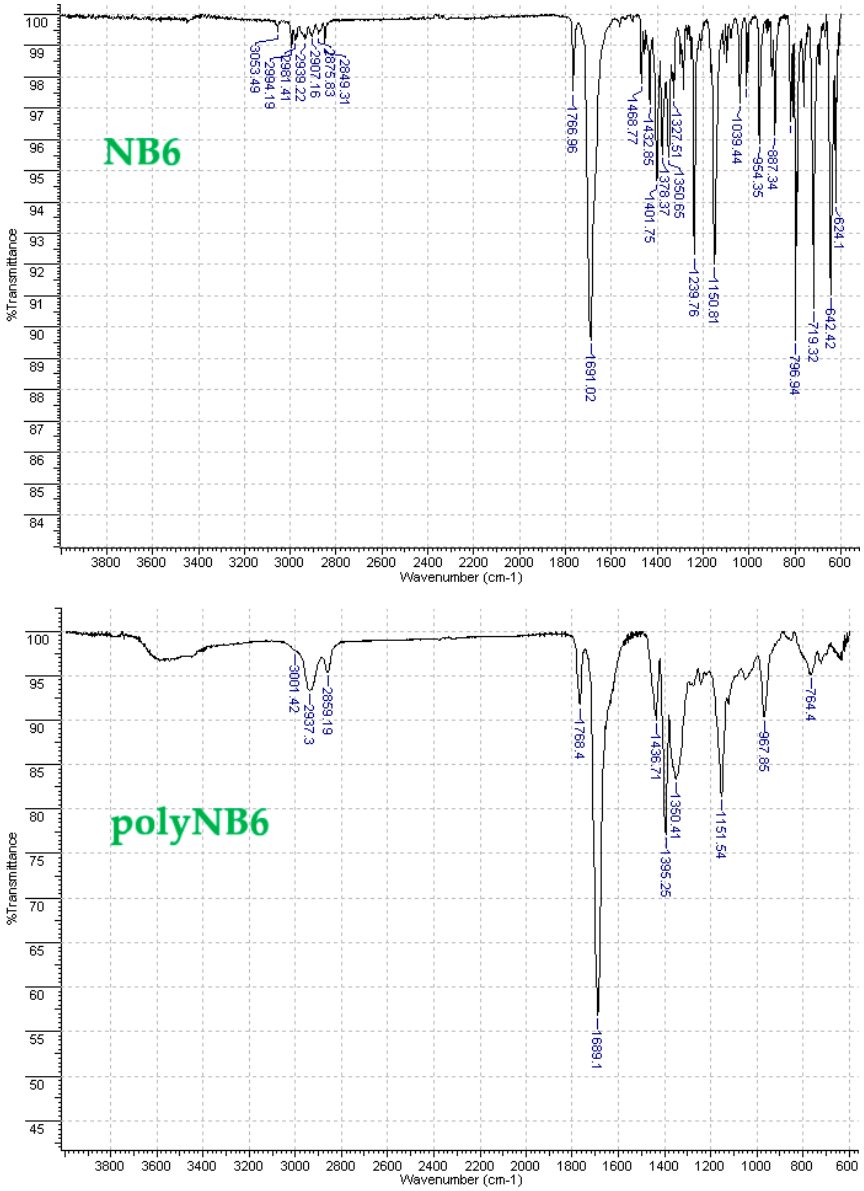



**Figure S1.** IR spectra (ATR) of **NB6** and the metathesis homopolymer from **NB6**.

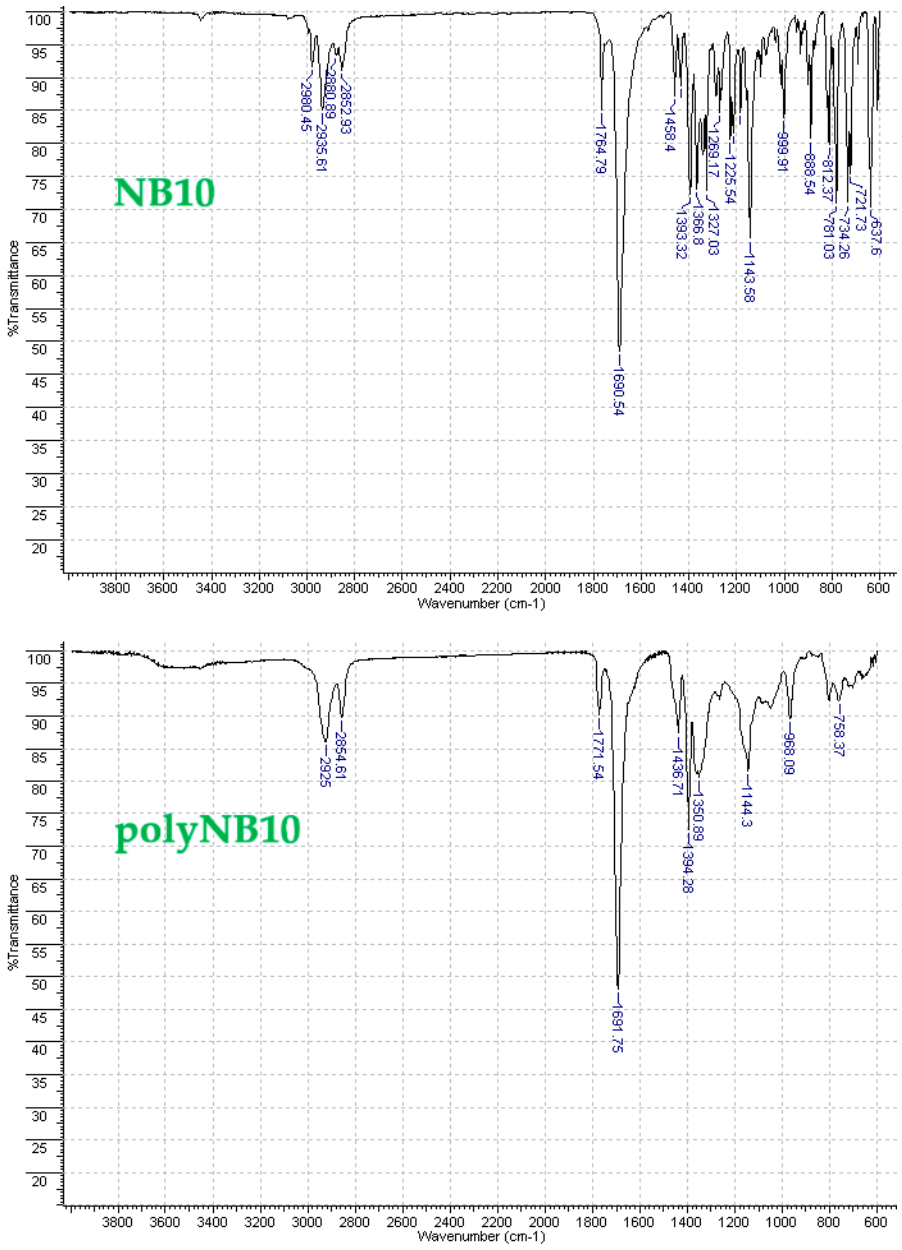



**Figure S2.** IR spectra (ATR) of **NB10** and the metathesis homopolymer from **NB10**.

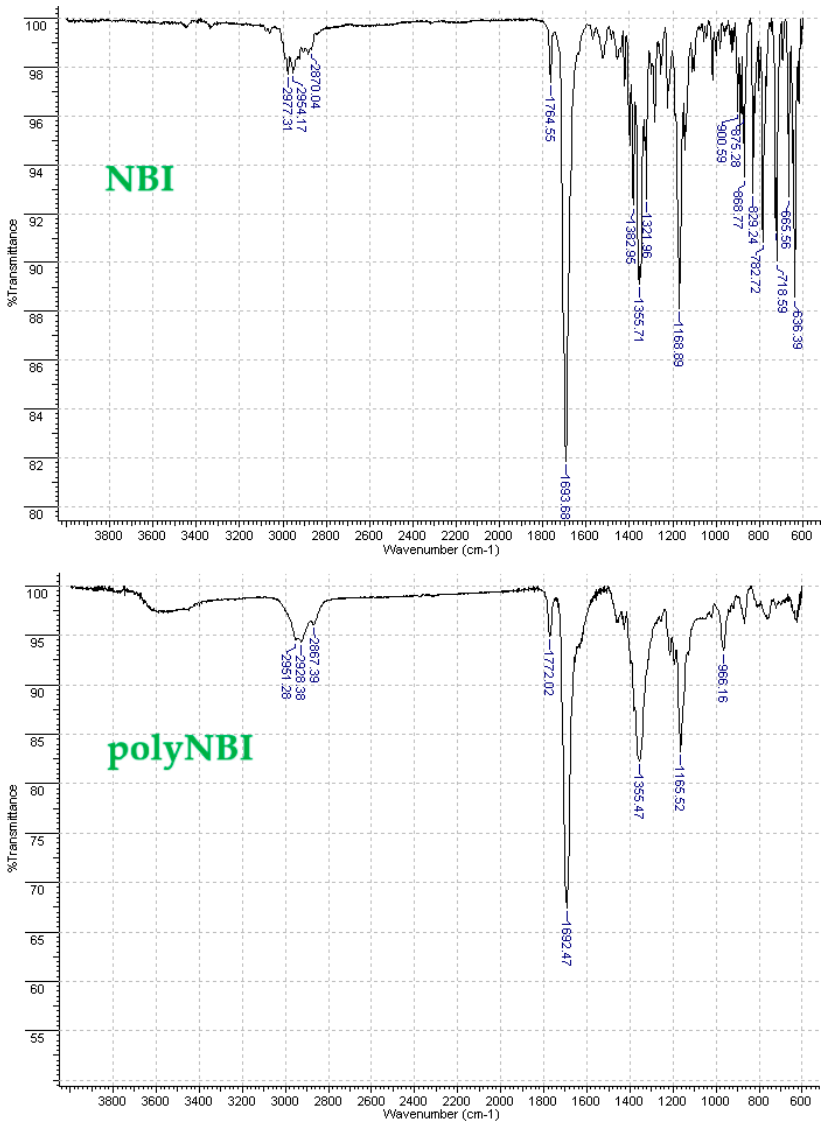



**Figure S3.** IR spectra (ATR) of **NBI** and the metathesis homopolymer from **NBI**.

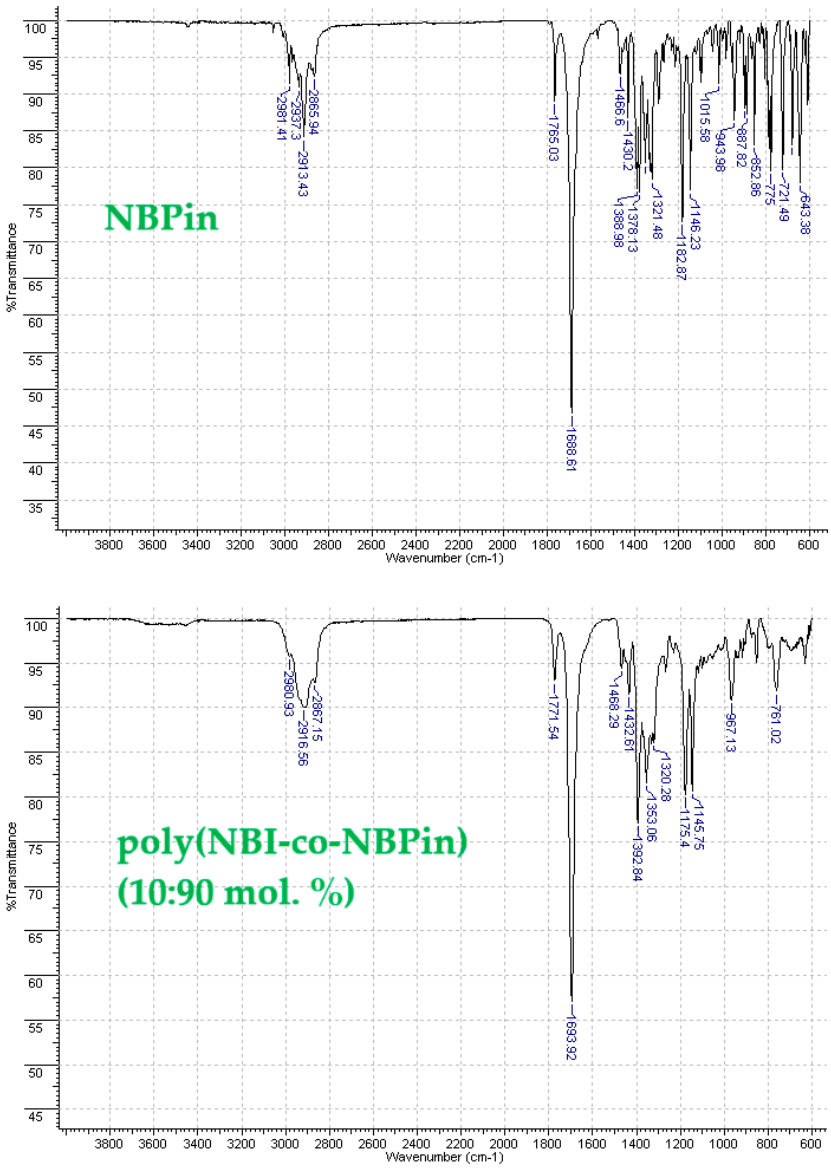



**Figure S4.** IR spectra (ATR) of **NBpin** and the metathesis comopolymer from **NBI** and **NBpin**.

## The photo of polymer films



**Figure S5.** A photograph of a polymer film based on poly(**NBpin**-*co*-**NBI**) (90 : 10 mol.%) after the emersion in acetone for 24 h (the film was stretched along the opposite corners using tweezers. The film stretches but does not break down).