Supporting Information

Amide transformation as an efficient postpolymerization modification approach

for the synthesis of functional polyacetylenes

Juntao Ren,^{a,b} Heng Liu,^a Xuequan Zhang,^a Yanming Hu,^{*c} Guangyuan Zhou^{*c} and

Toshio Masuda^d

Contents

- Scheme S1. Synthesis of M1 and P1
- Fig. S1. IR spectra of M1 and P1
- Fig. S2. IR spectra of P1 and P1e
- Fig. S3. ESR spectrum of P1e
- Fig. S4. Dependence of capacity on cycle number of P1e, Charging and discharging

were repeated at a 50 mA/g current density in a range of 3.3-4.4 V cell voltage.

Fig. S5. ¹H and ¹³C NMR spectra of M1

- Fig. S6. IR spectrum of P1a
- Fig. S7. ¹H NMR and IR spectra of P1b
- Fig. S8. ¹H NMR and IR spectra of P1c
- Fig. S9. IR spectrum of P1d

.

Fig. S10. GPC curves of P1 and P1a-d



Scheme S1. Synthesis of M1 and P1.



Fig. S1. IR spectra of M1 and P1.



Fig. S2. IR spectra of P1 and P1e.



Fig. S3. ESR spectrum of P1e.



Fig. S4. Dependence of capacity on cycle number of **P1e**, Charging and discharging were repeated at a 50 mA/g current density in a range of 3.3-4.4 V cell voltage.





Fig. S5. $^1\mathrm{H}$ and $^{13}\mathrm{C}$ NMR spectra of M1.



Fig. S6. IR spectrum of P1a.



Fig. S7. ¹H and IR spectra of P1b.



Fig. S8. ¹H and IR spectra of P1c.



Fig. S9. IR spectrum of P1d.



Fig. S10. GPC curves of P1 and P1a-d.