

**Insight in the degradation of polyquinone-based cathode material
in lithium-organic battery under cycling**

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Table S1 Chemical analysis data for **PHQM** and **PBQM**.*

	C	H
PHQM:		
Calc.(%) for (C ₇ H ₆ O ₂) _n	68.85	4.95
Found (%)	67.87	5.13
PBQM:		
Calc.(%) for (C ₇ H ₄ O ₂) _n	70.00	3.36
Found (%)	68.97	3.47

*Analysis was performed using Elementar Vario Micro cube instrument.

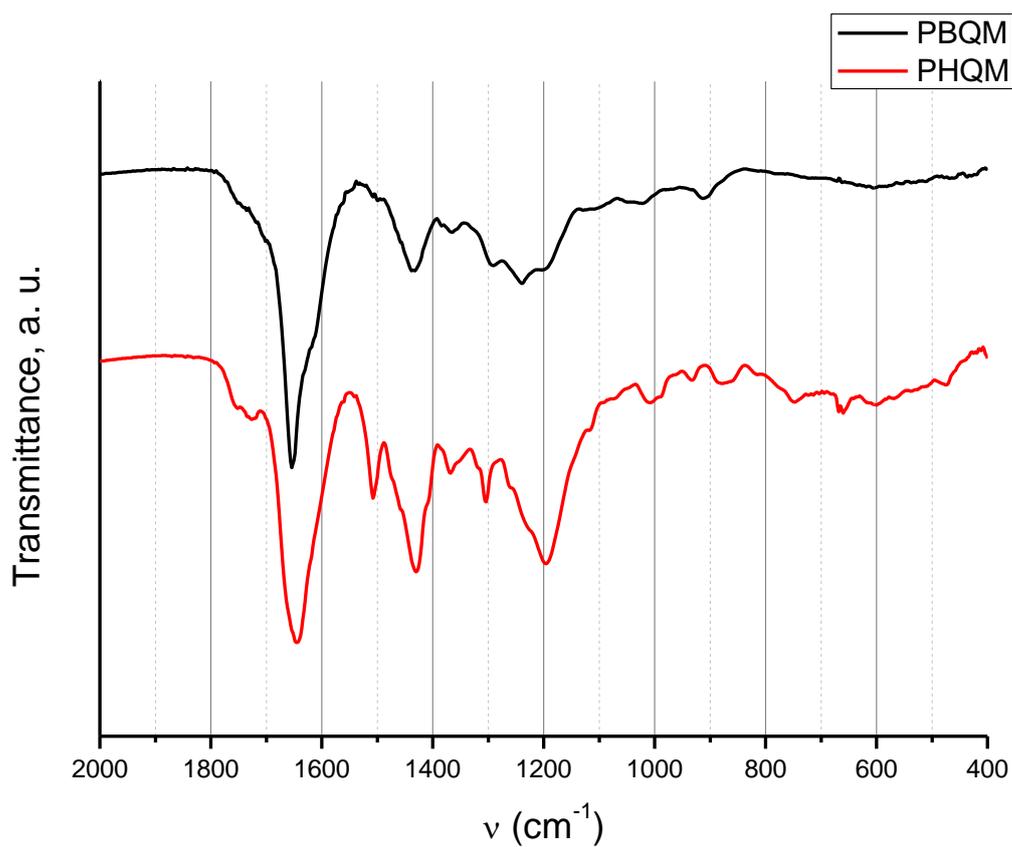


Figure S1 FTIR spectra of **PHQM** and **PBQM**.

PHQM ν , cm^{-1} : 1726 (low) (comb); 1646 (st.) (ip ar); 1508 (med.) (νCOH); 1430 (st.) (δCH_2); 1368 (low) (ip ar); 1304 (med.) (δipOH); 1196 (st.) (δCOH); 1008 (low) (oop ar); 880 (low)(oop ar); 748 (low) (δCH_2).

PBQM ν , cm^{-1} : 1654 (st.) (νCO); 1436 (med.) (δCH_2); 1290 (low) (γ ip); 1240 (med.) (γ ip); 1022 (low) (γ oop); 912 (low) (γ oop).

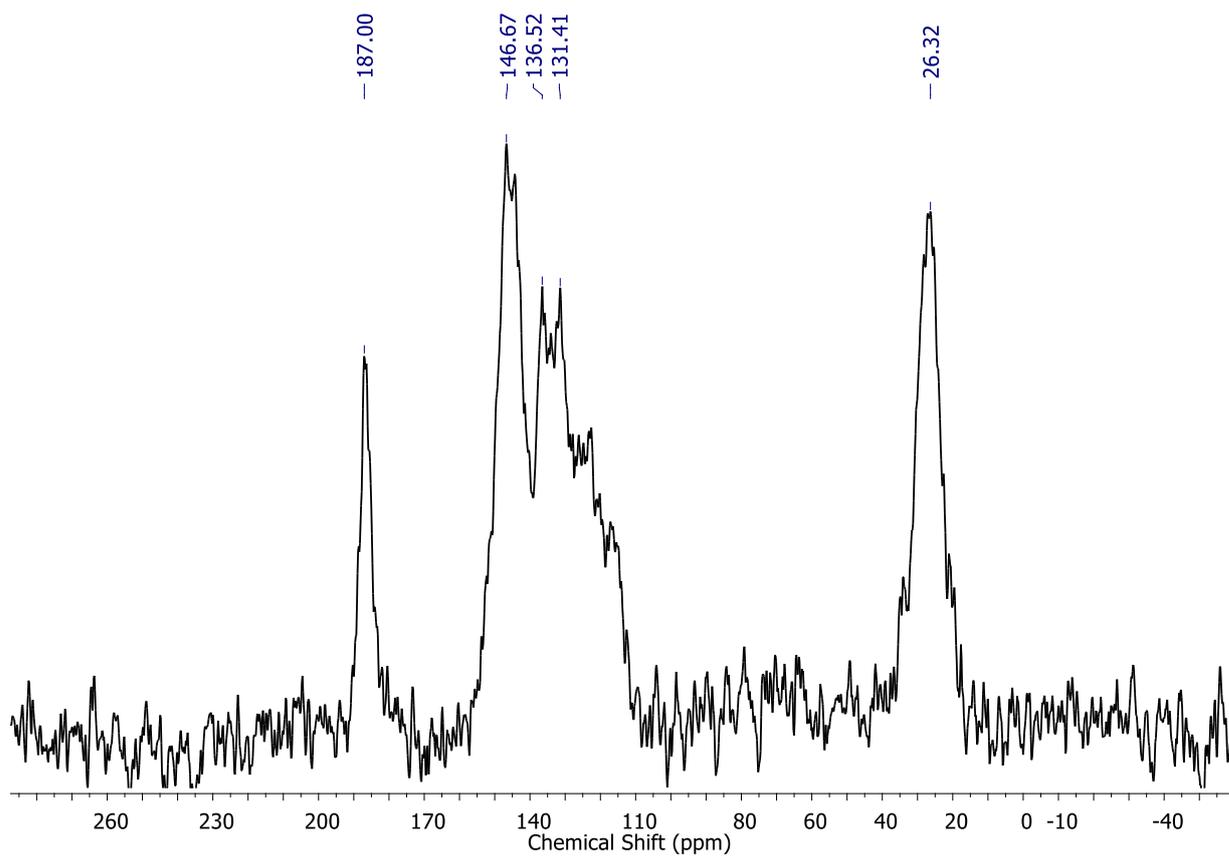


Figure S2 ^{13}C cp solid state NMR spectrum of **PBQM** (15 kHz).