Electronic Supplementary Material (ESI) for Dalton Transactions.

Gas-phase deposition of di- and tetra-lithium salts of 2,5-dihydroxyterephthalic acid

Supporting information

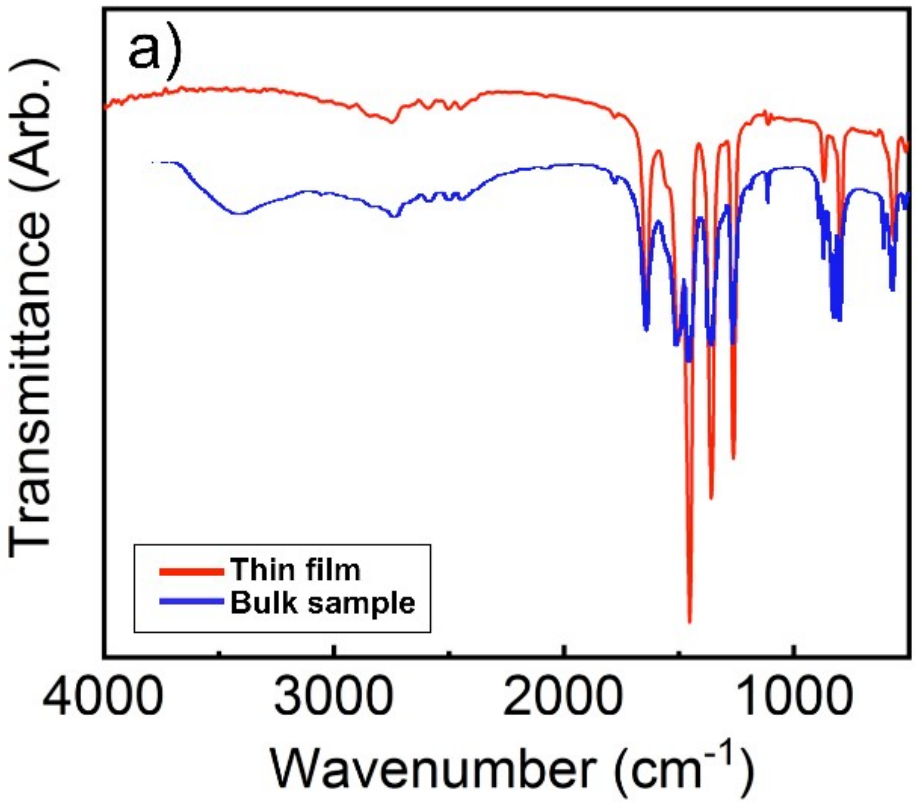

Figure S1. FTIR spectra for a Li_2DHTP film and a previously reported bulk sample[1,2] for comparison.

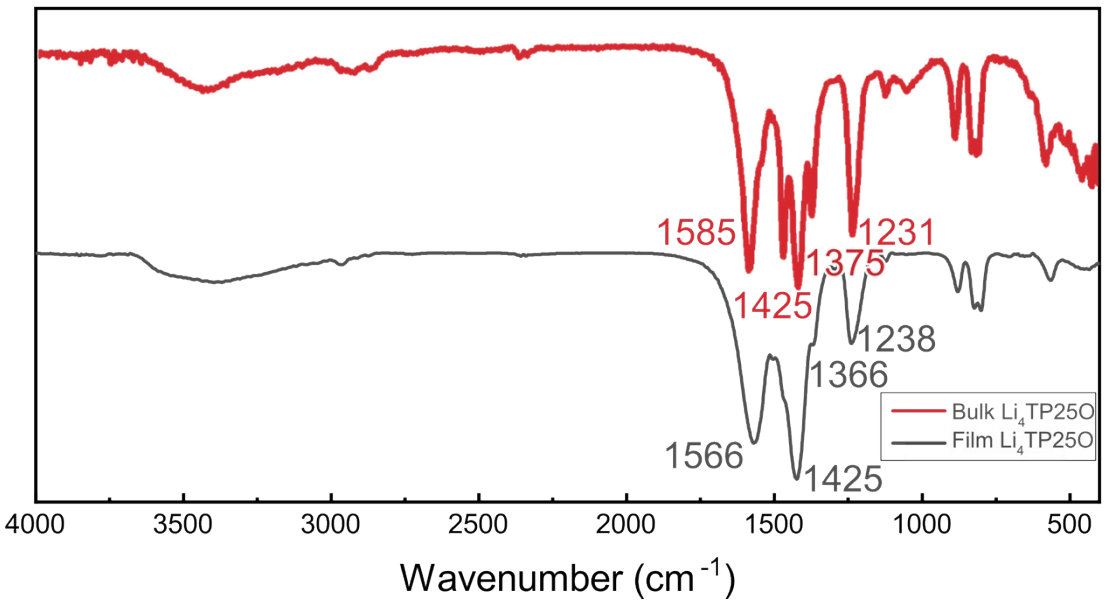

Figure S2. FTIR spectra for a Li_4DHTP film (grown with 64 s Li(thd) pulses) and a previously reported bulk Li_4DHTP sample. The peak at 1585 cm^{-1} is assigned to υ_{as} of the carboxylate, 1425 cm^{-1} to the benzene ring stretching modes, 1375 cm^{-1} to υ_s of the carboxylate and 1231 cm^{-1} to O-Li of the alkoxide.[3]

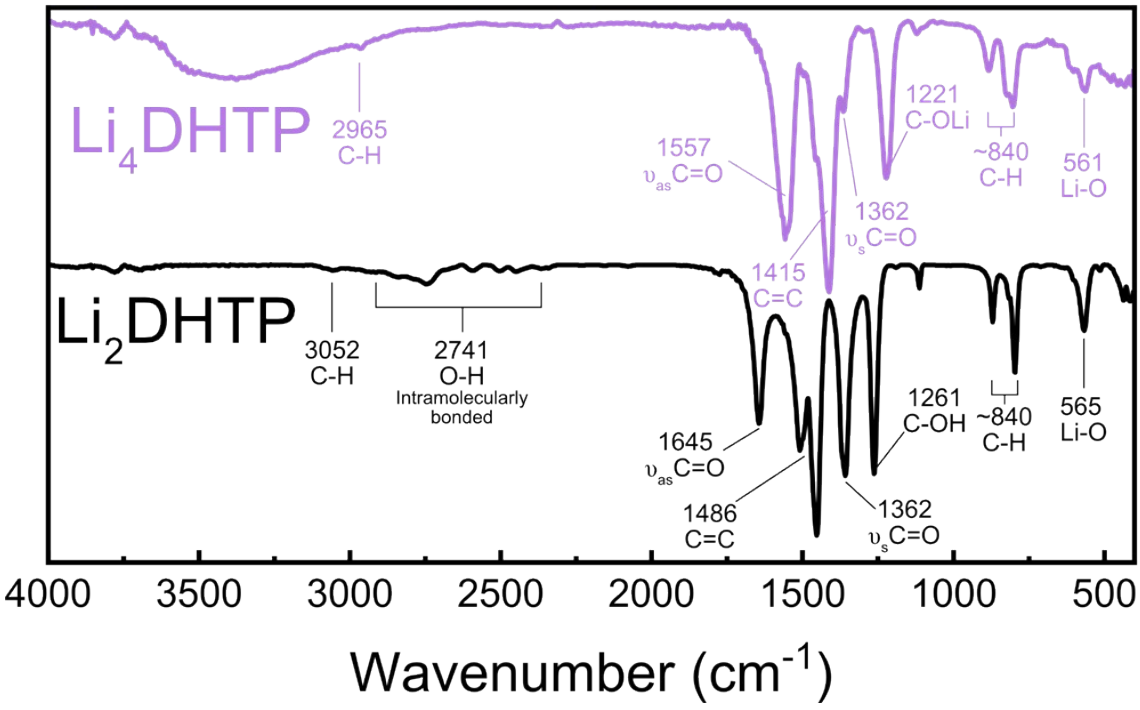

Figure S3. FTIR peak interpretations for Li_2DHTP (bottom) and Li_4DHTP (up).

Table S1. Thirteen example depositions with different combinations of pulse lengths. Many of these depostions were repeated multiple times in the laboratory. The last paragraph indicates whether the GIXRD pattern yielded any diffraction peaks.

Deposition	Lithium pulse length (s)	Organic pulse length (s)	Crystalline (Yes/No)
1	4	15	Yes
2	6	15	Yes
3	10	15	Yes
4	32	10	No
5	64	10	No
6	32	32	Yes
7	64	64	Yes
8	4	64	Yes
9	4	32	Yes
10	4	10	Yes
11	8	10	No
12	16	10	No
13	32	10	No

References

1 S. Renault, V. A. Oltean, M. Ebadi, K. Edström and D. Brandell, *Solid State Ionics*, 2017, **307**, 1–5.

2 Q. Deng, J. Xue, W. Zou, L. Wang, A. Zhou and J. Li, *J. Electroanal. Chem.*, 2016, **761**, 74–79.

3 S. Renault, S. Gottis, A.-L. Barrès, M. Courty, O. Chauvet, F. Dolhem and P. Poizot, *Energy Environ. Sci.*, 2013, **6**, 2124.