## **Supplementary Information**

## Liquid-crystal-imprinted synthesis for chiral polypyrrole without a chiral centre using a double-step method of spark-discharge oligomerisation—electrochemical polymerisation

Ryo Miyashita,<sup>a</sup> Aoi Tokutake,<sup>a</sup> Shigeki Nimori<sup>b</sup> and Hiromasa Goto\*<sup>a</sup>

<sup>a</sup>Department of Materials Science, Institute of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Ibaraki 305-8573, Japan.

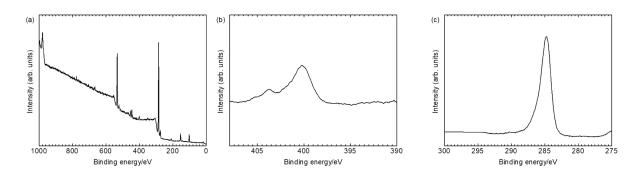
<sup>b</sup>National Institute for Materials Science (NIMS), Tsukuba Magnet Laboratory, Sakura, Tsukuba 3-13, Japan

Email: gotoh@ims.tsukuba.ac.jp

**Table S1.** Molecular weights of pyrrole oligomers irradiated with spark discharge.

	Irradiation time of spark discharge		
	1 min	3 min	10 min
<i>M</i> <sub>n</sub>	298	483	543
$M_{w}$	332	530	558
$M_{\rm w}/M_{\rm n}$	1.12	1.10	1.03

 $M_n$ : the number- average molecular weight.  $M_w$ : the weight-average molecular weight.  $M_w/M_n$ : the molecular weight distribution.



**Figure. S1.** X-ray photoelectron spectroscopy result of PPy/TWO-STEP. (a) Full scale in the range of 1000–0 eV, selected scales in the range of (b) 408–390 eV corresponding to the signal of N atom, and (c) 300–275 eV corresponding to the signal of C atom.

**Table S2.** Atomic concentration of elements in PPy/TWO-STEP.

	C <sub>1s</sub>	N <sub>1s</sub>
Atomic concentration (%)	79.6	20.4

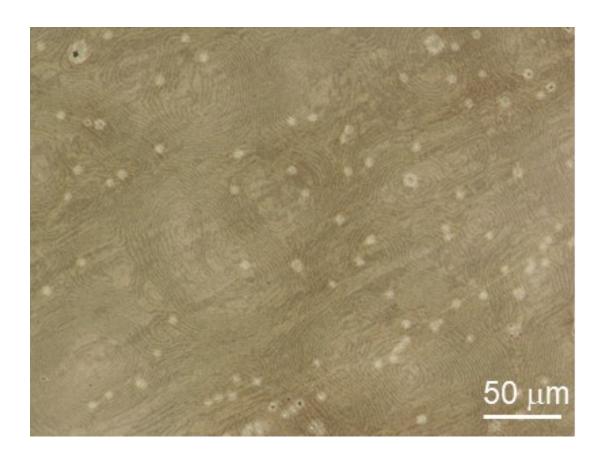
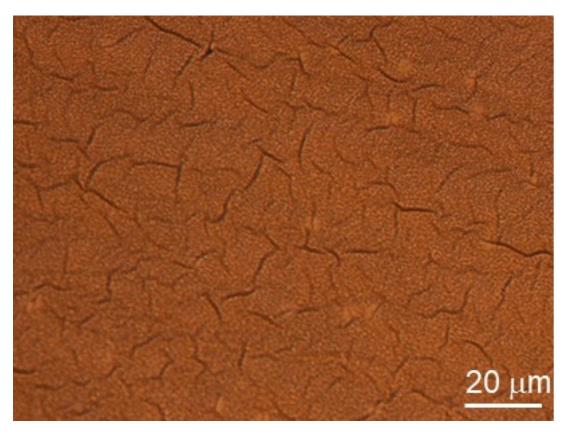
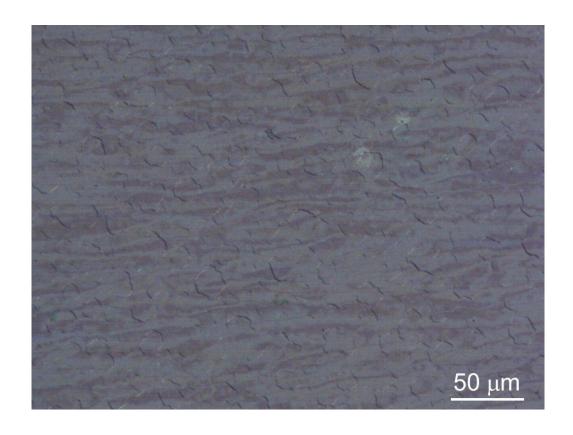


Figure. S2. Polarising optical microscopy (POM) image of PPy/TWO-STEP.



**Figure. S3.** Circularly-polarised differential interference contrast microscopy image of PPy/ONE-STEP.



**Figure. S4.** POM image of PPy/TWO-STEP-6T.