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## **Supporting information**

## Further understanding the mechanism of the electrochromic devices

## with variable infrared emissivity based on polyaniline conducting

## polymer

Leipeng Zhang<sup>a</sup>, Bo Wang<sup>a</sup>, Xiaobai Li<sup>a</sup>, Gaoping Xu<sup>a</sup>, Shuliang Dou<sup>a</sup>, Xiang Zhang<sup>a</sup>, Xi Chen<sup>a</sup>, Jiupeng Zhao<sup>b\*</sup>, Ke Zhang<sup>b\*</sup>, Yao Li<sup>a\*</sup>

<sup>a</sup> Center for Composite Materials and Structure, Harbin Institute of Technology, 150001, Harbin, China.

<sup>b</sup> School of Chemistry and Chemical Engineering, Harbin Institute of Technology, 150001, Harbin, China.

Corresponding author: <u>yaoli@hit.edu.cn</u>; <u>zhangke@hit.edu.cn</u>; <u>jpzhao@hit.edu.cn</u>

Fabrication and characterization of HClO<sub>4</sub> doped-PANI films Supplementary figures

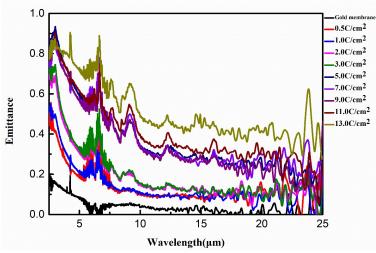


Figure S1. Emittance curves of HClO<sub>4</sub> doped-PANI porous films with different polymerization charges at -0.25V.

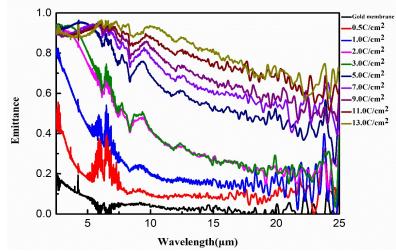


Figure S2. Emittance curves of  $HClO_4$  doped-PANI porous films with different polymerization charges at 0.5V.

IR electrochromic device.

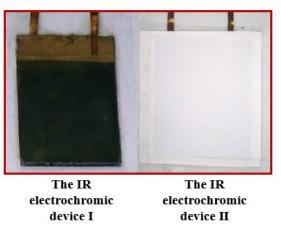


Figure S3. Photos of the IR electrochromic device I and II

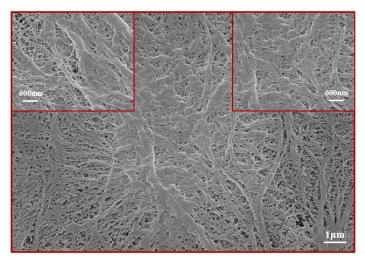


Figure S4. SEM images of nanoporous PE. The nanopores are only 50 to 1000 nm in diameter.

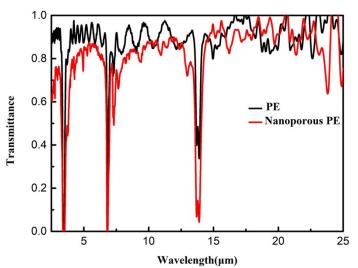


Figure S5. The FTIR transmittance of normal PE and nanoporous PE

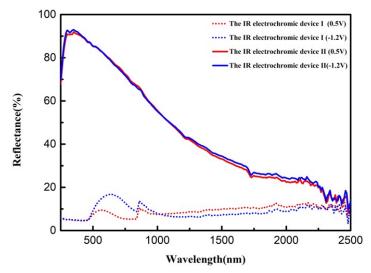


Figure S6. Hemispherical reflectivity spectrum in the wavelength ranges of 250–2500 nm of the devices at different voltages

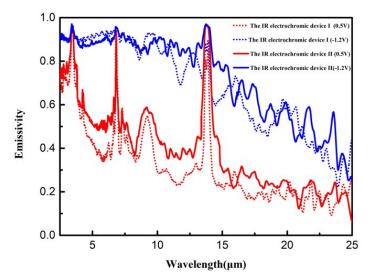


Figure S7. Emittance curves of the IR electrochromic devices at different voltages