

## Supplementary Information

### **Durable and Breathable EMI Shielding Spacer Fabrics Enabled by Synergistic Thiol and TPU Coatings**

Xiujuan Wang<sup>1,2†</sup>, Lingzhu Wang<sup>2,†</sup>, Yuanjun Liu<sup>2,\*</sup>, Yaming Jiang<sup>2,\*</sup>, Hao Liu<sup>2,3,4,5\*</sup>

<sup>1</sup> School of Arts, Hubei University of Arts and Science, Xiangyang, 441053, China;  
(xjwang2023@outlook.com)

<sup>2</sup> School of Textile Science and Engineering, Tiangong University, Tianjin, 300387, China;

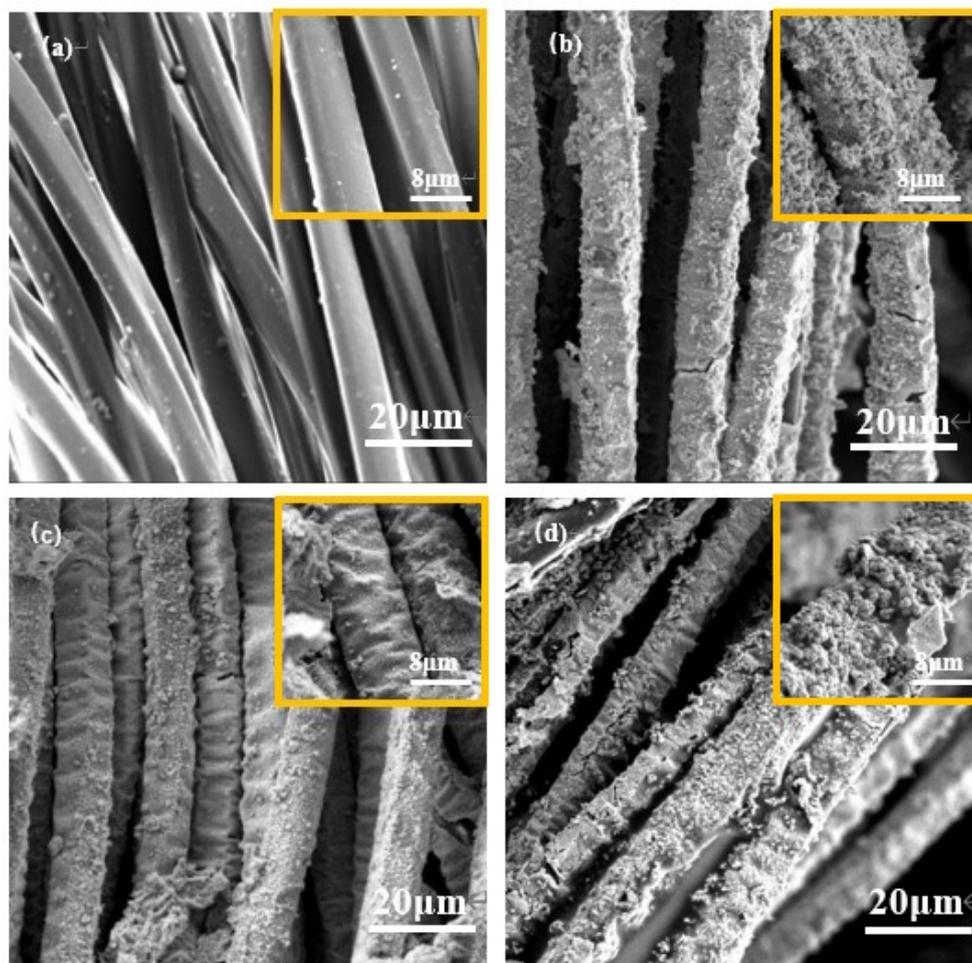
<sup>3</sup> Institute of Smart Wearable Electronic Textiles, Tiangong University, Tianjin, 300387, China

<sup>4</sup> Key Laboratory of Advanced Textile Composite Materials of Ministry of Education, Tiangong University, China

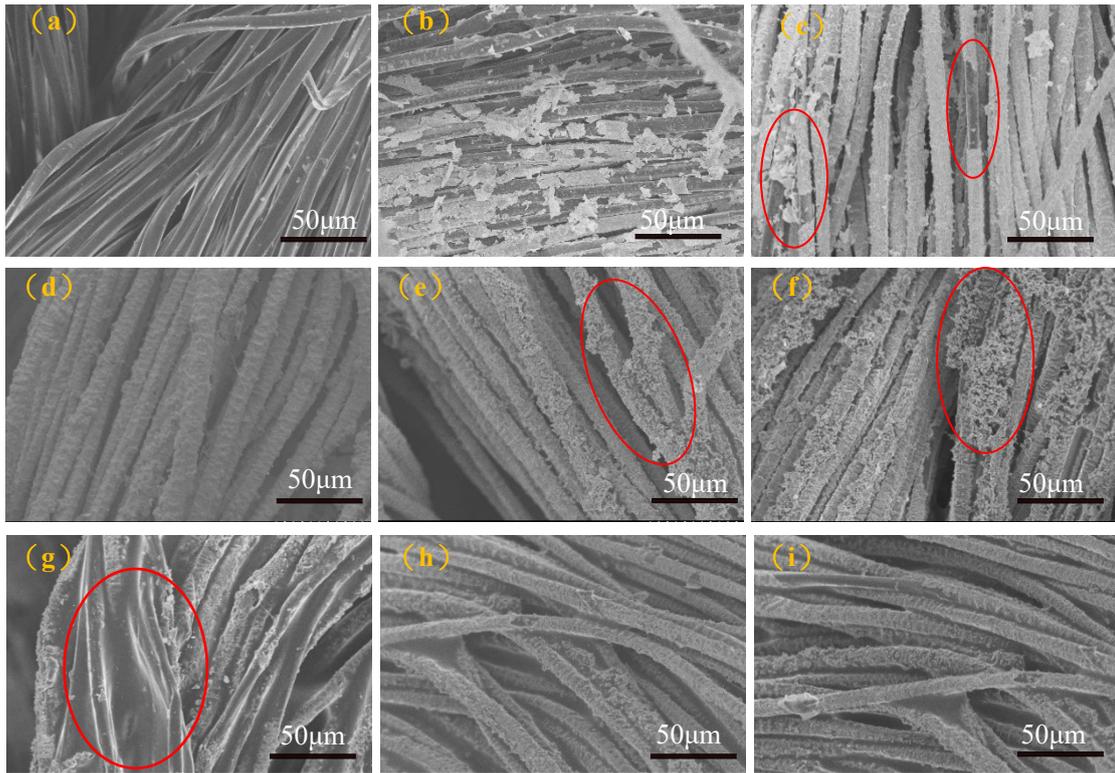
<sup>5</sup> State Key Laboratory of Bio-based Fiber Materials, Beijing, 100025, China.

\* Correspondence: liuhao\_0760@163.com (H.L.); jiangyaming@tiangong.edu.cn (Y.-M. J.); liuyuanjunsd@163.com (Y.-J.L.)

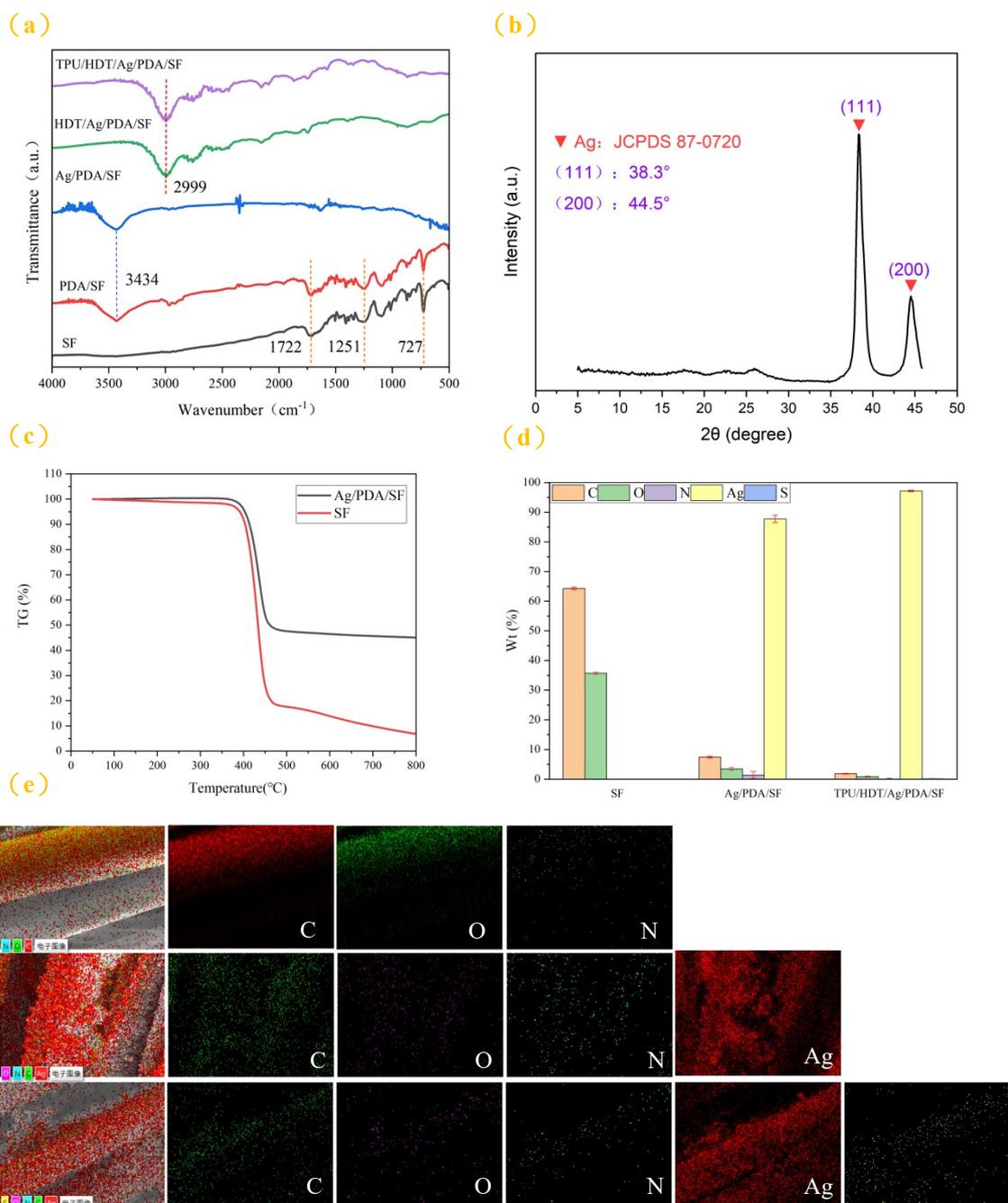
† These authors contributed equally to this work.



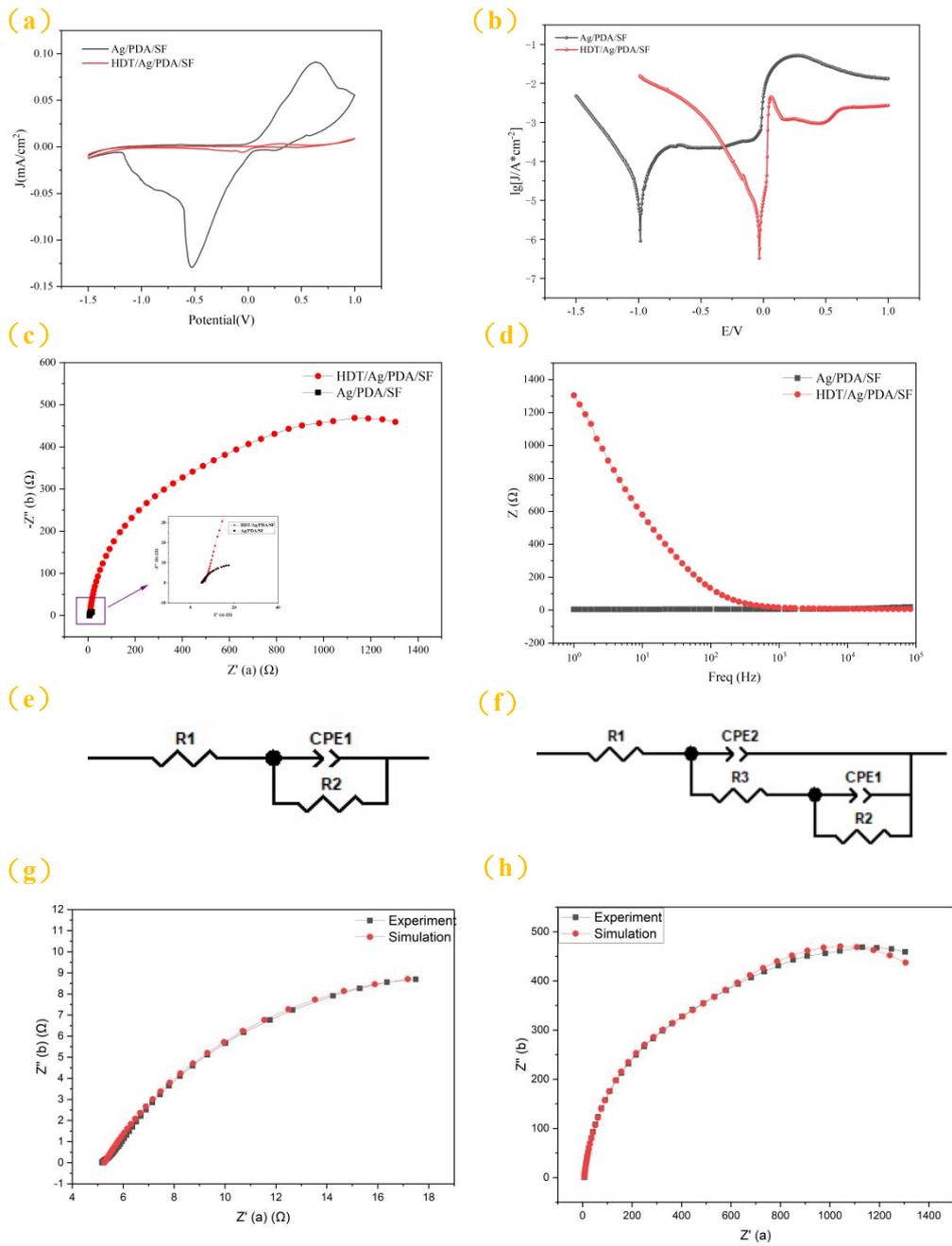
**Figure S1.** SEM of fabrics with different coating (a) SF, (b) Ag/PDA/SF, (c) HDT/Ag/PDA/SF, (d) TPU/HDT/Ag/PDA/SF.



**Figure S2.** SEM images of silver-coated fabrics with different silver nitrate concentrations, (a) Original fabric (b) 60 g/L (c) 80 g/L (d) 100 g/L (e) 120 g/L (f) 140 g/L (g-i) 100 g/L silver nitrate concentration, TPU soaked for 5 minutes, surface electron microscope images of fabrics with different centrifugation time, (g) Centrifugation for 1 min, (h) Centrifugation for 2 min, (i) Centrifugation for 3 min.



**Figure S3.** (a) The infrared spectrum of the composite fabric, (b) The XRD of the composite fabric, (c) The TG curve of the fabric before and after silver plating, (d-e) The charts of the element content of the composite fabric.



**Figure S4.** Electrochemical properties of fabrics with cetyl mercaptan-coated and uncoated (a) CV curve, (b) Tafel curve, (c-d) Nyquist Impedance, (e-f) Impedance fitting circuit, (g-h) The comparison of impedance fitting and experiment