

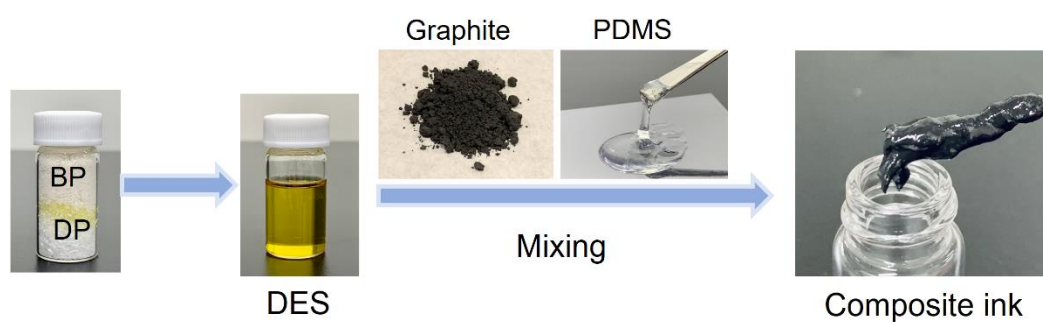
## **Supporting Information**

### **Printed Composite Film with Porous/ Micropyramide Hybrid Conductive Architecture for Multifunctional Flexible Force Sensor**

Yi-Fei Wang \*, Junya Yoshida, Yasunori Takeda, Ayako Yoshida, Takeru Kaneko, Tomohito Sekine, Dasuike Kumaki, Shizuo Tokito \*

Research Center for Organic Electronics (ROEL), Yamagata University, 4-3-16, Jonan, Yonezawa, Yamagata, 992-8510 Japan.

E-mail: wang@yz.yamagata-u.ac.jp (Y. F. Wang); tokito@yz.yamagata-u.ac.jp (S. Tokito).



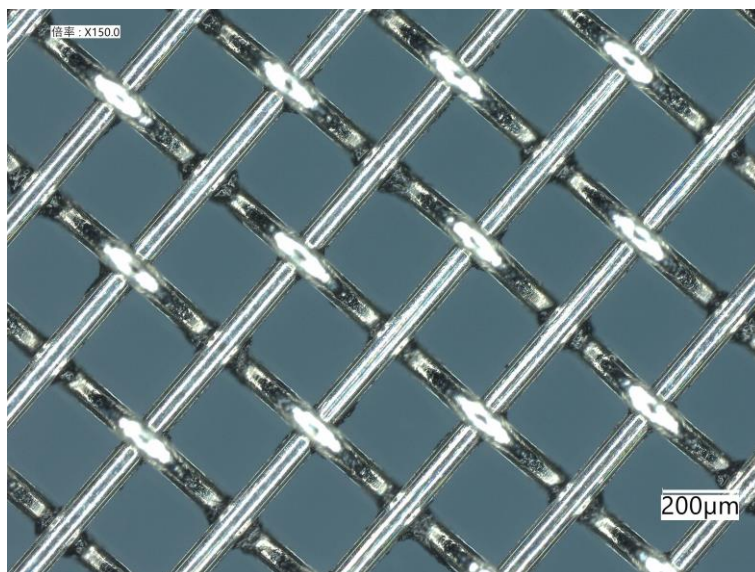
**Figure S1.** The synthesis process of the printed composite ink

**Table S1.** Component of the printable composite inks

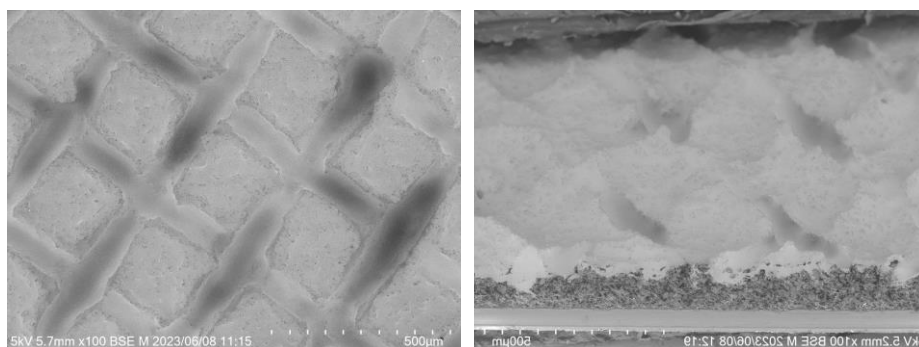
Inks	PDMS (g)	DES (g)	Graphite (g)
Ink-0	1	0	1.25
Ink-1	1	1	0.5
Ink-2	1	1	0.75
Ink-3	1	1	1.0
Ink-4	1	1	1.25
Ink-5	1	1	1.37



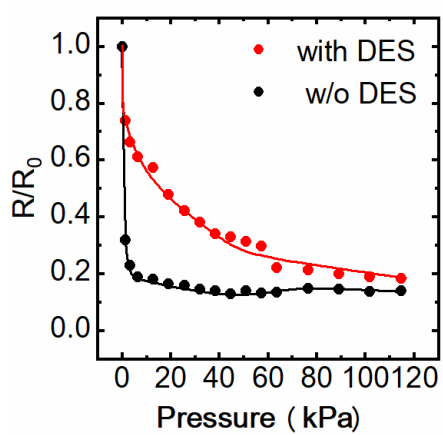
**Figure S2.** A printed sensing layer with pattern feature of 2 mm by 2 mm.



**Figure S3.** Optical microscopy image of the screen mesh mask.



**Figure S4.** SEM images of Ink-5 with high loading of Graphite taken from the surface (left) and a 45-degree observation angle (right).



**Figure S5.** Comparison of performance of inks with DES (ink-4) and without DES (ink-0).