Electronic Supplementary Information file

One-step Roll-to-roll Process of Stable AgNW/PEDOT:PSS Solution Using Imidazole as Mild Base for Highly Conductive and Transparent Films: Optimizations and Mechanisms

Seyul Kim[a], So Yeon Kim[a], Moon Hyun Chung[a], Jeonghun Kim[a], and Jung Hyun Kim[b]*

a Department of Chemical and Biomolecular Engineering, Yonsei University, 50 Yonsei-ro, Seodaemun-gu, Seoul 120-749, Republic of Korea

E-mail: jayhkim@yonsei.ac.kr

b Institute for Superconducting and Electronic Materials (ISEM), Australian Institute for Innovative Materials (AIIM), University of Wollongong, NSW 2500, Australia

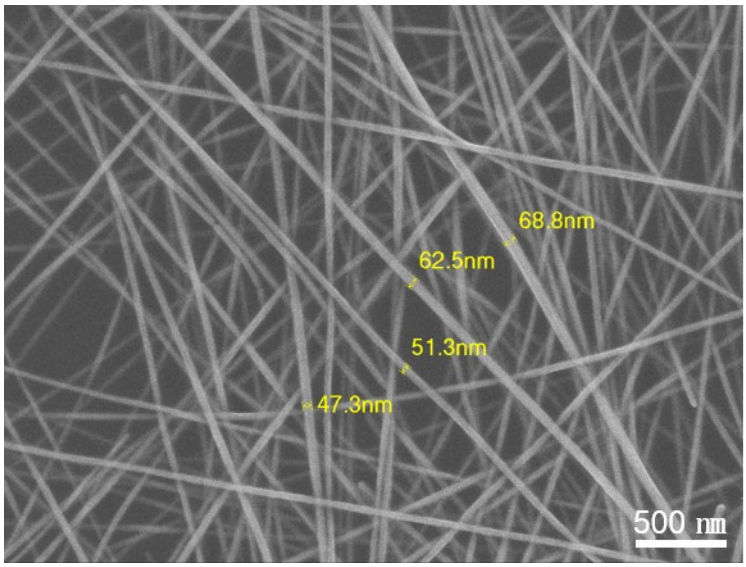

Fig. S1 SEM image of the AgNWs used for the preparation of the conducting films.

Table S1. The electrical and optical properties of AgNW/PEDOT:PSS as function of weigh ratio of AgNW/PEDOT:PSS.

AgNW[a]	PEDOT:PSS[b]	Rs (Ω sq^{-1})	T (%)	Φ_{TC} (10^{-3} Ω^{-1})
1.00	0.00	79.20	98.60	10.97
1.00	0.50	56.70	98.10	14.56
1.00	1.00	54.30	97.80	14.74
1.00	1.50	60.80	97.50	12.77
1.00	2.00	73.90	97.30	10.29
1.00	2.50	79.80	96.10	8.42

[a] Weigh ratio of AgNW. [b] Weigh ratio of PEDOT:PSS

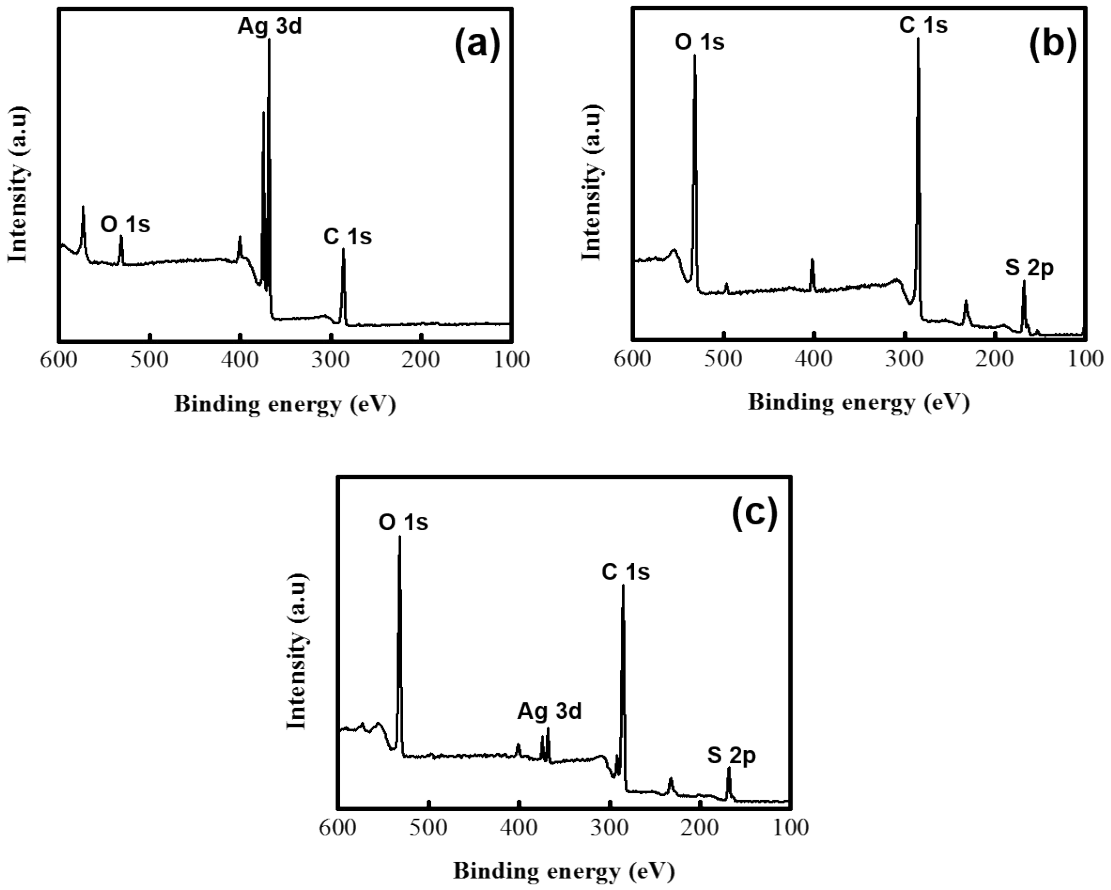

Fig. S2 XPS spectra of a) bare AgNW, b) PEDOT:PSS, and c) AgNW/PEDOT:PSS.

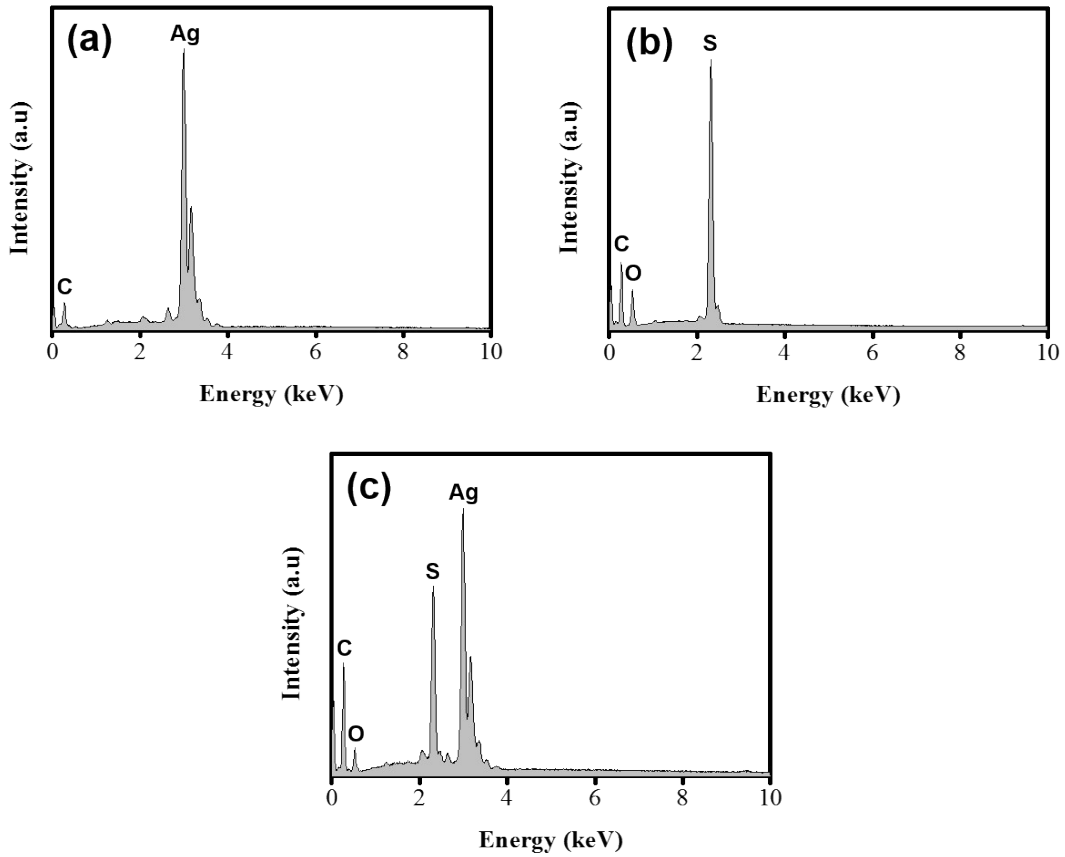

Fig. S3 EDS spectra of a) bare AgNW, b) PEDOT:PSS, and c) AgNW/PEDOT:PSS.

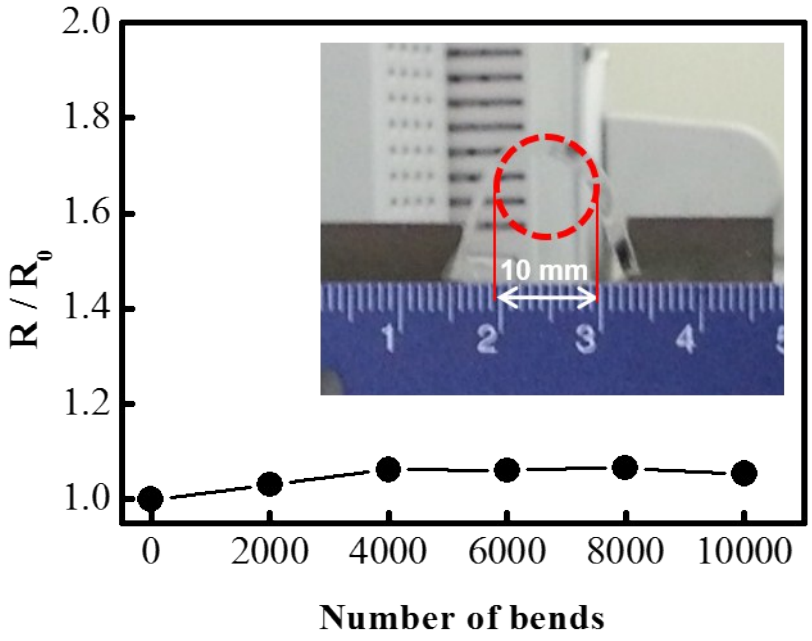

Fig. S4 Bending test of AgNW/PEDOT:PSS film, showing the sheet-resistance change according to bending cycles.

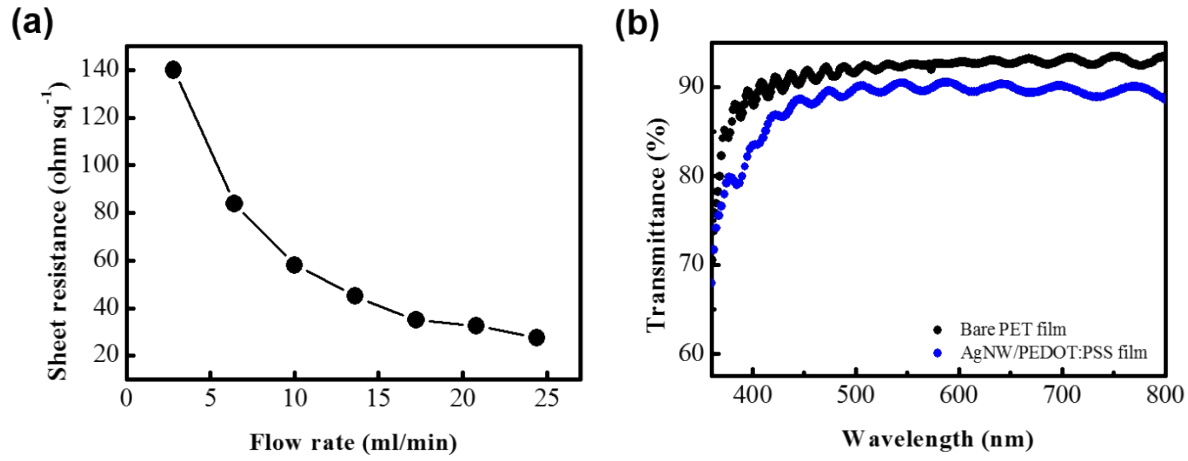

Fig. S5 a) Sheet resistance of AgNW/PEDOT:PSS film fabricated by the slot-die roll-coating process in dependence of the flow rate of AgNW/PEDOT:PSS solution. b) Transmittance of AgNW/PEDOT:PSS roll film in the wavelength range of 350–800 nm.