

**Transparent, Conductive and Printable Composites Consisting of
TEMPO-oxidized Nanocellulose and Carbon Nanotube**

Hirota Koga, Tsuguyuki Saito, Takuya Kitaoka, Masaya Nogi, Katsuaki Suganuma,
and Akira Isogai*

*Corresponding author: H. Koga

The Institute of Scientific and Industrial Research, Osaka University

8-1 Mihogaoka, Ibaraki, Osaka 567-0047, Japan

Phone: +81-6-6879-8521, Fax: +81-6-6879-8522

E-mail address: hkoga@eco.sanken.osaka-u.ac.jp

Experimental

Preparation of an aqueous dispersion of untreated CNTs, and TOCNs

Untreated CNTs (4.3 mg, Aldrich, Ltd.) were mixed with an aqueous dispersion of TOCNs (0.1 wt%, 20 mL), and this was followed by sonication for 20 min using an ultrasonic homogenizer equipped with a 7 mm probe tip (US-300T, Nihon Seiki), and centrifugation at 9000 rpm for 40 min.

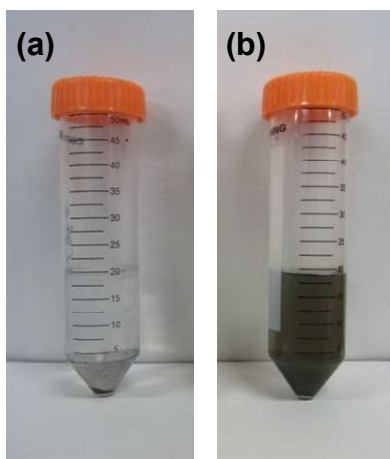


Figure S1. Optical images of the aqueous suspensions of untreated CNTs after centrifugation at 9000 rpm for 40 min in the (a) absence, and (b) presence of TOCNs.

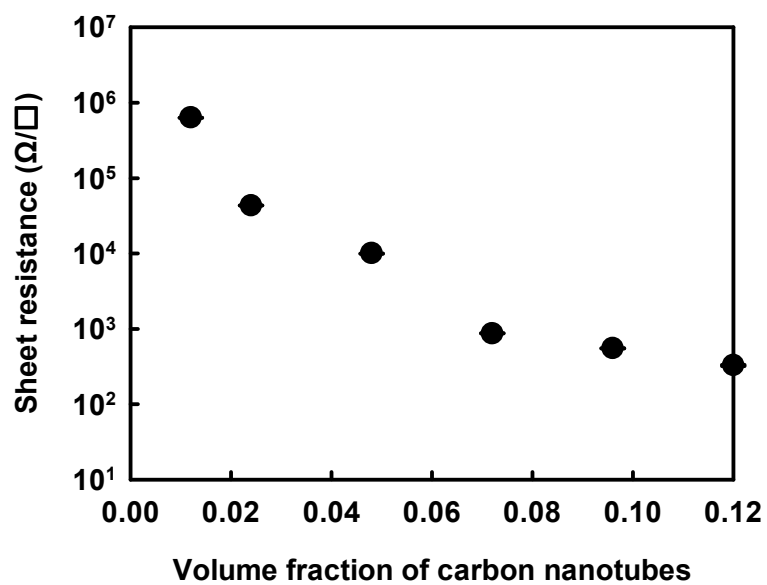


Figure S2. Sheet resistance values for the freestanding CNT/TOCN film versus the volume fraction of CNTs.

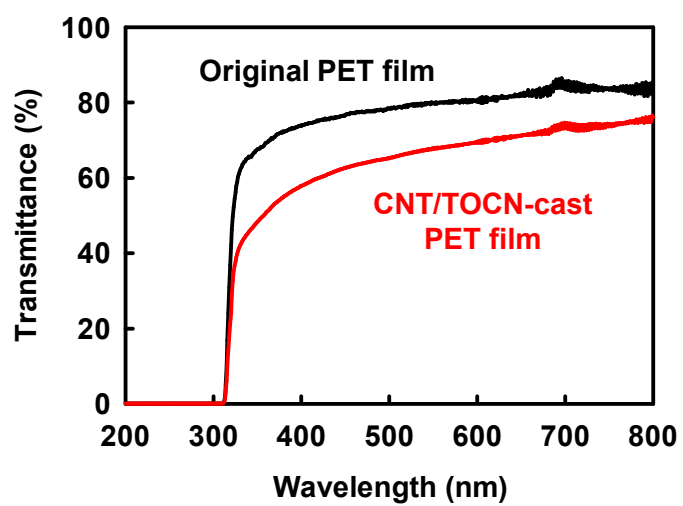


Figure S3. UV-vis light transmittance spectra for an original PET film (black line), and the CNT/TOCN-cast film (red line).

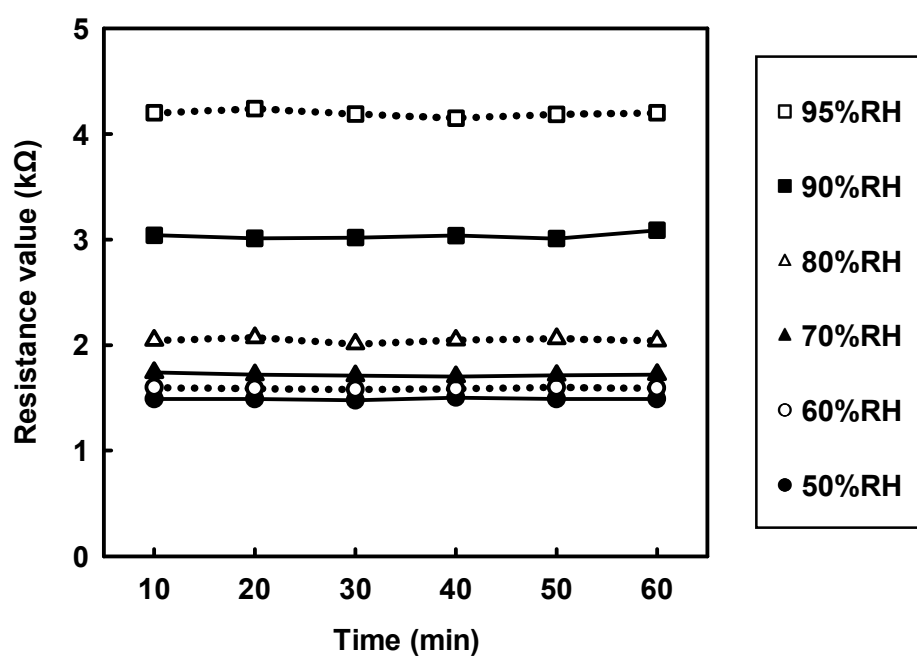


Figure S4. Resistance values for the CNT/TOCN-cast film as a function of time, at various relative humidity values.