Supplementary Materials

Deep-Ultraviolet Transparent Conductive MWCNT/SiO_2 Composite Thin Film Fabricated by UV Irradiation at Ambient Temperature onto Spin-Coated Molecular Precursor Film

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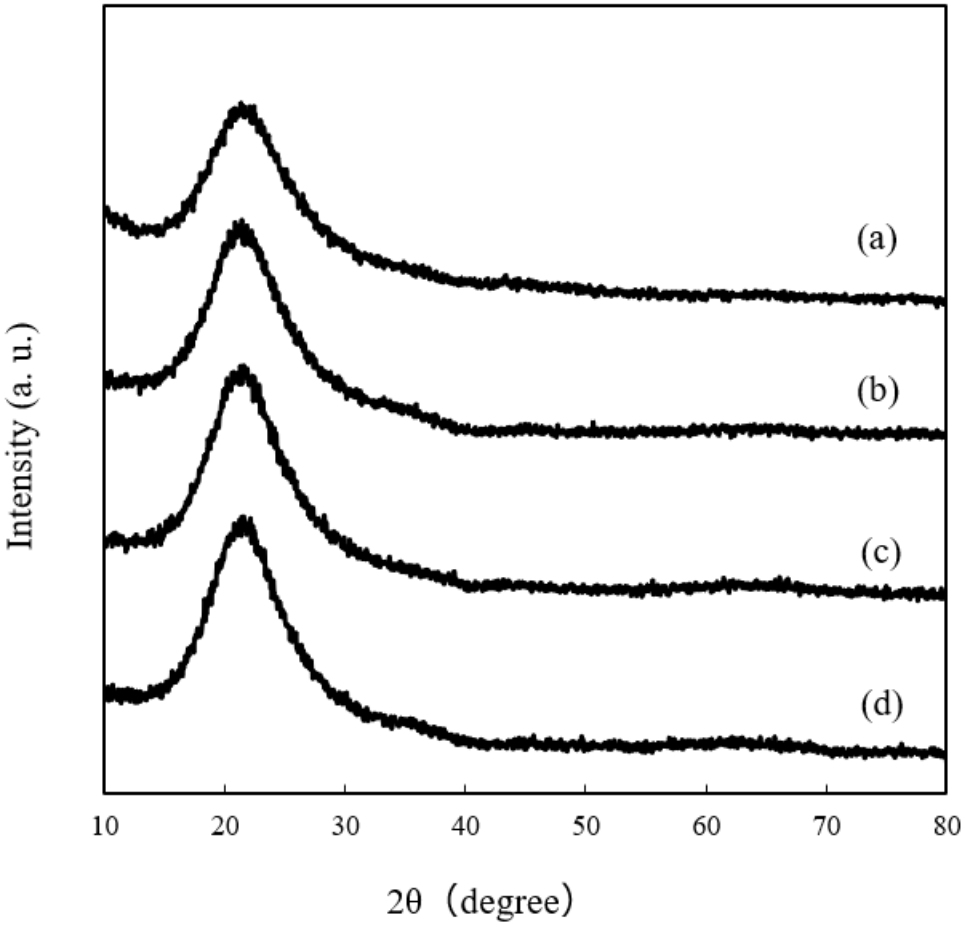

Figure S1. XRD patterns of the obtained thin films, (**a**) **F**$_{COMP}$, (**b**) **F'**$_{COMP}$, (**c**) **F**$_{CNT}$, and (**d**) **F'**$_{CNT}$.

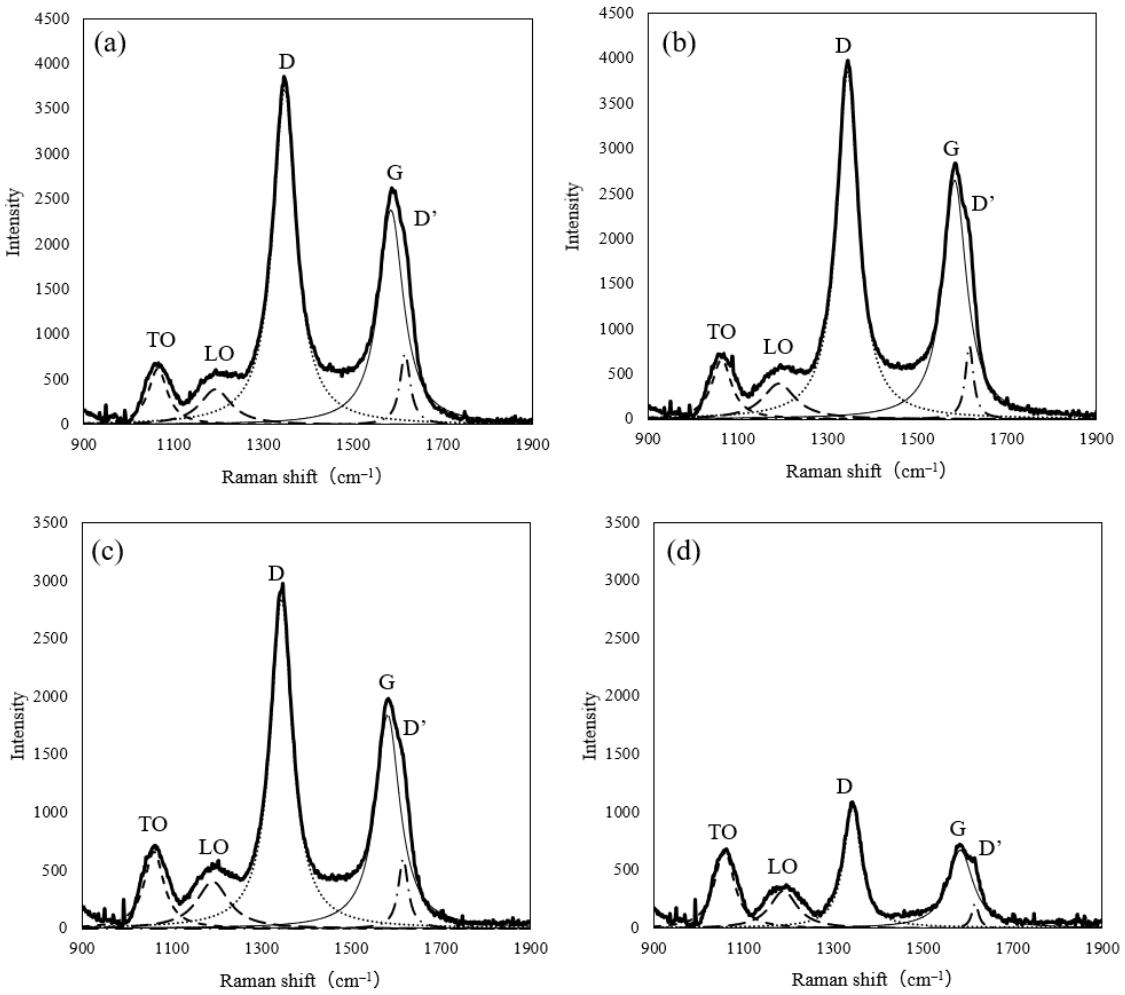

Figure S2. Deconvoluted Raman peaks of the obtained thin films, (**a**) **F**$_{COMP}$, (**b**) **F′**$_{COMP}$, (**c**) **F**$_{CNT}$ and (**d**) **F′**$_{CNT}$, along with each original spectrum in the range of 900–1900 cm^{-1}. The thick line indicates the observed spectra, while five lines, (- - -), (— — —), (• • •), (—), and (— • —) indicate the theoretically fitted curves assignable the TO, LO, D, G, and D′ bands, respectively. All the calculated curves completely overlapped the corresponding observed curves.

Table S1. The (D+D′)/TO and G/TO peak area ratios calculated from the Raman spectra of the obtained thin films, along with the decreasing levels of the ratios with the heat treatment are shown. The peak area was normalized with the TO band of SiO_2.

Films	(D+D')/TO	Decreasing level by heat treatment	G/TO	Decreasing level by heat treatment
$\mathbf{F}_{COMP}$	8.1	12%	5.0	4%
$\mathbf{F'}_{COMP}$	7.1		4.8	
$\mathbf{F}_{CNT}$	5.2	71%	3.4	62%
$\mathbf{F'}_{CNT}$	1.5		1.3	