

Supporting Information

Graphene Oxide and Laponite Composite Films with High Oxygen-Barrier Properties

JongTae Yoo,^{†ab} Sang Bong Lee,^{†a} Chang Kee Lee,^a Sung Wook Hwang,^a ChaeRin Kim,^b

Tsuyohiko Fujigaya,^{bc} Naotoshi Nakashima,^{*bc} and Jin Kie Shim^{*a}

^a Korea Packaging Center, Korea Institute of Industrial Technology, Ojeong-gu, Bucheon 421-742, South Korea

^b Department of Applied Chemistry, Graduate School of Engineering, Kyushu University,

744 Motooka, Nishi-ku, Fukuoka 819-0395, Japan

^c International Institute for Carbon-Neutral Energy Research (I2CNER), Kyushu University,

744 Motooka, Nishi-ku, Fukuoka 819-0395, Japan

[†] These authors contributed equally to this work.

* Corresponding author. E-mail: nakashima-tcm@mail.cstm.kyushu-u.ac.jp (N. N.); jkshim@kitech.re.kr (J. S.)

Table S1 Content ratios and pH of the mixed solutions composed of the GO and LN.

	Mixing ratios (v/v)*		Content ratios (wt/wt)		pH of solutions
	GO	LN	GO	LN	
GO	2.0	0	100	0	2.3
GO_{1.9}/LN_{0.1}	1.9	0.1	82.6	17.4	2.9
GO_{1.7}/LN_{0.3}	1.7	0.3	58.6	41.4	4.4
GO_{1.5}/LN_{0.5}	1.5	0.5	42.9	57.1	5.7
LN	0	2.0	0	100	9.8

* Solute contents of the solutions: GO of 0.5 (wt/v) % and laponite of 2 (wt/wt) %

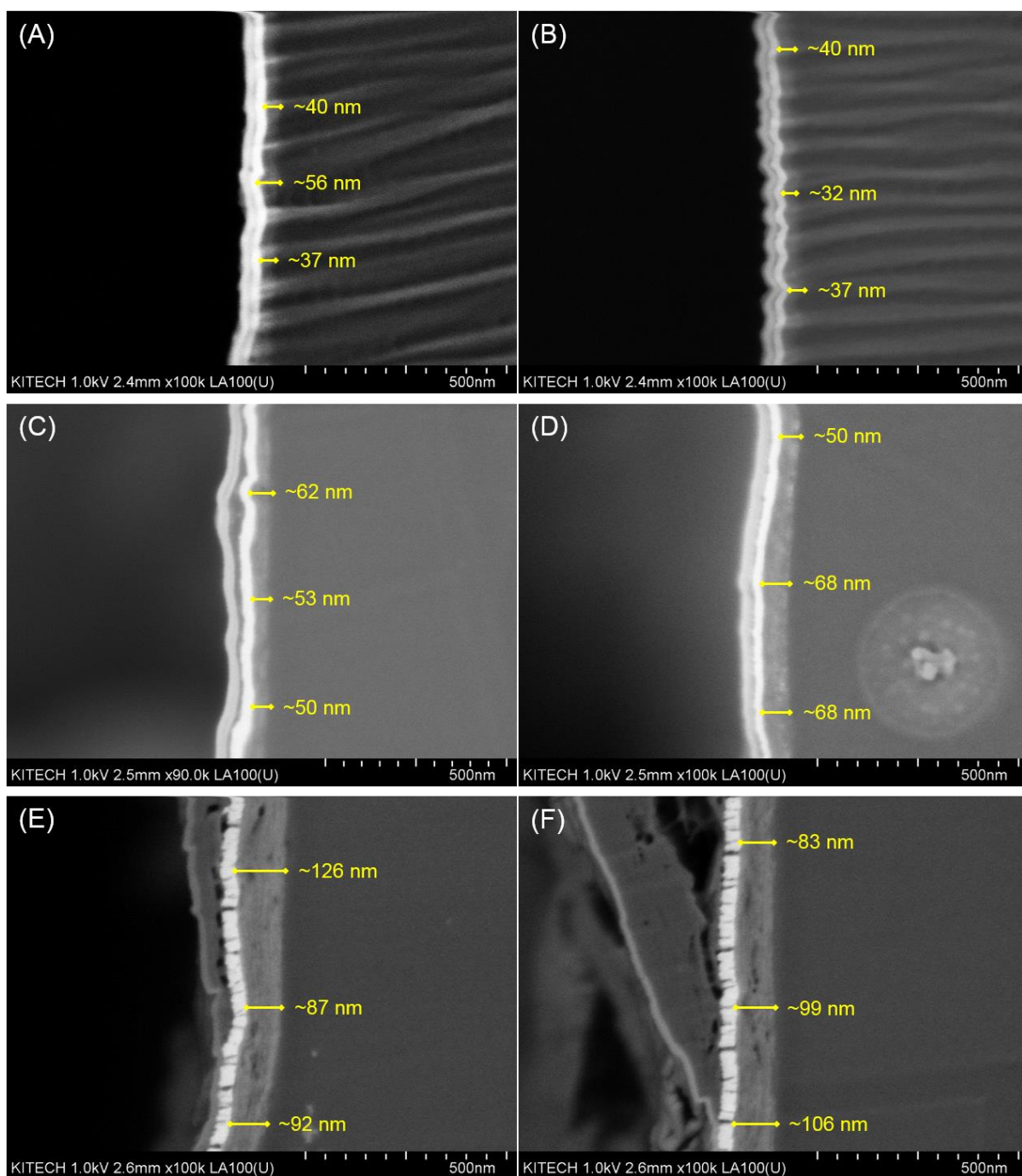


Fig. S1 Cross-sectional SEM images of the (A and B) GO alone, (B and C) GO_{1.9}/LN_{0.1}, (C and D) GO_{1.5}/LN_{0.5}-coated PET films.

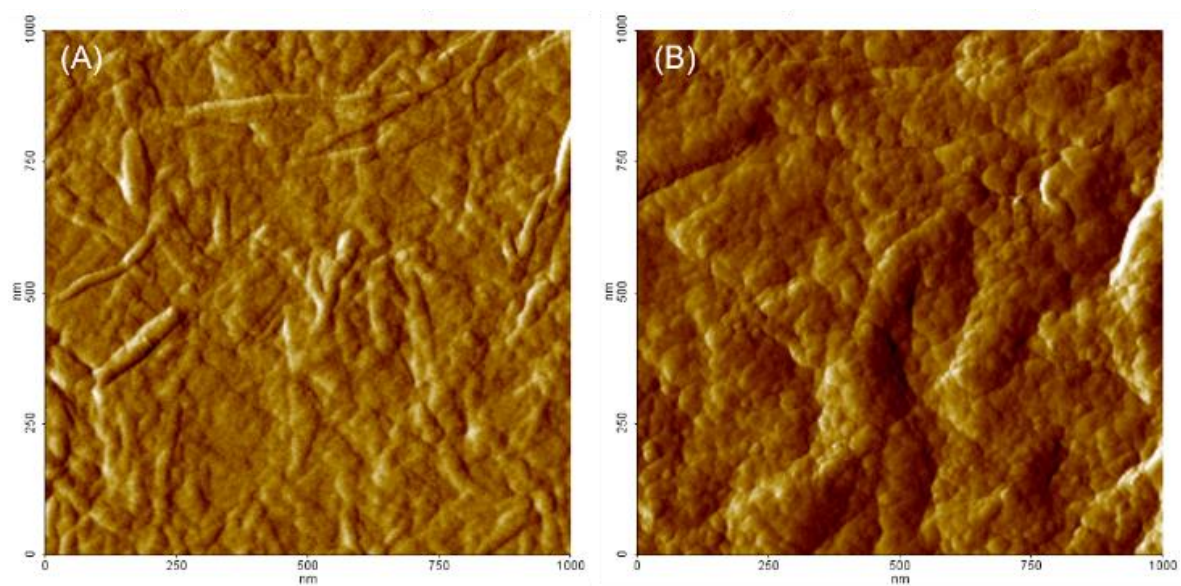


Fig. S2 AFM images of upper surfaces of the (A) GO alone and (B) $\text{GO}_{1.9}/\text{LN}_{0.1}$.