

# Supporting Information

## Preparation of chitosan-coated polyethylene packaging films by DBD plasma treatment

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Data for **Figure 5A**

Effect of number of washing cycle on amount of chitosan deposited on the PE films.

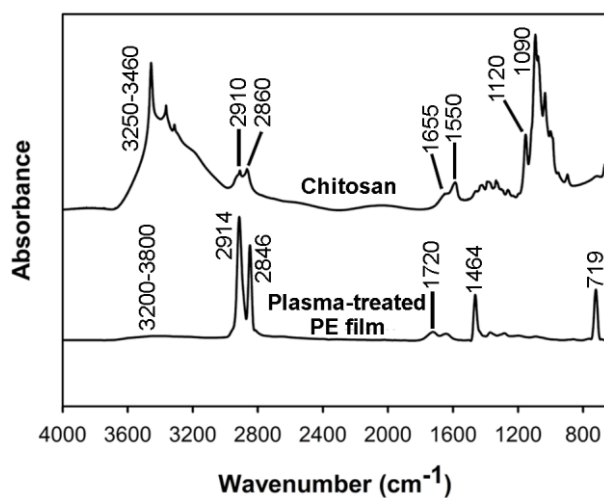
Number of washing cycle	Amount of deposited chitosan ( $\mu\text{g}/\text{cm}^2$ )
1	$245.825 \pm 3.077$
2	$194.158 \pm 2.307$
3	$115.768 \pm 3.288$
4	$115.298 \pm 3.077$

Data for **Figure 5B**

Comparison on the amounts of coated chitosan on the untreated and plasma-treated PE films immersed in different chitosan concentrations.

Chitosan concentration (g/100 mL)	Amount of coated chitosan	
	Untreated film	Plasma-treated film
0.10	$0.00 \pm 0.00$	$3.574 \pm 1.273$
0.25	$0.00 \pm 0.00$	$5.044 \pm 0.636$
0.50	$0.00 \pm 0.00$	$8.351 \pm 0.636$
0.75	$0.00 \pm 0.00$	$17.531 \pm 1.279$
1.00	$0.00 \pm 0.00$	$32.340 \pm 1.151$
2.00	$0.00 \pm 0.00$	$115.768 \pm 1.644$

Data for **Figure 6B**



ATR-FTIR spectra of the neat chitosan and the plasma-treated PE film.

Assignment of FTIR characteristic peaks for chitosan.

Wavenumber (cm <sup>-1</sup> )	Assignment
3250–3460	O–H and N–H stretching
2910	CH <sub>2</sub> asymmetric stretching
2860	CH <sub>2</sub> symmetric stretching
1655	Amide I
1550	N–H bending from amine and amide II
1120	C–O–C antisymmetric stretching and C–N stretching
1090	Skeleton vibration of C–O stretching

Assignment of FTIR characteristic peaks for plasma-treated PE film.

Wavenumber (cm <sup>-1</sup> )	Assignment
3200–3800	O–H stretching
2914	CH <sub>2</sub> asymmetric stretching
2846	CH <sub>2</sub> symmetric stretching
1720	C=O stretching
1465	CH <sub>2</sub> bending
719	CH <sub>2</sub> rocking