Supporting Information

High UV shielding and mechanical properties of shellac composite film for fruit packaging

Lingsu Zhang[1,2], *Deyan Du*[1,2], *Weifu Dong*[1,2], *Tatsuo Kaneko*[1,2], *Hongji Zhang*[1,2], *Mingqing Chen*[1,2], *Dongjian Shi*[1,2*]

[1] The Key Laboratory of Synthetic and Biological Colloids, Ministry of Education, School of Chemical and Material Engineering, Jiangnan University, Wuxi, Jiangsu 214122, China.

[2] International Research Center for Photo-responsive Molecules and Materials, Jiangnan University, 214122 Wuxi, Jiangsu, China.

Supplementary Information mainly shows the following contents.

1. Abbreviation and corresponding component ratio of shellac composite films (**Table S1**)
2. Digital photos of laser irradiation of SA_mPS solutions (**Figure S1**)
3. FTIR spectra of SA_mPS films (**Figure S2**)
4. Digital photos of laser irradiation of SA_mC_xPS composite solutions (**Figure S3**)
5. FTIR spectra of SA_mC_xPS composite films (**Figure S4**)

Table S1. Abbreviation and corresponding component ratios of shellac composite films.

Samples	Shellac (wt%)	$NH_3 \cdot H_2O$ (M)	CNF (wt%)	PEG (wt%)	sodium oleate (wt%)
$A_{1.2}S$	10	1.2	0	0	0
$A_{6.0}S$	10	6.0	0	0	0
$A_{12.0}S$	10	12.0	0	0	0
$SA_{1.2}PS$	10	1.2	0	2	0.4
$SA_{6.0}PS$	10	6.0	0	2	0.4
$SA_{12.0}PS$	10	12.0	0	2	0.4
$SA_{12.0}C_{0.5}PS$	10	12.0	0.5	2	0.4
$SA_{12.0}C_{0.7}PS$	10	12.0	0.7	2	0.4
$SA_{12.0}C_{0.9}PS$	10	12.0	0.9	2	0.4

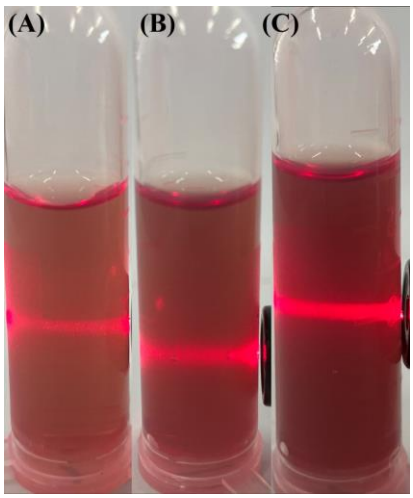

Figure S1. Digital photos of (A) $SA_{1.2}PS$, (B) $SA_{6.0}PS$ and (C) $SA_{12.0}PS$ solutions with laser irradiation.

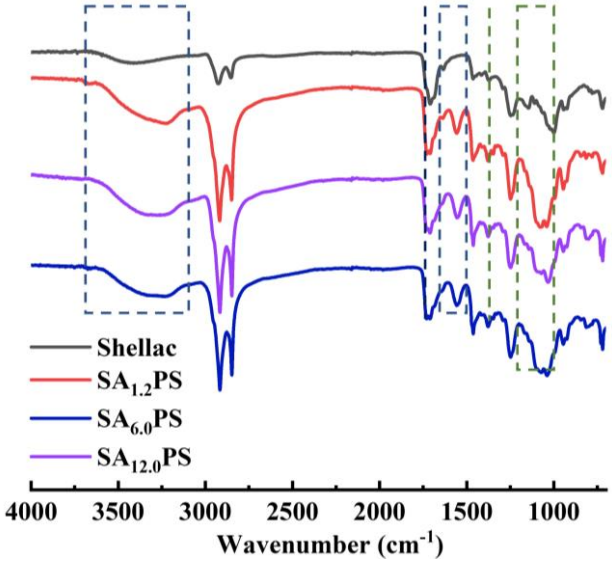

Figure S2. FTIR spectra of SA_mPS films.

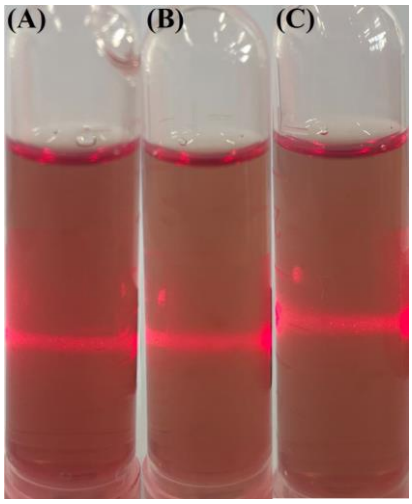

Figure S3. Digital photos of (A) $SA_{12.0}C_{0.5}PS$, (B) $SA_{12.0}C_{0.7}PS$ and (C) $SA_{12.0}C_{0.9}PS$ solutions with laser irradiation.

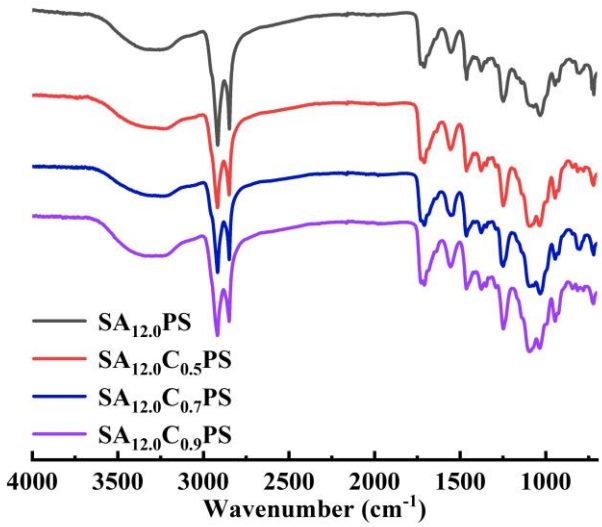

Figure S4. FTIR spectra of SA_mC_xPS composite films.