

Supplementary Information

Ecofriendly preparation and characterization

of cassava starch/polybutylene adipate terephthalate film

Tensile strength of PBAT/TPS		
Content of TPS	Standard deviation (MPa)	Confidence interval (MPa)
0%	0.98	16.84±1.91
5%	0.094	11.14±0.18
10%	0.30	10.36±0.59
15%	0.21	9.74±0.40
20%	0.010	5.77±0.020

Table S1. Standard deviation and confidence interval of PBAT/TPS composite tensile strength data.

Elongation at break of PBAT/TPS		
Content of TPS	Standard deviation (%)	Confidence interval (%)
0%	30.00	845.09±58.79
5%	4.00	634.44±7.85
10%	29.68	525.24±58.17
15%	17.57	522.32±34.43
20%	65.80	460.14±127.00

Table S2. Standard deviation and confidence interval of elongation at break data for PBAT/TPS composites.

Tensile strength of PBAT/TPS/nano-ZnO		
Content of TPS	Standard deviation (MPa)	Confidence interval (MPa)
0%	0.30	10.36±0.59
0.5%	1.23	16.67±2.41
1%	2.09	26.24±4.09
1.5%	0.15	16.18±0.30
2%	1.68	11.15±3.29

Table S3. Standard deviation and confidence interval of tensile strength data of PBAT/TPS/ nano-ZnO composites.

Elongation at break of PBAT/TPS/ nano-ZnO		
Content of TPS	Standard deviation (%)	Confidence interval (%)
0%	29.68	525.24±58.17
0.5%	103.07	619.89±202.00
1%	80.73	541.81±158.24
1.5%	2.85	441.02±5.58
2%	39.26	350.58±76.95

Table S4. Standard deviation and confidence interval of elongation at break data of PBAT/TPS/ nano-ZnO composites.

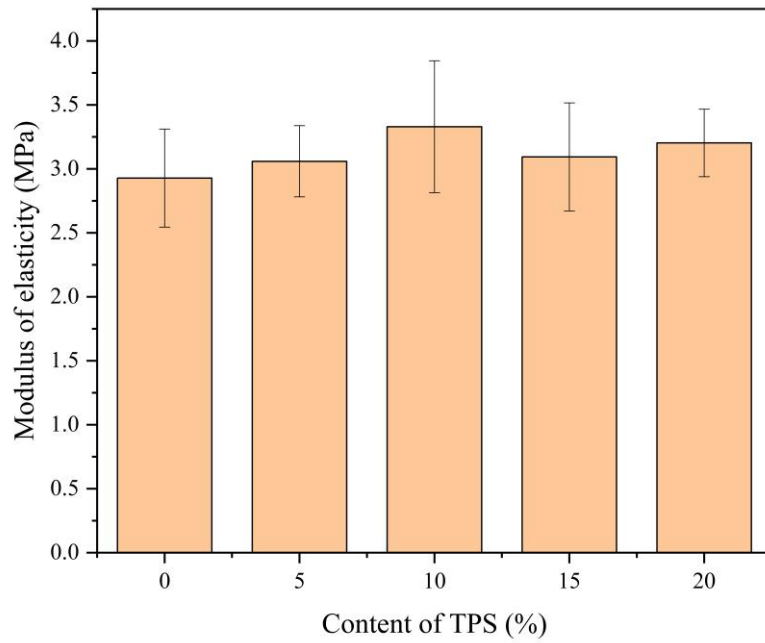


Figure S1. Elastic modulus of PBAT/TPS composite material.

As shown in figure S1, PBAT/TPS elastic modulus of the composite material has always been to maintain in the 3 MPa, the increase of the content of TPS did not affect the elastic modulus of the composite, the main reason for the TPS particles with PBAT composite for physical composite, and PBAT always exist in continuous phase in the composites, so the addition of TPS particles does not affect the elastic modulus of the composite material.

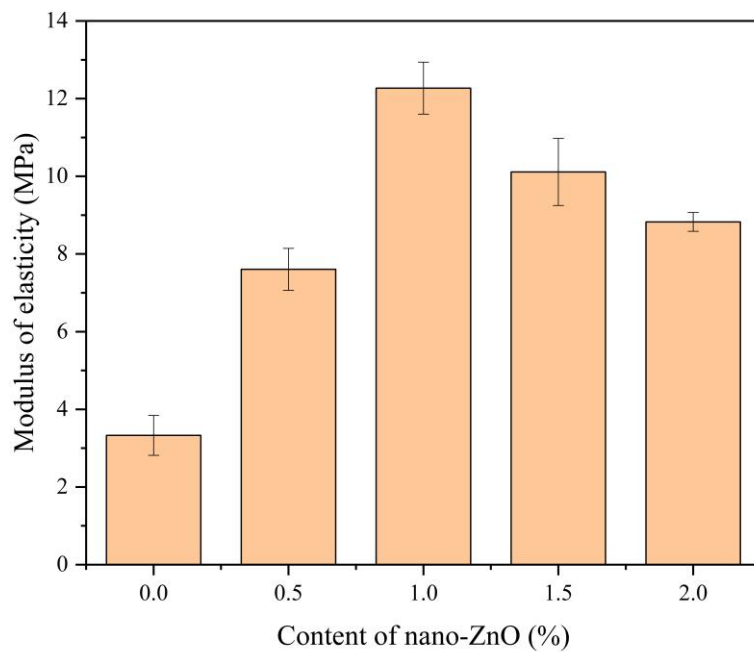


Figure S2. Elastic modulus of PBAT/TPS/ nano-ZnO composites.

As can be seen from figure S2, with the addition of nano-zinc oxide, the PBAT/TPS/ nano-ZnO composites showed a trend of increasing first and then decreasing, and reached a peak value at 1%, with a modulus of 12.27mpa, which was 268.5% higher than that of 10%TPS/PBAT composites. This result is consistent with the higher tensile strength and lower elongation at break when the content of nanometer zinc oxide is 1%.In addition, among all PBAT/TPS/ nano-ZnO composites, the group elastic modulus with the addition of 0.5% nano-ZnO was the lowest, which was consistent with the highest elongation at break and lower tensile strength of samples with the content of 0.5% nano-ZnO.