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 con	mposite 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	on and confidence interval of elongation	on at break data for PBAT/TPS
composites.		
composites.	ensile strength of PBAT/TPS/nano-2	ZnO
composites. T Content of TPS	ensile strength of PBAT/TPS/nano-Z Standard deviation (MPa)	ZnO Confidence interval (MPa
composites. T Content of TPS 0%	ensile strength of PBAT/TPS/nano-7 Standard deviation (MPa) 0.30	ZnO Confidence interval (MPa 10.36±0.59
composites. T Content of TPS 0% 0.5%	ensile strength of PBAT/TPS/nano-2 Standard deviation (MPa) 0.30 1.23	ZnO Confidence interval (MPa 10.36±0.59 16.67±2.41
composites. T Content of TPS 0% 0.5% 1%	ensile strength of PBAT/TPS/nano-2 Standard deviation (MPa) 0.30 1.23 2.09	ZnO Confidence interval (MPa 10.36±0.59 16.67±2.41 26.24±4.09
composites. T Content of TPS 0% 0.5% 1% 1.5%	ensile strength of PBAT/TPS/nano-2 Standard deviation (MPa) 0.30 1.23 2.09 0.15	ZnO Confidence interval (MPa 10.36±0.59 16.67±2.41 26.24±4.09 16.18±0.30
composites. T Content of TPS 0% 0.5% 1% 1.5% 2%	ensile strength of PBAT/TPS/nano-2 Standard deviation (MPa) 0.30 1.23 2.09 0.15 1.68	ZnO Confidence interval (MPa 10.36±0.59 16.67±2.41 26.24±4.09 16.18±0.30 11.15±3.29
composites. T Content of TPS 0% 0.5% 1% 1.5% 2% Table S3. Standard deviation	ensile strength of PBAT/TPS/nano-2 Standard deviation (MPa) 0.30 1.23 2.09 0.15 1.68 n and confidence interval of tensile streng	ZnO Confidence interval (MPa 10.36±0.59 16.67±2.41 26.24±4.09 16.18±0.30 11.15±3.29 gth data of PBAT/TPS/ nano-ZnO
composites. T Content of TPS 0% 0.5% 1% 1.5% 2% Table S3. Standard deviation composites.	ensile strength of PBAT/TPS/nano-2 Standard deviation (MPa) 0.30 1.23 2.09 0.15 1.68 and confidence interval of tensile streng	ZnO Confidence interval (MPa 10.36±0.59 16.67±2.41 26.24±4.09 16.18±0.30 11.15±3.29 gth data of PBAT/TPS/ nano-ZnO
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composites. T Content of TPS 0% 0.5% 1% 1.5% 2% Table S3. Standard deviation composites. Elo Content of TPS	ensile strength of PBAT/TPS/nano-2 Standard deviation (MPa) 0.30 1.23 2.09 0.15 1.68 n and confidence interval of tensile streng ngation at break of PBAT/TPS/ nano Standard deviation (%)	ZnO Confidence interval (MPa 10.36±0.59 16.67±2.41 26.24±4.09 16.18±0.30 11.15±3.29 gth data of PBAT/TPS/ nano-ZnO D-ZnO Confidence interval (%)
composites. T Content of TPS 0% 0.5% 1% 1.5% 2% Table S3. Standard deviation composites. Elo Content of TPS 0%	ensile strength of PBAT/TPS/nano-2 Standard deviation (MPa) 0.30 1.23 2.09 0.15 1.68 n and confidence interval of tensile streng ngation at break of PBAT/TPS/ nano Standard deviation (%) 29.68	ZnO Confidence interval (MPa 10.36±0.59 16.67±2.41 26.24±4.09 16.18±0.30 11.15±3.29 gth data of PBAT/TPS/ nano-ZnO o-ZnO Confidence interval (%) 525.24±58.17
composites. T Content of TPS 0% 0.5% 1% 1.5% 2% Table S3. Standard deviation composites. Elo Content of TPS 0% 0.5%	ensile strength of PBAT/TPS/nano-2 Standard deviation (MPa) 0.30 1.23 2.09 0.15 1.68 n and confidence interval of tensile streng ngation at break of PBAT/TPS/ nano Standard deviation (%) 29.68 103.07	ZnO Confidence interval (MPa 10.36±0.59 16.67±2.41 26.24±4.09 16.18±0.30 11.15±3.29 gth data of PBAT/TPS/ nano-ZnO o-ZnO Confidence interval (%) 525.24±58.17 619.89±202.00
composites. T Content of TPS 0% 0.5% 1% 1.5% 2% Table S3. Standard deviation composites. Elo Content of TPS 0% 0.5% 1%	ensile strength of PBAT/TPS/nano-2 Standard deviation (MPa) 0.30 1.23 2.09 0.15 1.68 n and confidence interval of tensile streng ngation at break of PBAT/TPS/ nano Standard deviation (%) 29.68 103.07 80.73	ZnO Confidence interval (MPa 10.36±0.59 16.67±2.41 26.24±4.09 16.18±0.30 11.15±3.29 gth data of PBAT/TPS/ nano-ZnO D-ZnO Confidence interval (%) 525.24±58.17 619.89±202.00 541.81±158.24
composites. T Content of TPS 0% 0.5% 1% 1.5% 2% Table S3. Standard deviation composites. Elo Content of TPS 0% 0.5% 1% 1% 1.5%	ensile strength of PBAT/TPS/nano-2 Standard deviation (MPa) 0.30 1.23 2.09 0.15 1.68 n and confidence interval of tensile streng ngation at break of PBAT/TPS/ nano Standard deviation (%) 29.68 103.07 80.73 2.85	ZnO Confidence interval (MPa 10.36±0.59 16.67±2.41 26.24±4.09 16.18±0.30 11.15±3.29 gth data of PBAT/TPS/ nano-ZnO O-ZnO Confidence interval (%) 525.24±58.17 619.89±202.00 541.81±158.24 441.02±5.58

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.