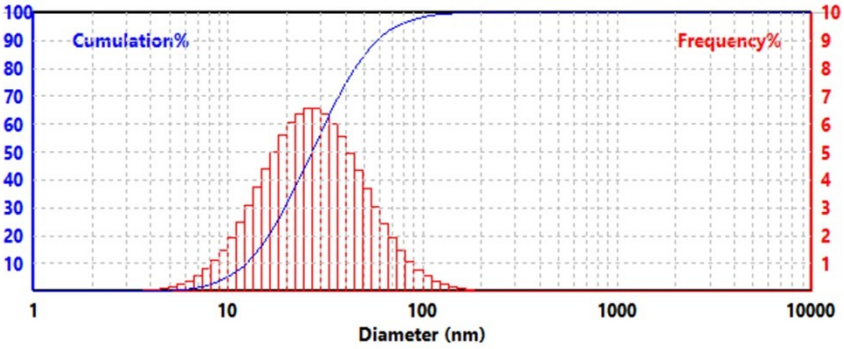
Supplementary Information

Photon Correlation Nano Laser Particle Size Analyzer test report
Winner802

Jinan Winner Particle Instruments Stock Co., Ltd.

1-10000 nm **Print Time:21-Jan-21 3:48:08 PM**

Sample information		
Sample name: pH 8.5		
Sample supplier: 11		
Test Condition		
Test temperature: 25°C	Dispersion medium: Water	Medium viscosity: 8.904E-04Pa·s
Medium refractive index: 1.333	Angle: 90.0Deg	Delay Unit Time: 5us
LightColor:		
Test Information		
Test company: 22		
Tester: 33	Test time:21-Jan-21 3:48:07 PM	
Test Result:		
Dav Diameter:Xav=49.54 nm	Dispersion Index:PI=0.4456	Photon Count:8
D10= 12.45 nm	D50= 27.11 nm	D90= 59.14 nm



Size	V%	S%	Size	V%	S%	Size	V%	S%	Size	V%	S%
2.46	0.00	0.00	9.05	1.10	3.51	33.25	6.37	63.17	122.17	0.37	99.35
2.72	0.00	0.01	10.00	1.49	5.00	36.75	6.03	69.20	135.03	0.25	99.59
3.01	0.01	0.01	11.05	1.95	6.95	40.62	5.55	74.75	149.25	0.16	99.75
3.32	0.01	0.03	12.22	2.48	9.43	44.89	4.97	79.72	164.96	0.10	99.85
3.67	0.02	0.05	13.50	3.09	12.52	49.62	4.34	84.06	182.33	0.06	99.91
4.06	0.04	0.09	14.92	3.73	16.25	54.84	3.68	87.74	201.53	0.04	99.95
4.49	0.06	0.15	16.50	4.39	20.63	60.62	3.04	90.78	222.75	0.02	99.97
4.96	0.10	0.25	18.23	5.02	25.65	67.00	2.44	93.22	246.21	0.01	99.98
5.48	0.17	0.42	20.15	5.59	31.24	74.06	1.91	95.13	272.13	0.01	99.99
6.06	0.25	0.67	22.28	6.06	37.30	81.85	1.45	96.58	300.79	0.00	99.99
6.70	0.38	1.06	24.62	6.39	43.69	90.47	1.08	97.66	332.46	0.00	100.00
7.41	0.56	1.62	27.21	6.56	50.25	100.00	0.78	98.43	367.47	0.00	100.00
8.19	0.80	2.41	30.08	6.55	56.80	110.53	0.54	98.98			

Contact Us	
Company Name:Jinan Winner Particle Instruments Stock Co., Ltd.	
Tel: (+86)531-88873312	Fax:0531-88873392
E-mail:jnwinner@126.com	Web:http://www.jnwinner.com

Figure S1. A DLS result of the guava leaf extract-synthesized AgNPs.

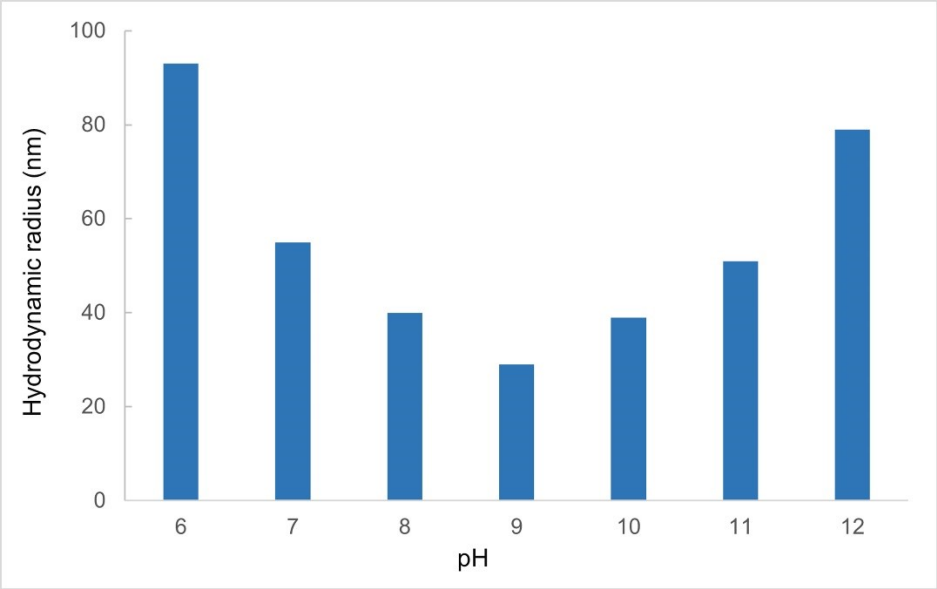


Figure S2. Hydrodynamic radius of AgNPs-GuLE synthesized at different pH conditions.

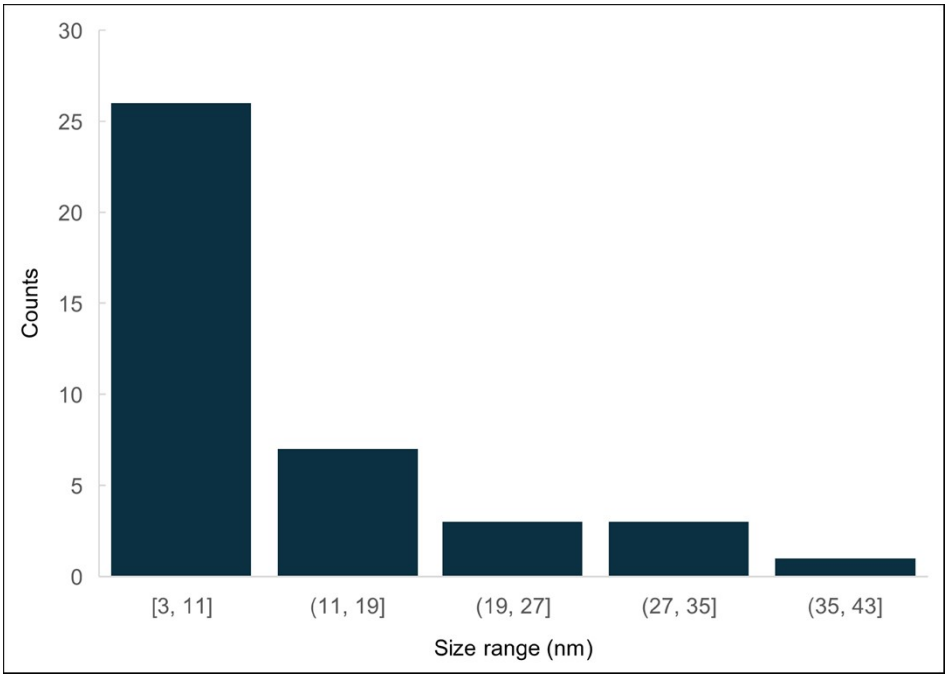
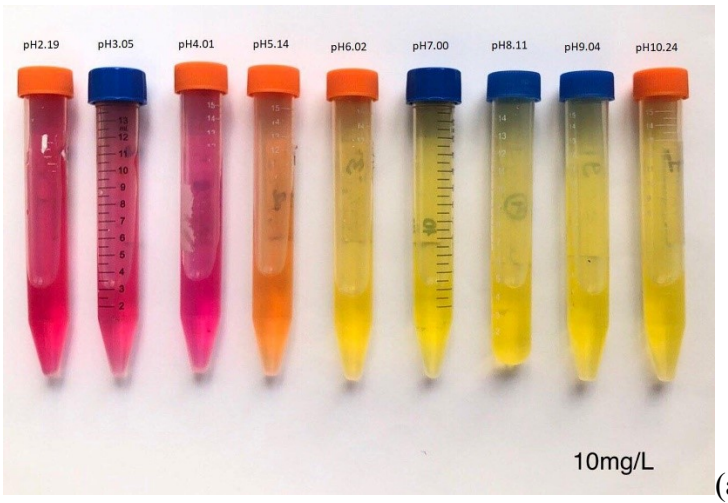
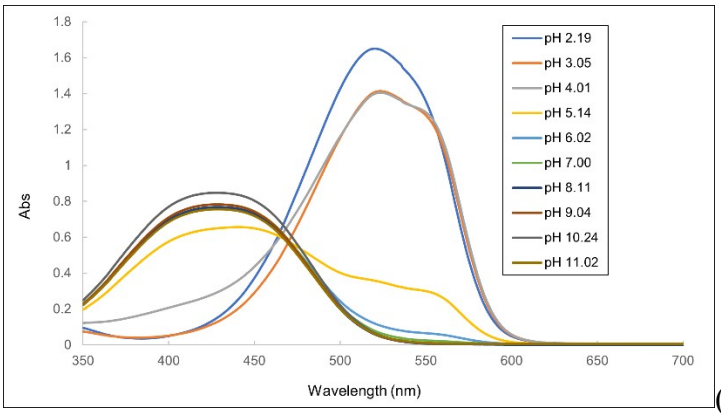


Figure S3. Histogram of AgNPs-GuLE's size distribution based on the TEM image.

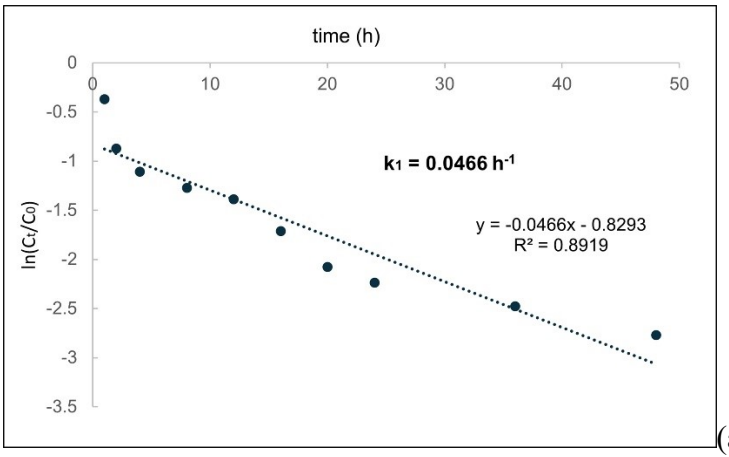


(a)

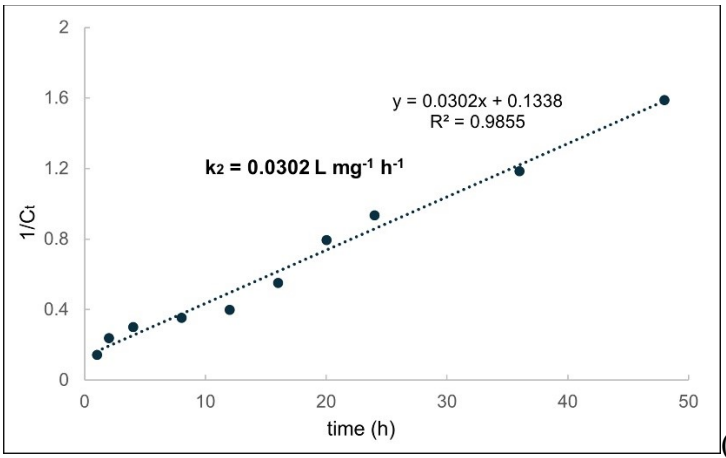


(b)

Figure S4. The color change of MR at varying pH (a) and the corresponding UV-Vis spectra (b).



(a)



(b)

Figure S5. Plots of the pseudo-first-order kinetic (PFO) model [$\ln(C_t/C_0) = -k_1t$] (a) and the pseudo-second-order (PSO) kinetic model [$1/C_t - 1/C_0 = k_2t$] (b) (C_t is the MR's concentration at any light exposure time, C_0 represents the initial MR's concentration, k_1 denotes the PFO rate constant, and k_2 is designated as the PSO rate constant.

(a) (b) (c)

Figure S6. Results of antibacterial activity of $AgNO_3$ (S1), guava leaf extract (S2), and guava leaf extract-synthesized AgNPs against *S. aureus* (a), *E. faecalis* (b), and *P. aeruginosa* (c). (negative control: distilled water; positive control: chloramphenicol 30 mg/L).

Table S1. Preliminary assessment of the AgNPs-GuLE's reusability in the MR photocatalytic degradation.

Cycle	**%PD (± SD)**
1	96 ± 0.2 %
2	71.6 ± 2.4 %
3	76.1 ± 3.2 %