

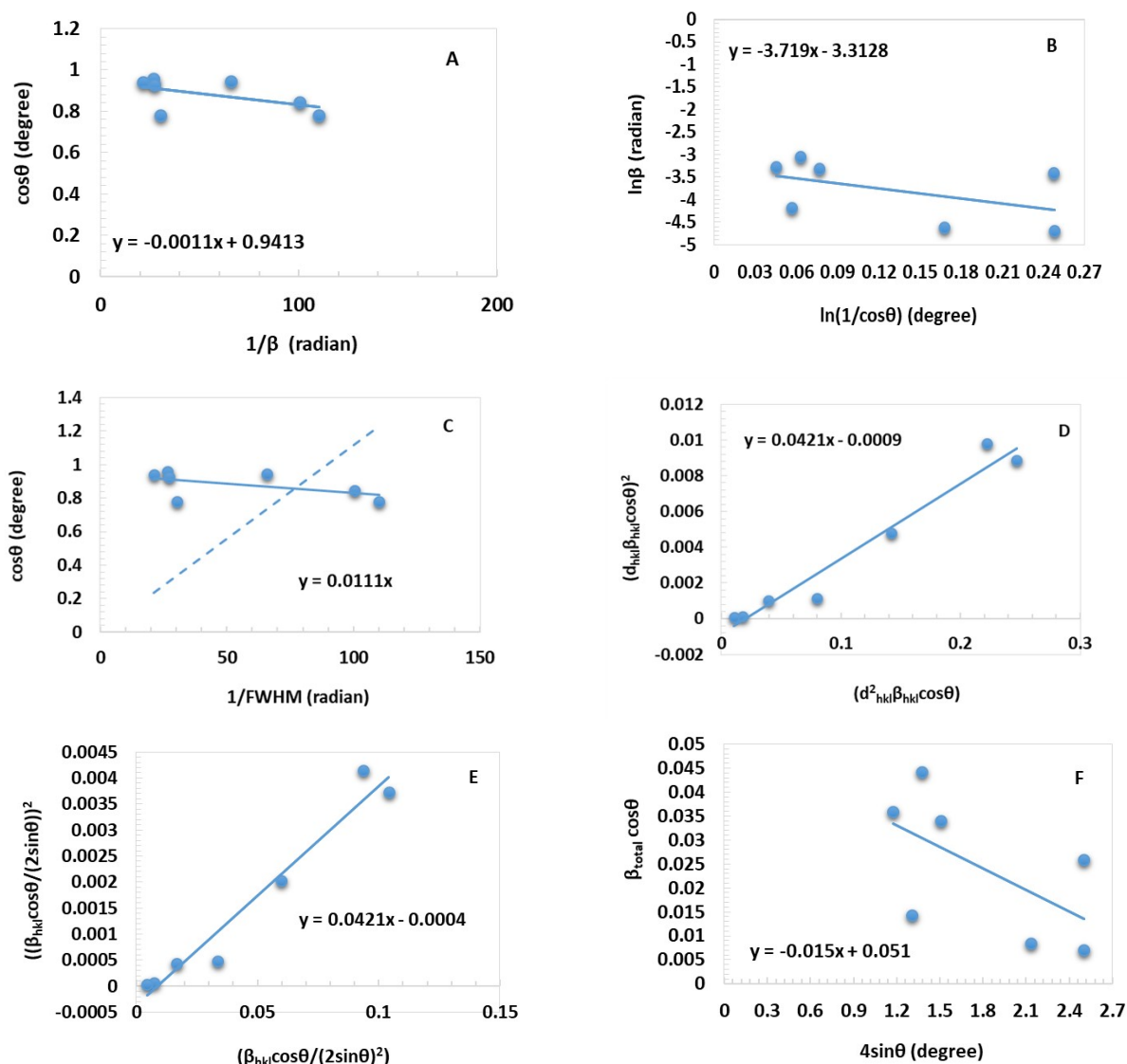


Fig. S_1 Linear Straight-line Model of the Scherrer Equation (A), Monshi-Scherrer's Model Equation (B), Sahadat-Scherrer's Model Equation (C), Size-strain plot's Model Equation (D), Halder Wagner's Model Equation (E), and Williamson-Hall's Model Equation (F) of Ag_2O NPs.

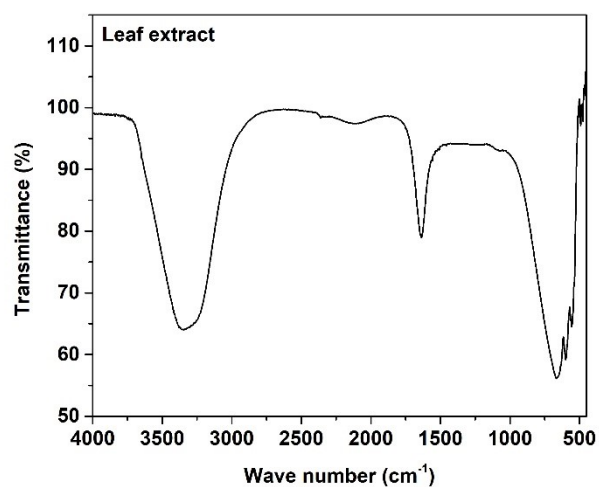


Fig. S_2 FTIR spectrum of *Moringa oleifera* leaf extract

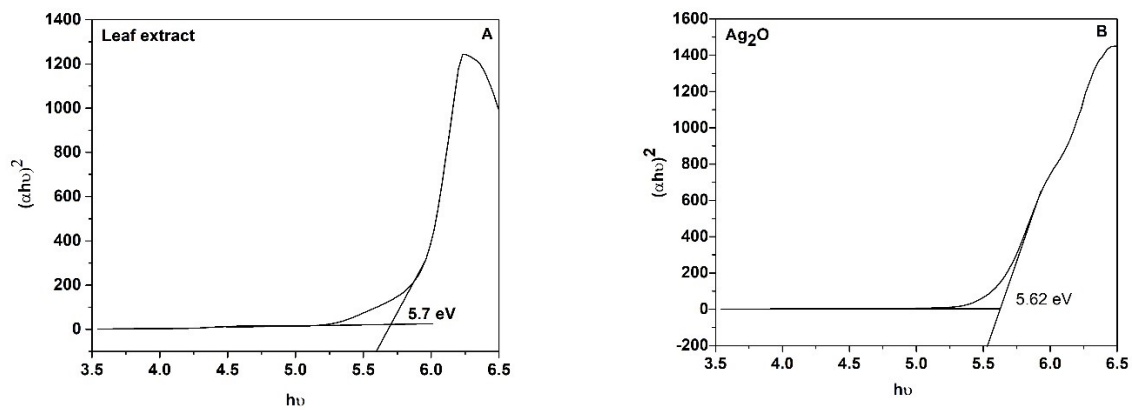


Fig. S_3 Optical band gap of *Moringa oleifera* leaf extract (A) and synthesized Ag₂O nanoparticles utilizing leaf extract (B)

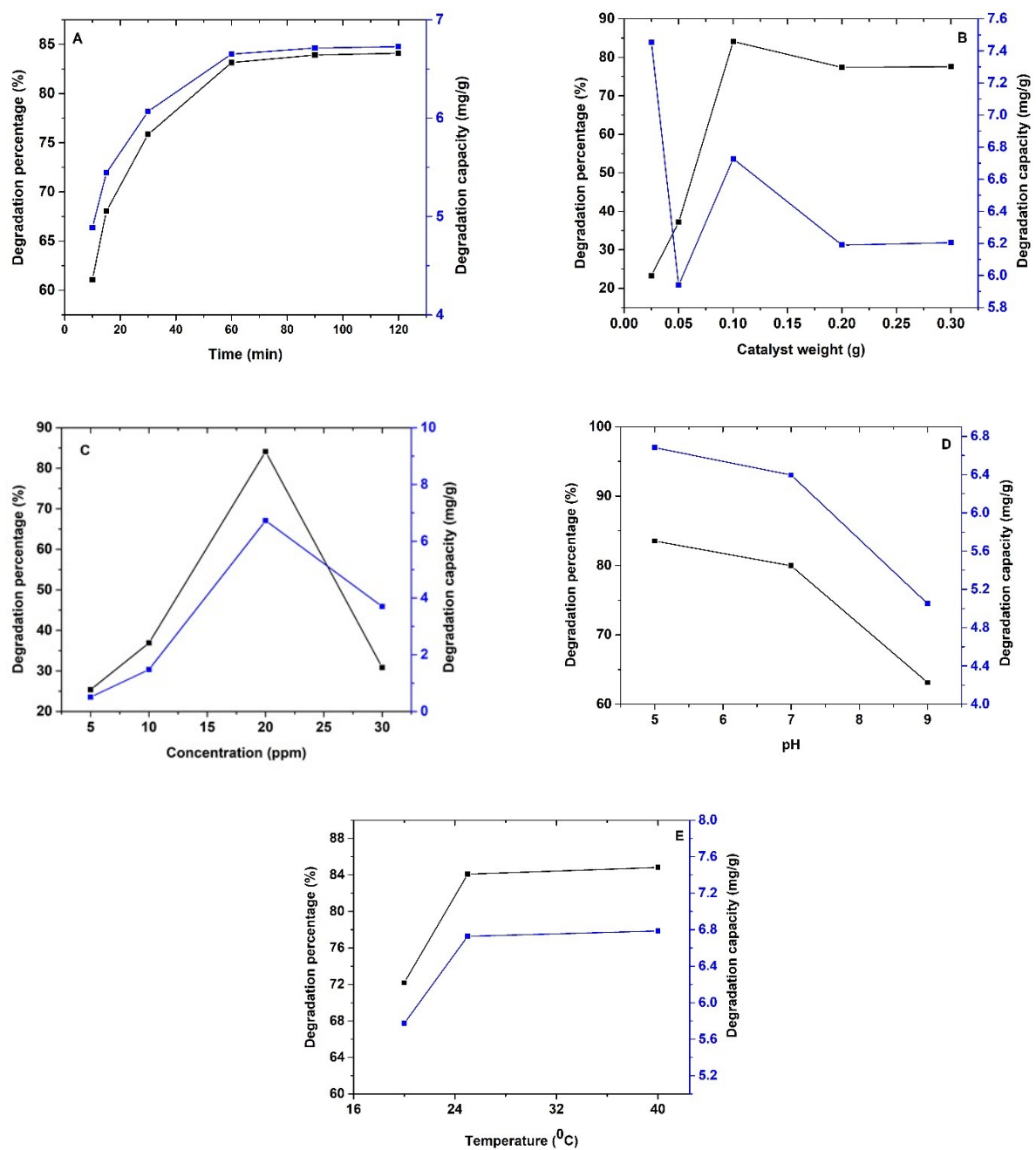


Fig. S_4 Degradation percentage and degradation capacity of dye depending on time intervals (A), catalyst dosages (B), dye concentration (C), pH (D), and temperature (E) variation

Table S_1: MIC and MBC results of the *Moringa oleifera* leaf extract generated Ag₂O against *E. coli* and *S. aureus*

Bacterial Strains	MIC							
	400 µg/mL	200 µg/mL	100 µg/mL	50 µg/mL	25 µg/mL	12.5 µg/mL	6.25 µg/mL	3.125 µg/mL
<i>E. coli</i>	-	-	-	-	+	+	+	+
<i>S. aureus</i>	-	-	-	-	+	+	+	+
	MBC							
	400 µg/mL	200 µg/mL	100 µg/mL	50 µg/mL	25 µg/mL	12.5 µg/mL	6.25 µg/mL	3.125 µg/mL
<i>E. coli</i>	-	-	-	+	+	+	+	+
<i>S. aureus</i>	-	-	-	+	+	+	+	+

Note: ‘+’ means presence of bacterial growth; ‘-’ means absence of bacterial growth