Supporting information

Effect of Morphology on Larvicidal activity of chemically synthesized zinc oxide nanoparticles against mosquito vectors

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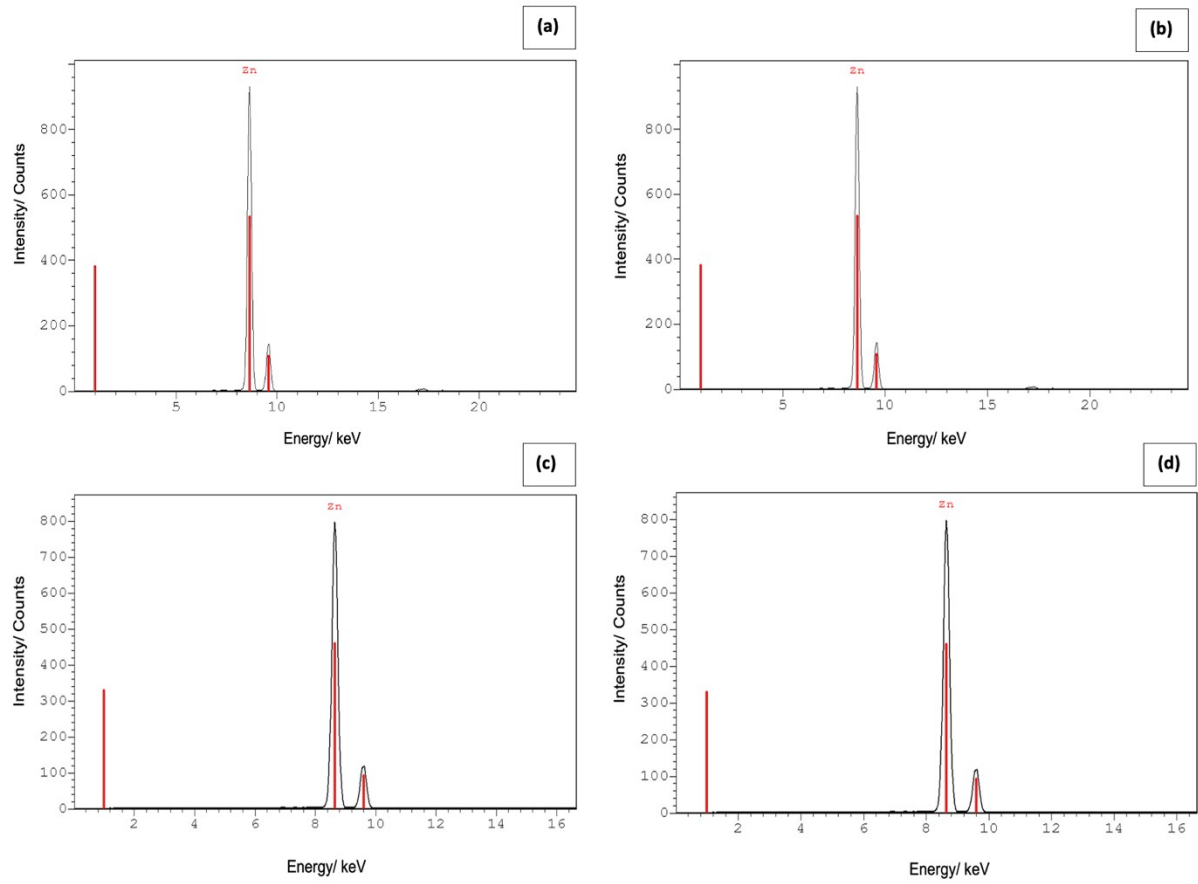[c]Postgraduate Institute of Science, University of Peradeniya, Peradeniya 20400, Sri Lanka.

Table of contents

Figure.S1: XRF report of zinc oxide nanoparticles. (a) Star shape, (b) Needle shape, (c) Plate shape, (d) Cubic shape
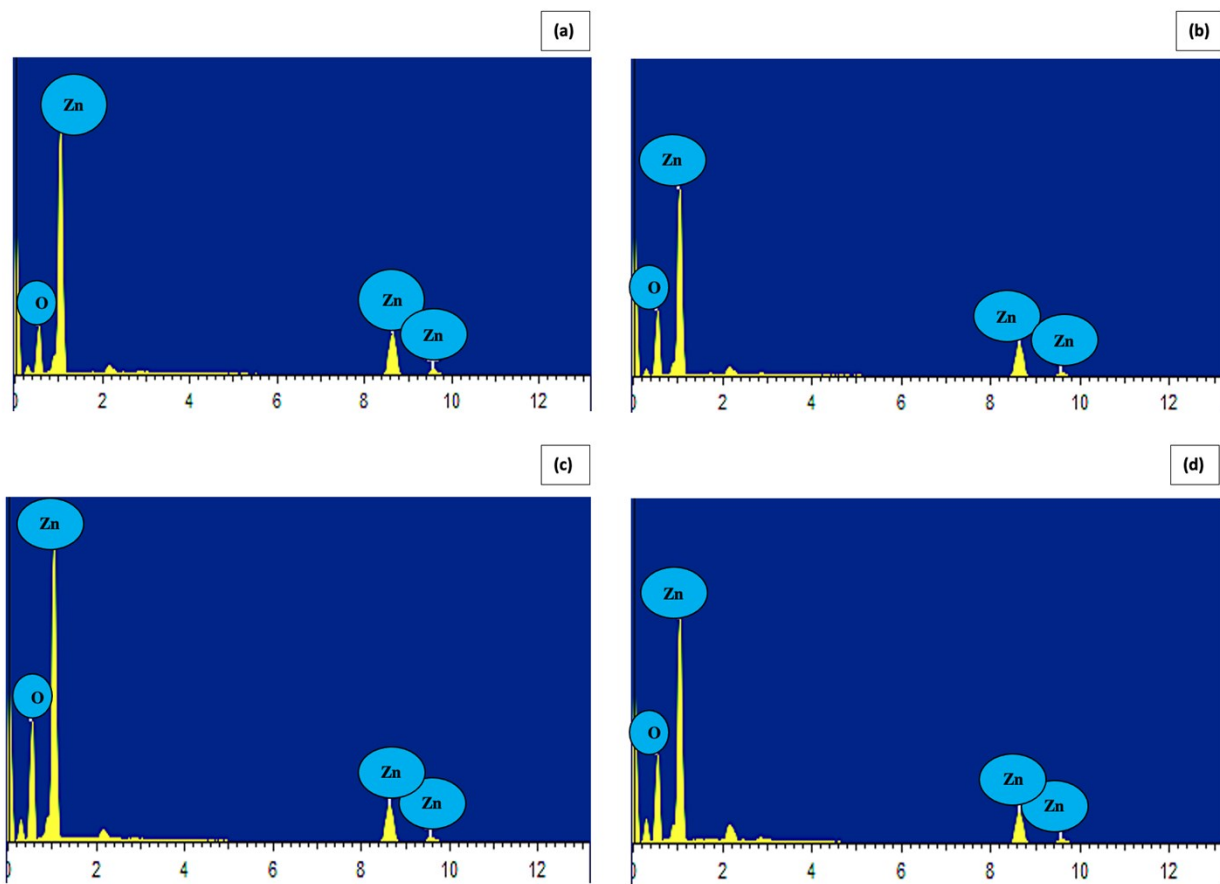
Figure.S2: EDX spectrum of zinc oxide nanoparticles. (a) Star shape, (b) Needle shape, (c) Plate shape, (d) Cubic shape

Table S1: Mean mortality of *Aedes albopictus* mosquito larvae when exposed to different concentrations of four different morphologies of ZnO NPs

Test sample nanoparticles	Concentrations (mg/L)	Mean mortality	LC$_{50}$ (mg/L)	R	Regression equation
Star shape	25	40.0 ± 0.57	38.90	0.807	Y = 1.986X + 1.841
	50	53.0 ± 0.67			
	75	60.0 ± 0.57			
	100	87.0 ± 0.33			
Needle shape	25	40.0 ± 0.57	47.53	0.831	Y = 1.189X + 3.005
	50	43.0 ± 0.88			
	75	63.0 ± 0.67			
	100	67.0 ± 0.88			
Plate shape	25	30.0 ± 0.57	68.38	0.992	Y = 1.230X + 2.743
	50	43.0 ± 0.88			
	75	50.0 ± 0.57			
	100	60.0 ± 0.57			
Cubic shape	25	27.0 ± 0.33	50.24	0.933	Y = 2.653X + 0.487
	50	40.0 ± 0.57			
	75	60.0 ± 0.57			
	100	73.0 ± 0.33			

LC$_{50}$: lethal dose to kill 50% of the exposed larvae, significant at $P < 0.05$ level; R: correlation coefficient

Table S2: Mean mortality of *Anopheles vagus* mosquito larvae when exposed to different concentration of four different morphologies of ZnO NPs

Test sample nanoparticles	Concentrations (mg/L)	Mean Mortality	LC$_{50}$ (mg/L)	R	Regression equation
Star shape	25 50 75 100	83.0 ± 0.33 87.0 ± 0.33 90.0 ± 0.57 97.0 ± 0.33	4.78	0.886	Y = 1.191X + 4.190
Needle shape	25 50 75 100	70.0 ± 0.57 80.0 ± 0.57 83.0 ± 0.33 87.0 ± 0.33	6.51	0.995	Y = 0.913X + 4.257
Plate shape	25 50 75 100	67.0 ± 0.33 76.0 ± 0.33 83.0 ± 0.33 90.0 ± 0.57	13.64	0.976	Y = 1.378X + 3.436
Cubic shape	25 50 75 100	77.0 ± 0.33 83.0 ± 0.33 90.0 ± 0.57 97.0 ± 0.33	10.47	0.941	Y = 1.624X + 3.343

LC$_{50}$: lethal dose to kill 50% of the exposed larvae, significant at $P < 0.05$ level; R: correlation coefficient