

Fluorescence Polystyrene nanoplastics and chromium (III) nitrate nonahydrate individual and complex toxicity on *Artemia salina*

Mahalakshmi Kamalakannan^a, John Thomas^{a*2}, Natarajan Chandrasekaran^{a*1}

^aCentre for Nanobiotechnology, Vellore Institute of Technology

Vellore - 632014, Tamil Nadu, India

* Corresponding author1,

Prof. Dr. Natarajan Chandrasekaran, Ph.D. D.Sc. FRES., FRSB., FRSC

Professor higher academic grade

Centre for Nanobiotechnology,

Vellore Institute of Technology,

Vellore - 632014, Tamil Nadu, India

Email: nchandrasekaran@vit.ac.in, nchandra40@hotmail.com

<http://orcid.org/0000-0002-0586-134X>

Tel.+91 416 2202624. Fax. +91 416 2243092

* Corresponding author 2,

Dr. John Thomas M.Sc., M.Phil., Ph.D.

Associate Professor

Centre for Nanobiotechnology, Vellore Institute of Technology
(VIT), Vellore, Tamil Nadu

Tel-: +91 416 2204213; fax: +91 416 2243092

E-mail address: john.thomas@vit.ac.in; th_john28@yahoo.co.in

Sample	peak 1 $\lambda_{ex}/\lambda_{em}$	Stroke shift $\Delta\lambda$	Fluorescence intensity (nm)	peak 2 $\lambda_{ex}/\lambda_{em}$	Stroke shift $\Delta\lambda$	Fluorescence intensity (nm)
		Sample ID		Zeta mV		
		F-PSNPs		-32 mv		
F-PSNPs	216/487	271	10000	262/486	225	2945
		F-PSNPs 10 + CNN 5 mg/L		-38.1 mV		
		F-PSNPs 10 + CNN 10 mg/L		-20.6 mV		
		F-PSNPs 10 + CNN 15 mg/L		-16 mV		
		F-PSNPs 10 + CNN 20 mg/L		-9 mv		

Table: (S1) Zeta potential utilized to investigate particle stability in natural seawater at varied F-PSNPs+CNN concentrations.

F-PSNPs+CNN 100/5 mg/L	224/488	264	3130	262/484	222	1643
Concentration of F-PSNPs mg/L	Concentration of CNN mg/L	Observation toxicity %	Expected toxicity %	Ratio of Inhibition (RI)	P-values	Mode of action
F-PSNPs+CNN 100/10 mg/L	222/488	266	1313	262/484	222	1396
F-PSNPs+CNN 100/15 mg/L	224/484	260	1665	263/484	221	1856
F-PSNPs+CNN 100/20 mg/L	224/484	260	1351	262/484	222	1369

Table (S2) Three-dimensional fluorescence characteristics parameters of F-PSNPs+CNN

10	5	30	30.4	0.9868	P > 0.05	Additive
10	10	40	33.1	1.2028	P > 0.05	Additive
10	15	60	47.8	1.2552	P > 0.05	Additive
10	20	83	59	1.1037	P > 0.05	Additive

Table (S3) Independent action model for the complex of F-PSNPs and CNN