Supporting Information

Title

Lanthanum ions doped nano TiO_2 encapsulated in Zeozyme and impregnated in a polystyrene film - As photocatalyst for degradation of diuron in aquatic ecosystem

B. R. Saranya[a], V. Sathiyanarayanan[b] and S. T. Maheswari*[a]

a. Department of Analytical Chemistry, International Institute of Biotechnology and Toxicology (IIBAT), Padappai, Chennai, Tamil Nadu - 601 301, India.

E-mail: maheswariraja@yahoo.com

b. Department of Analytical Chemistry, Palamur biosciences Pvt. Ltd, Mahabubnagar Telangana State - 509 002, India.

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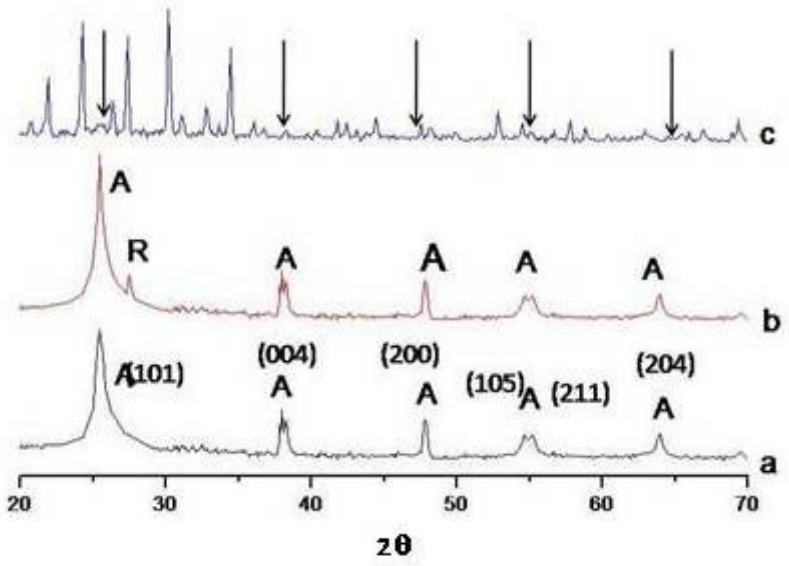


Fig. S1 XRD spectra of (a) np; (b) Lnp; (c) ZLT.

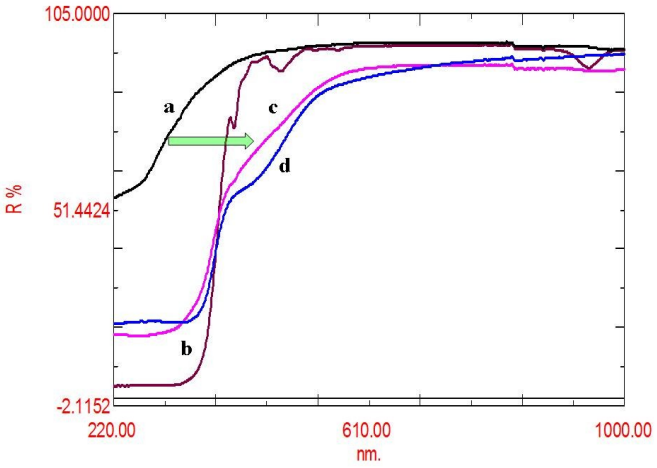


Fig. S2 Red shifted DRS-UV spectra of (a) NaY Zeolite; (b) Lnp; (c) ZLnp; (d) np.

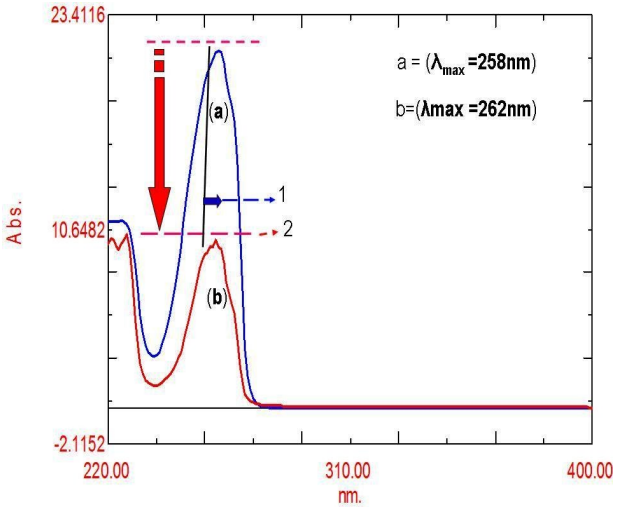


Fig. S3 Blue shifted DRS-UV spectra of (a) Bare polystyrene film; (b) ZLT;

(1) Bathochromic shift $\Delta\lambda = 4$ nm;

(2) Hypochromic shift -10 fold decrease in intensity.

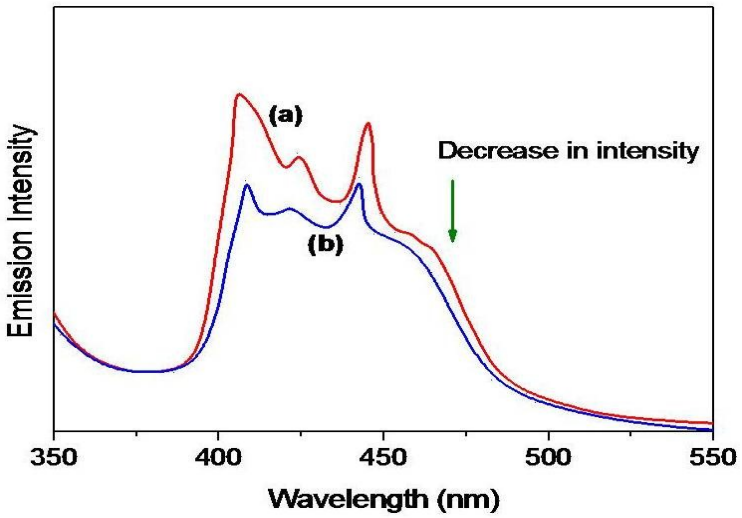


Fig. S4 Fluorescence spectra of (a) np; (b) Lnp.

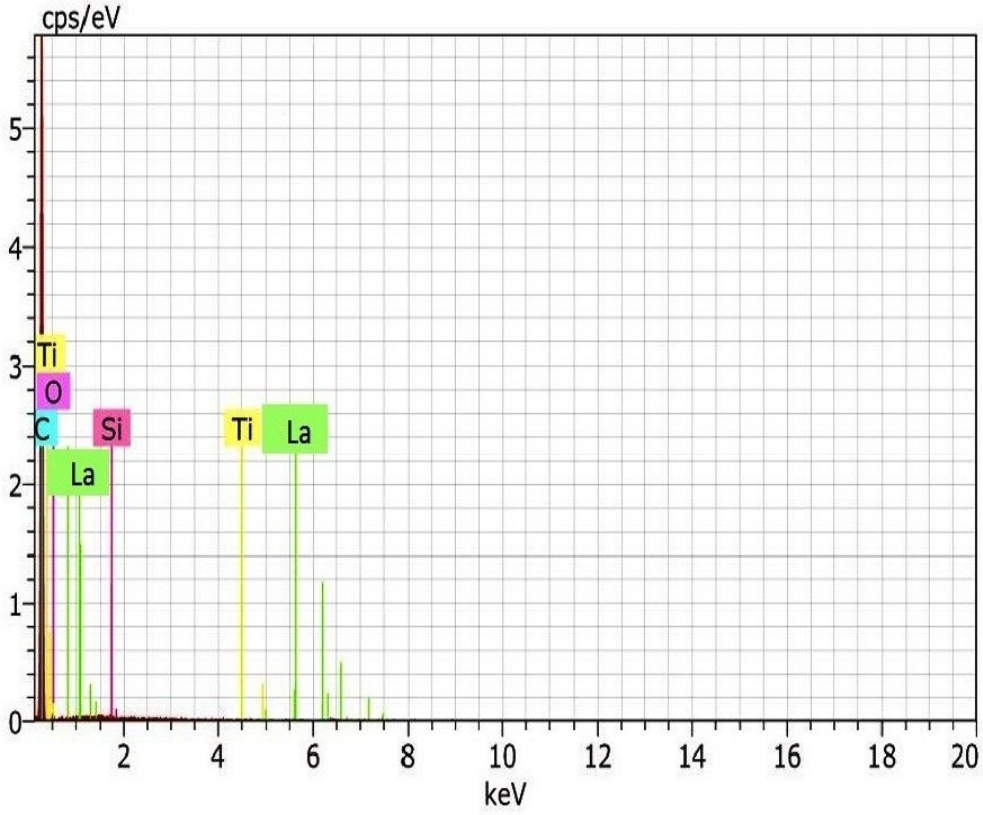


Fig. S5 SEM-EDAX Spectrum.

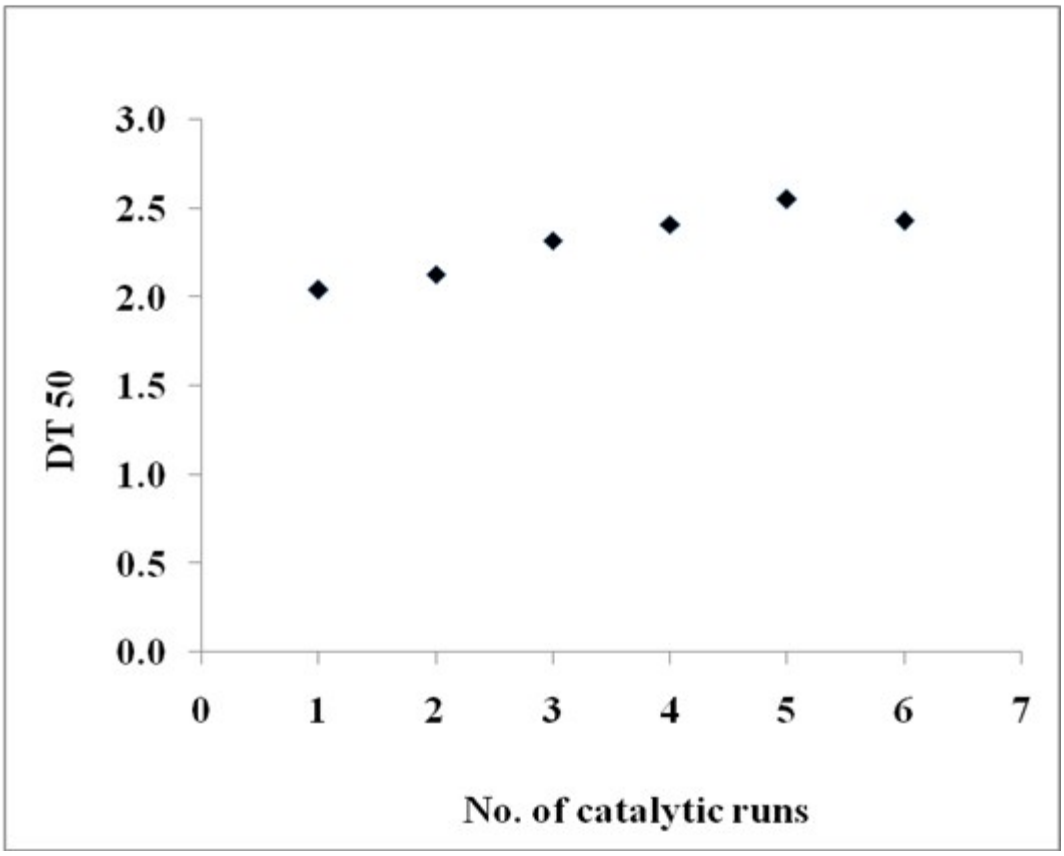
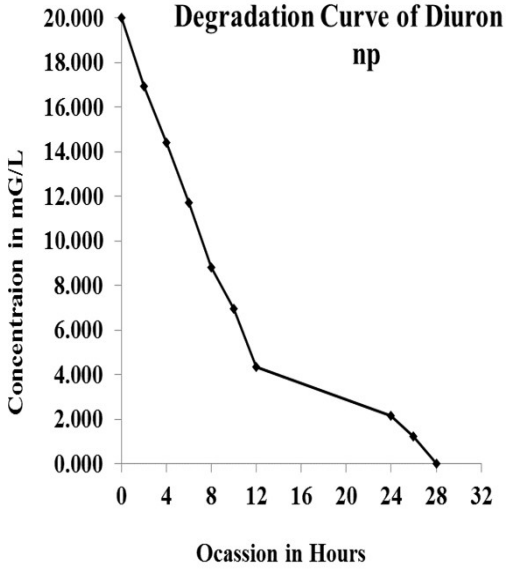
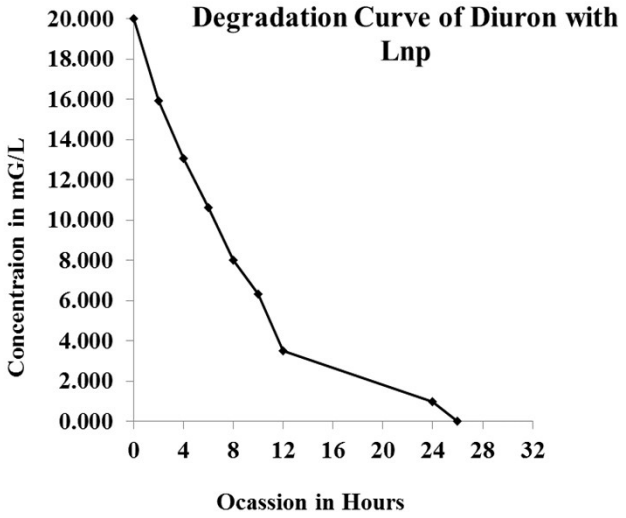


Fig. S6 Reusability of ZLT for degradation of diuron in ecosystem.



(a)



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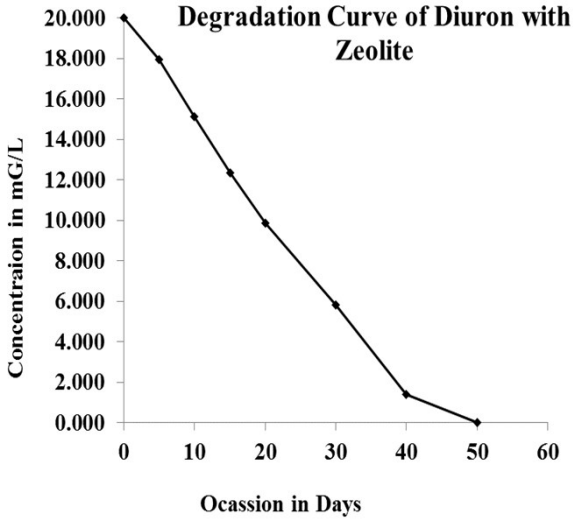
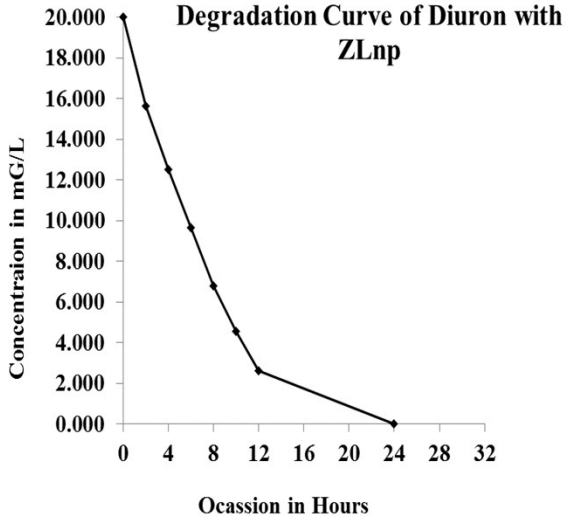


(c)



(d)

Fig. S7 Degradation curves of diuron with (a) np; (b) Lnp; (c) NaY Zeolite; (d) ZLnp.

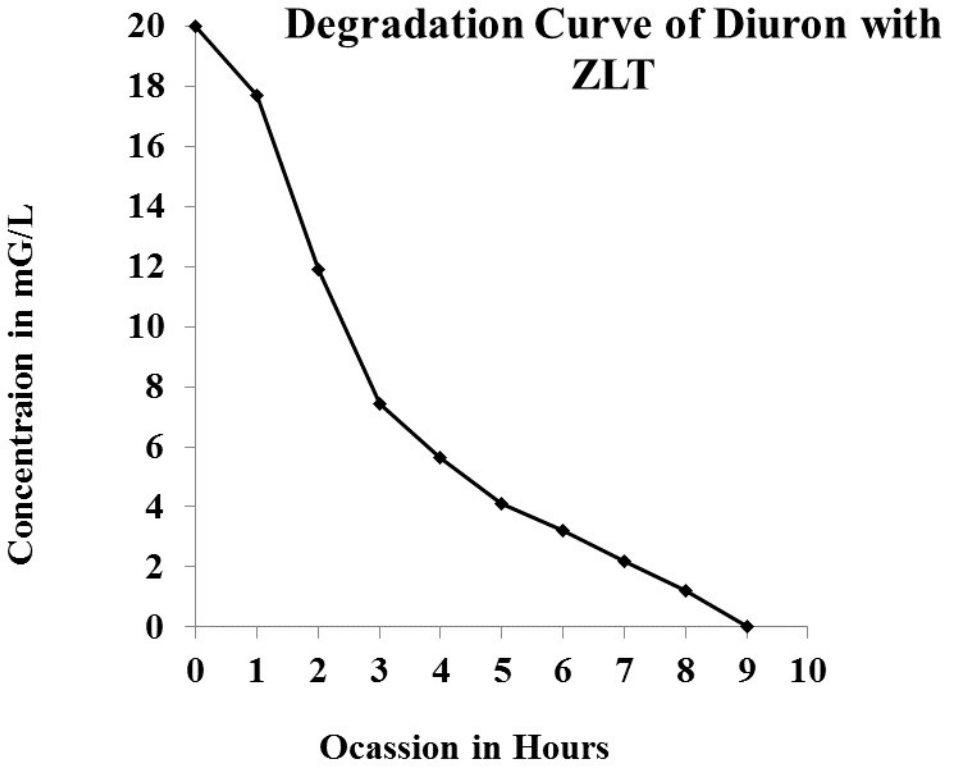


Fig. S8 Degradation curve of diuron.

Table S1 BET Results

SampleSurface	area (m^2/g)	Pore volume (ml/g)
NaY	628	0.38
ZLnp	3.2808	0.06

Table S2 Comparison results of diuron degradation with all catalysts prepared

S.No	Catalyst	Weight of catalyst (grams)	Time (hours)	DT_{50}	Catalyst recovery	Reusability
1	nP	1.021	28	6.69	10.50%	No
2	Lnp	2.516	26	5.33	10.18%	No
3	NaY Zeolite	2.557	50*	11.11*	50.03%	No
4	ZLnP	1.685	24	4.24	25.22%	No
5	ZLT	0.258	9	2.01	100%	Yes

***Days**

Table S3 DT_{50} values of Diuron

Hours	Concentration (mg/L)	Log of Concentration
0	20	1.3010
1	18	1.2480
2	12	1.0751
3	7	0.8709
4	6	0.7510
5	4	0.6129
6	3	0.5046
7	2	0.3389
8	1	0.0808
9	0	0.0000
	Slope	-0.1501
	DT_{50}	2.01 h