Electronic Supplementary Information (ESI)

Nanocellulose/TiO_2 composites: Preparation, characterization and application in photocatalytic degradation of a potential endocrine disruptor, mefanamic acid, from aqueous media.

Manali Rathod[a,c], Paresh Moradeeya[b], Soumya Haldar[c], Shaik Basha[b]*

[a]Academy of Scientific and Innovative Research (AcSIR), CSIR-CSMCRI, Bhavnagar 364002, Gujarat, India.

[b]Hyderabad Zonal Centre, CSIR-National Environmental Engineering Research Institute, IICT Campus, Tarnaka, Hyderabad 500 007, Telangana, India.

[c]Analytical and Environmental Science Division and Centralized Instrument Facility, CSIR-Central Salt & Marine Chemicals Research Institute (CSIR-CSMCRI), Bhavnagar 364 002, Gujarat, India.

*Corresponding Author: (Shaik Basha) Telefax: +91-40-27160639,

E mail: s_basha@neeri.res.in

Table S1 Surface properties of nanocellulose (NC) and NCTs

Parameters	**Catalyst**				
	Nanocellulose (NC)	**5% TiO_2 NCT,**	**10% TiO_2 NCT**	**25% TiO_2 NCT**	**50% TiO_2 NCT**
Surface area, S_{BET} (m^2/g)	258	310	348	335	320
V_p (Cm^3/g)	0.152	0.167	0.237	0.183	0.179
S_t (m^2/g)	285	308	365	335	318
S_{micro} (m^2/g)	255	287	267	302	304
S_{meso} (m^2/g)	24	19	84	22	17
V_{micro} (ml/g)	0.141	0.162	0.141	0.164	0.175
V_{meso} (ml/g)	0.029	0.024	0.124	0.024	0.020
Average pore radius (Å)	10.18	11.18	12.47	10.41	11.37

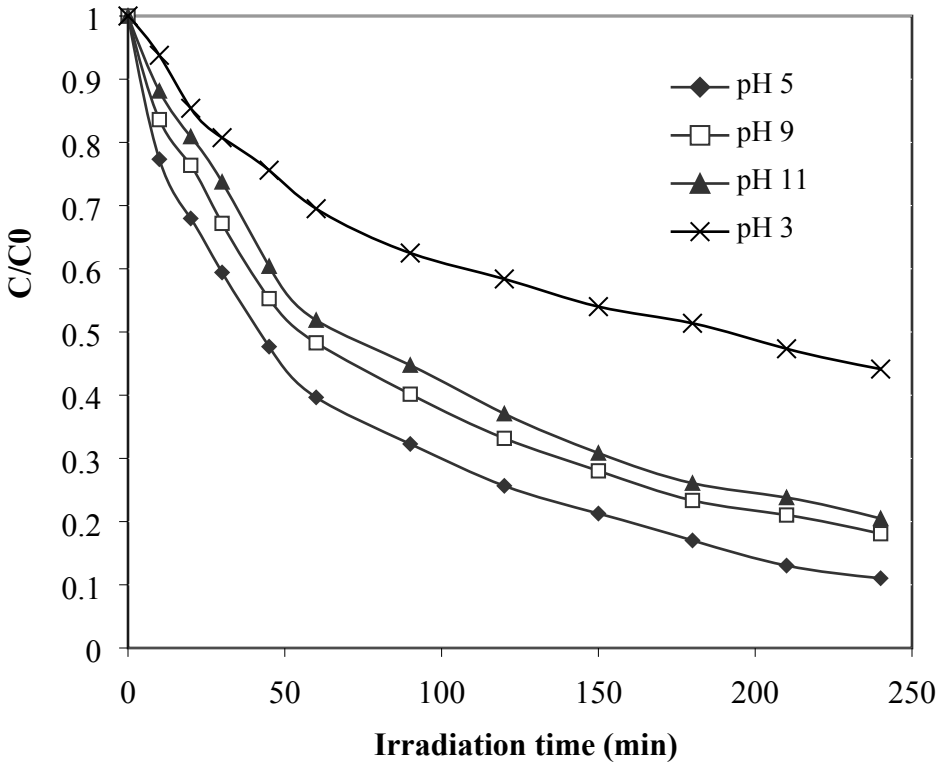

Fig. S1 Effect of pH on photocatalytic degradation of MEF by 10 % TiO_2 NCT (♦) pH 5, (□) pH 9, (▲) pH 11, (x) pH 3

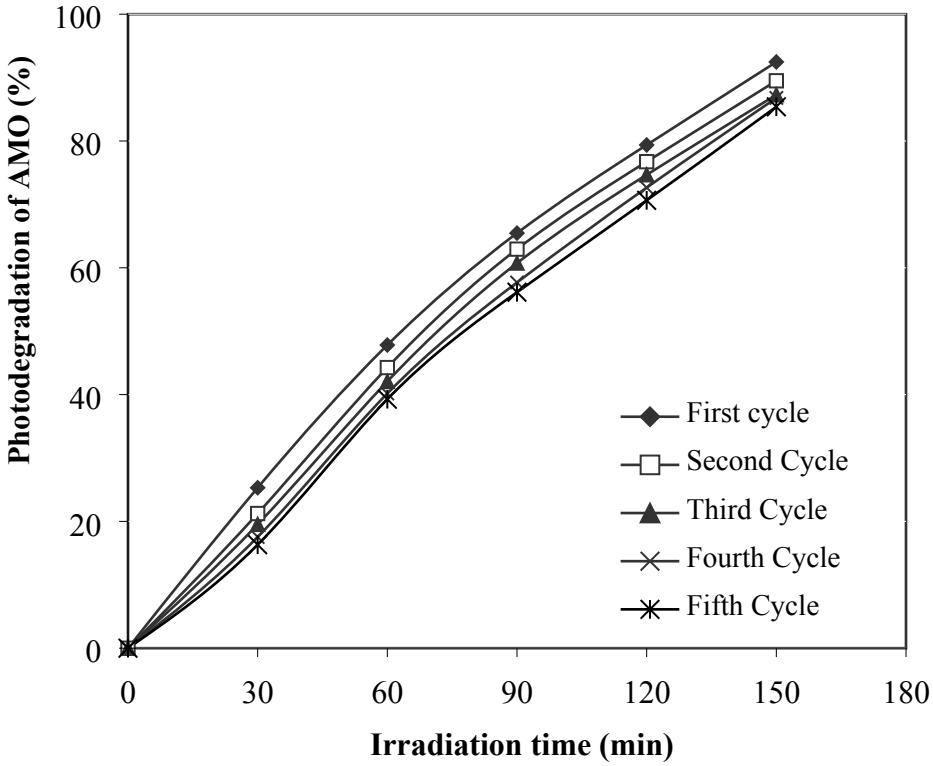

Fig. S2 Photocatalytic degradation of MEF by 10 % TiO_2 NCT
(♦) First cycle, (□) Second cycle, (▲) Third cycle, (x) Fourth, (*) Fifth

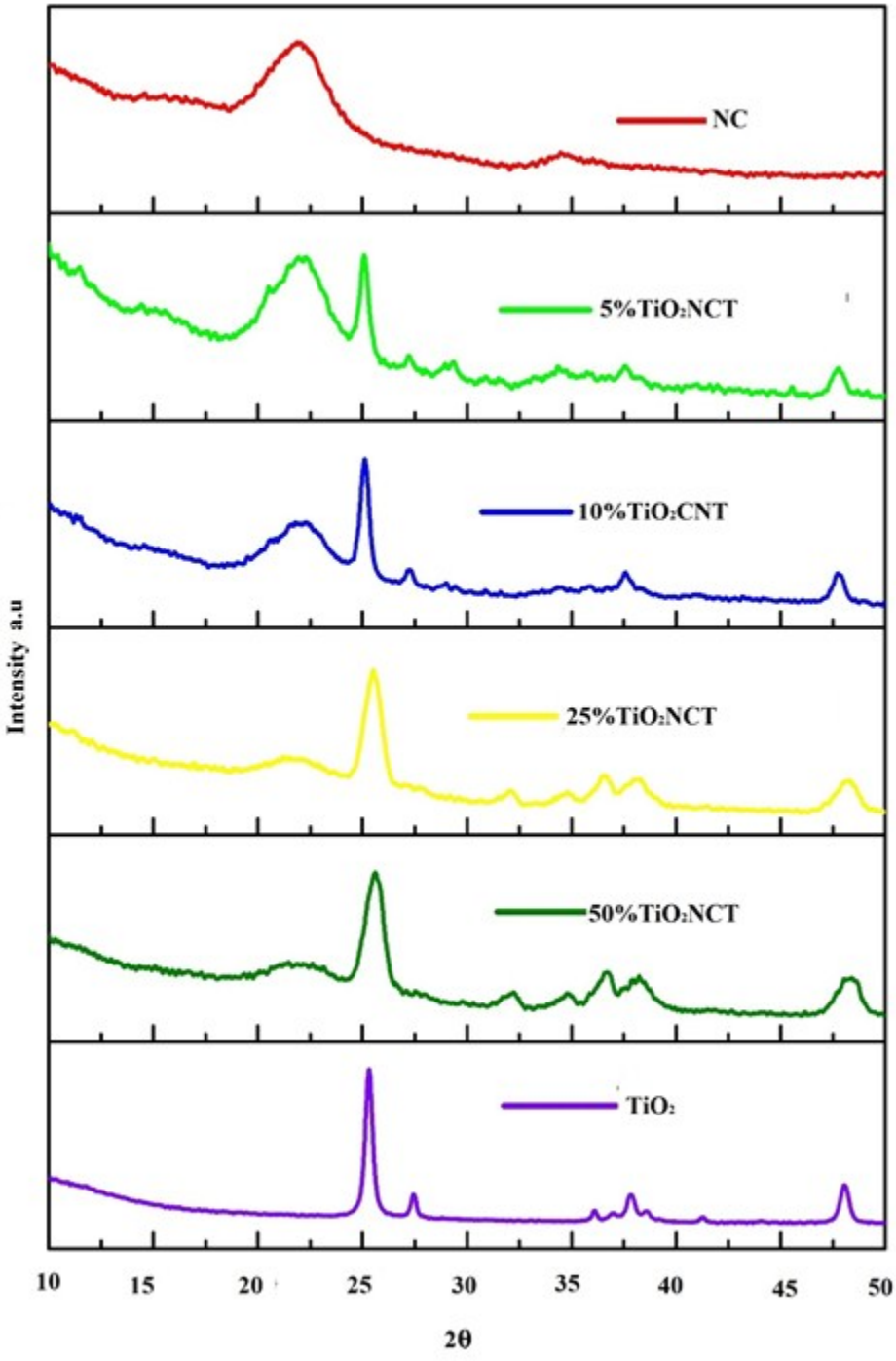

Fig. S3 X-Ray diffraction patterns of TiO_2, NC and NCTs

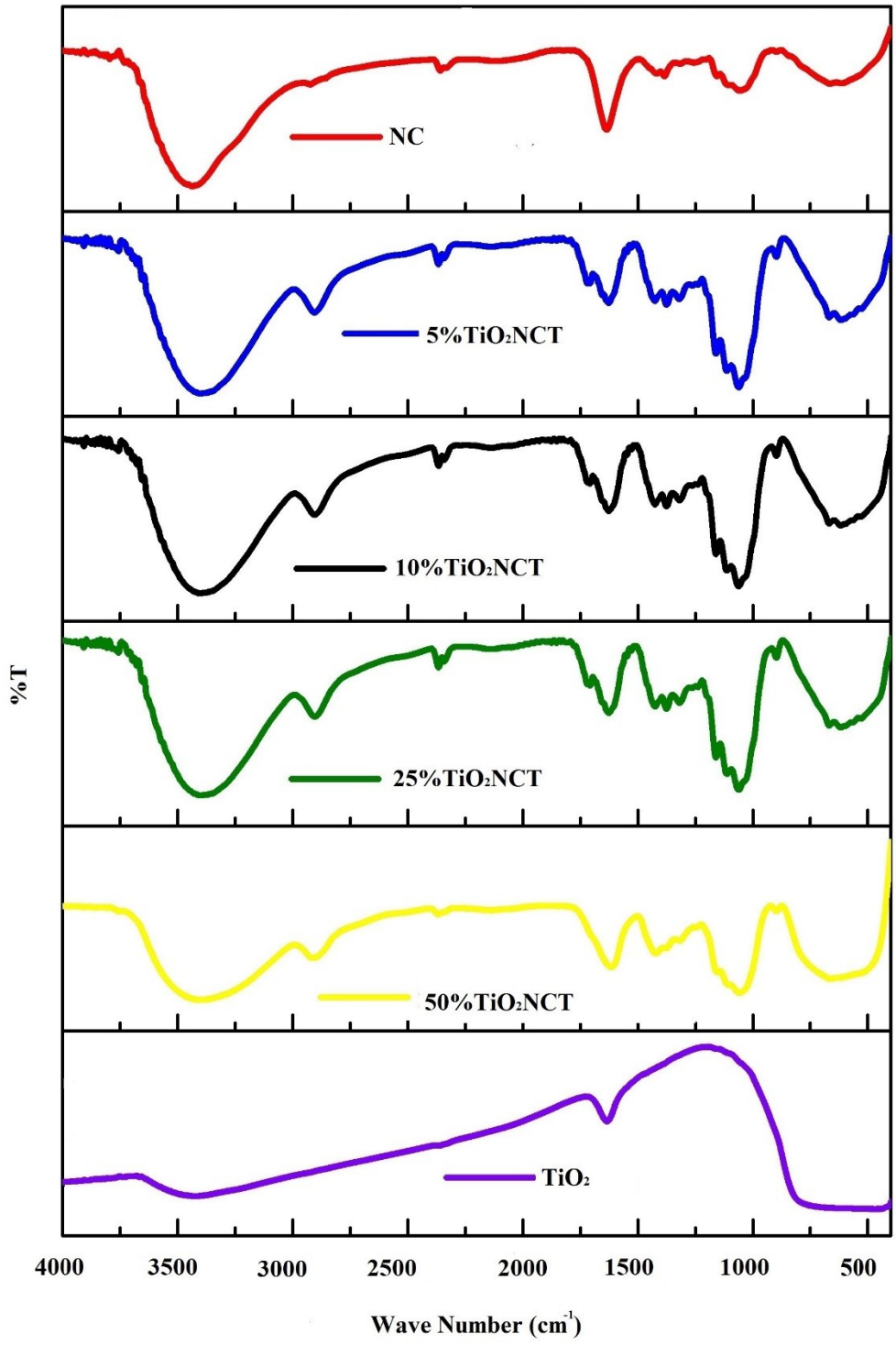

Fig. S4 FT-IR spectra of TiO_2, NC and NCTs

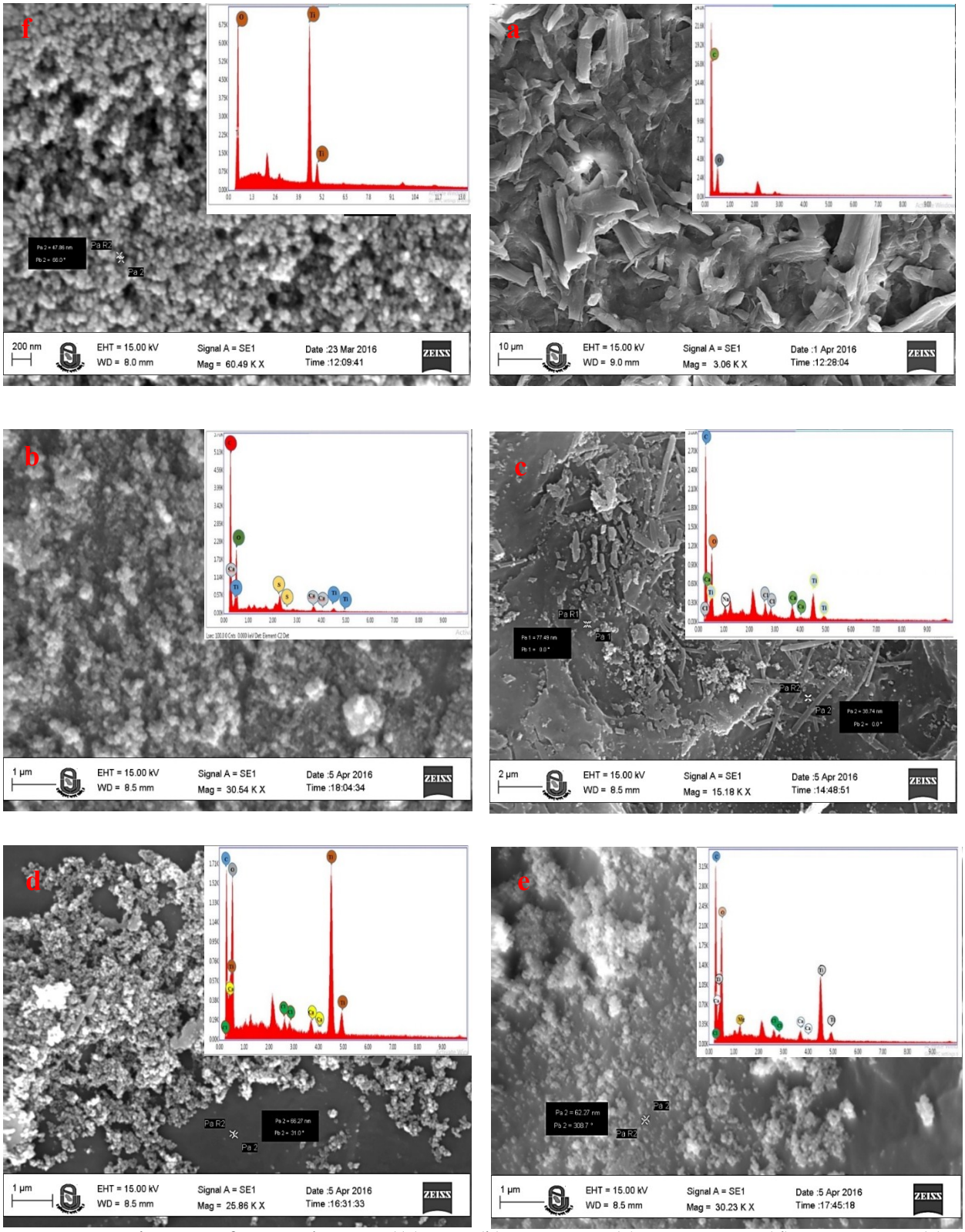

Fig. 5 SEM images of NC and NCTs ((a) NC, (b) 5% NCT, (c) 10% NCT, (d) 25% NCT, (e) 50% NCT (f) Pure TiO_2(inset: EDX spectrum).

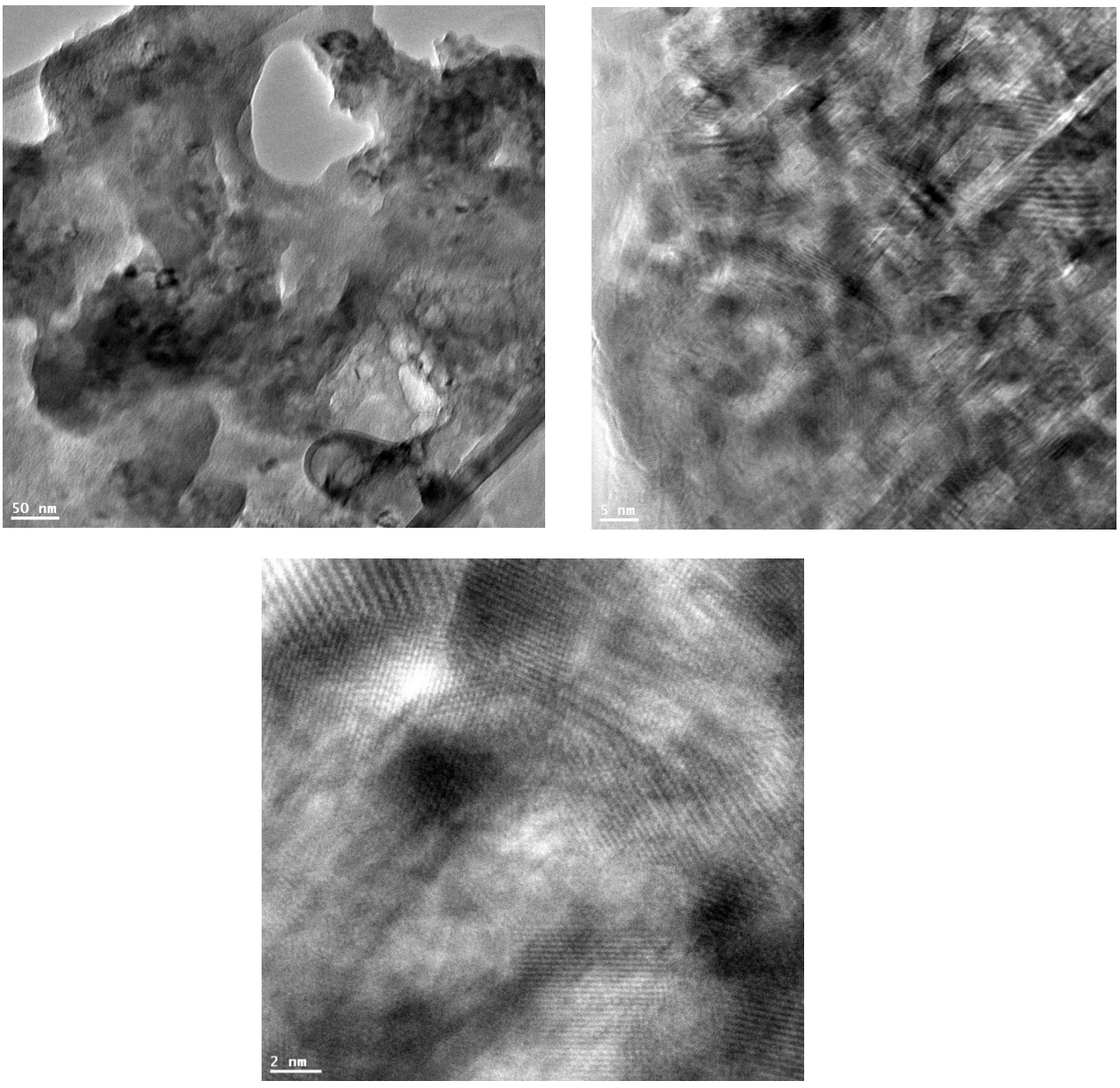

Fig. S6 Typical TEM images of 10%TiO_2 NCT

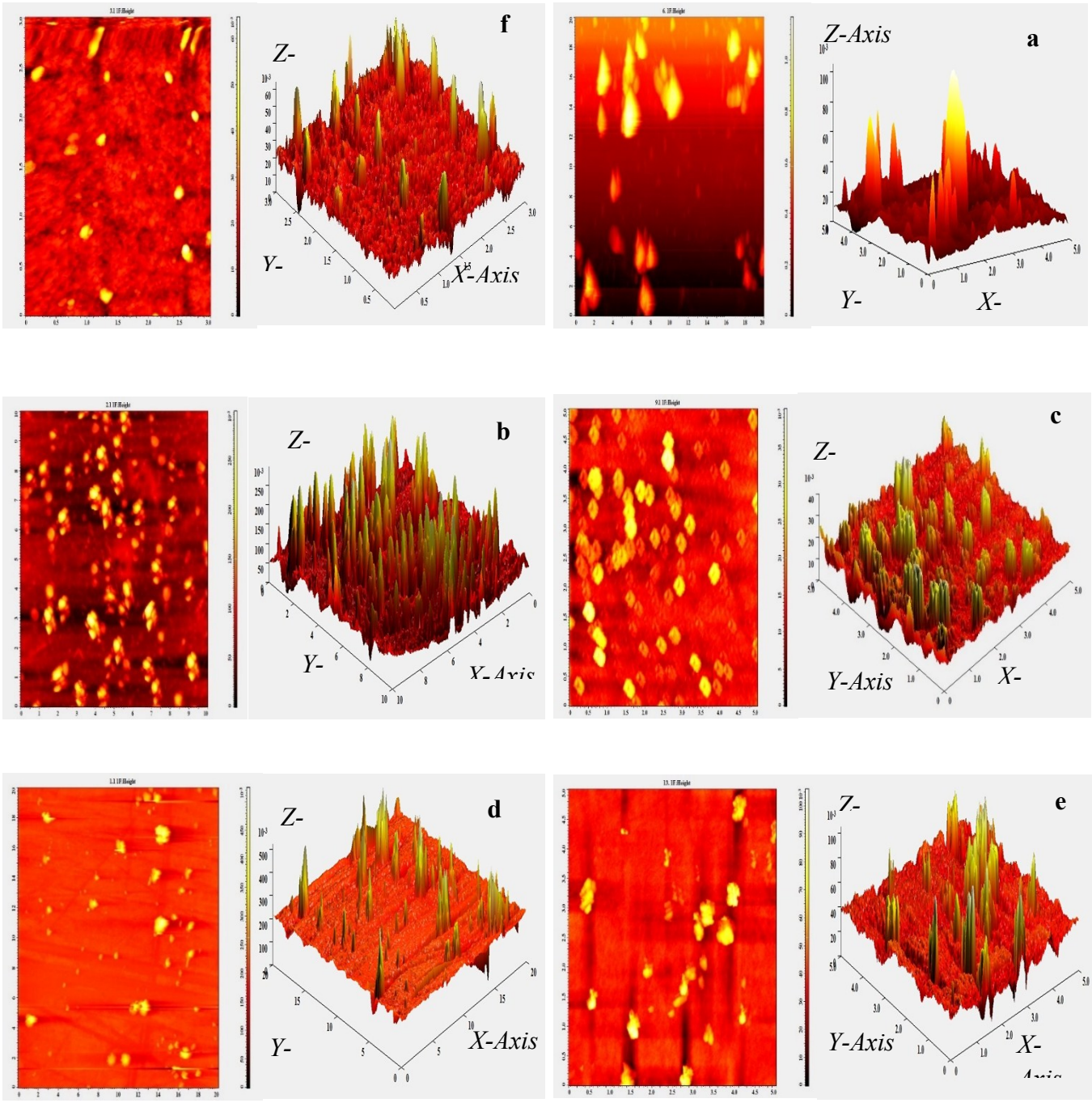

Fig. S7 AFM images: (A) NC (B) 5% NCT (C) 10 % NCT (D) 25% NCT (E) 50 % NCT (F) Pure TiO_2

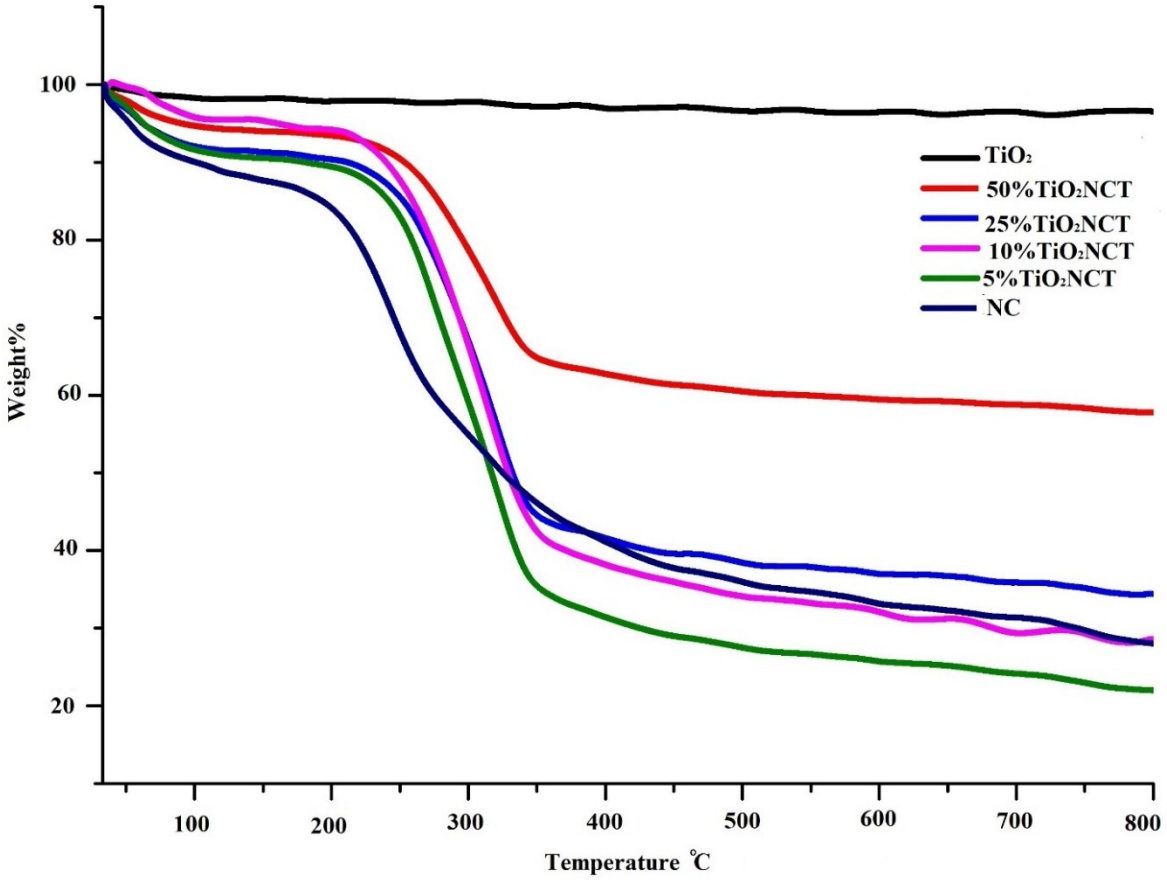

Fig. S8 TGA curves of TiO_2, NC and NCTs