Electronic Supplementary Material (ESI) for RSC Advances.

Photo-degradation of spentwash, a sugar industry waste using Vanadium doped TiO_2 nanoparticles.

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Electronic Supplementary Information

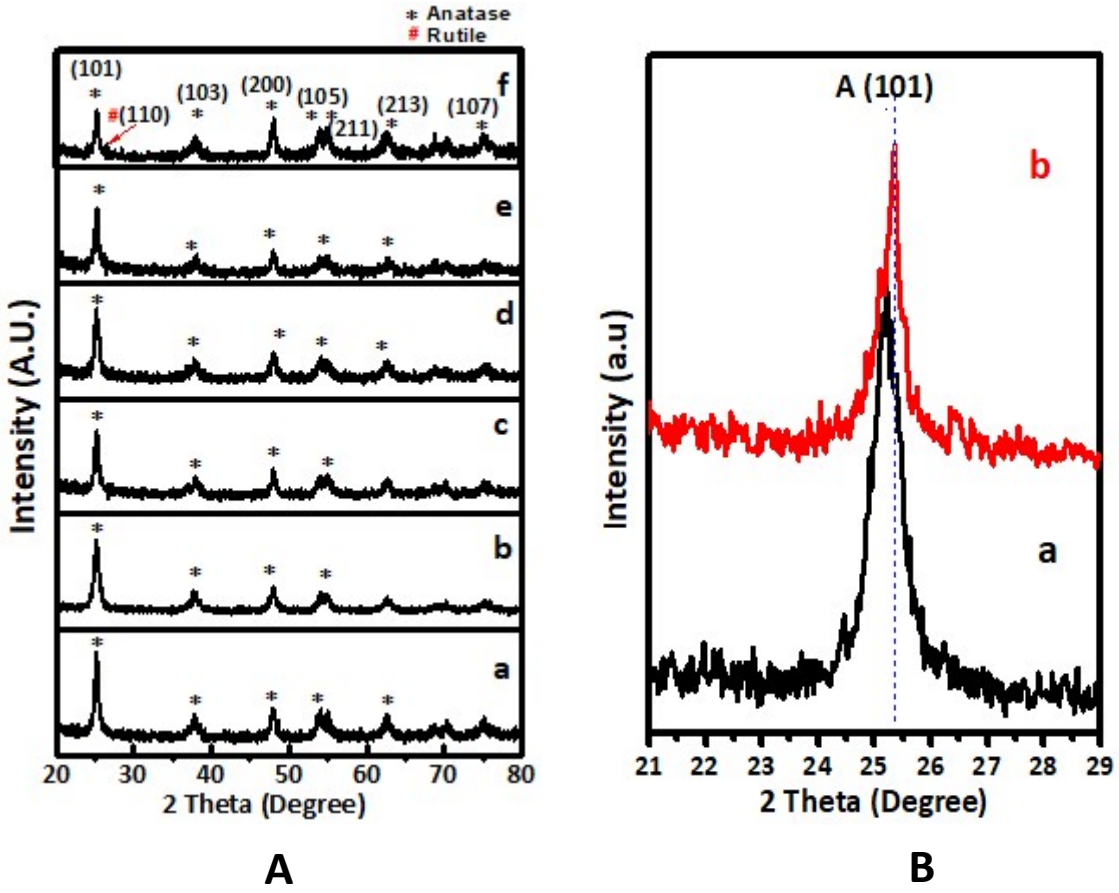

Fig. S1 (A) XRD pattern of (a) TiO_2 (b) 1% V-TiO_2 (c) 2% V-TiO_2 (d) 3% V-TiO_2, (e) 4% V-TiO_2 and (f) 5% V-TiO_2 samples obtained by Calcination at 400^0C. and (B) Enlarged version XRD pattern of (101) plane (a) TiO_2 and (b) 1% V-TiO_2

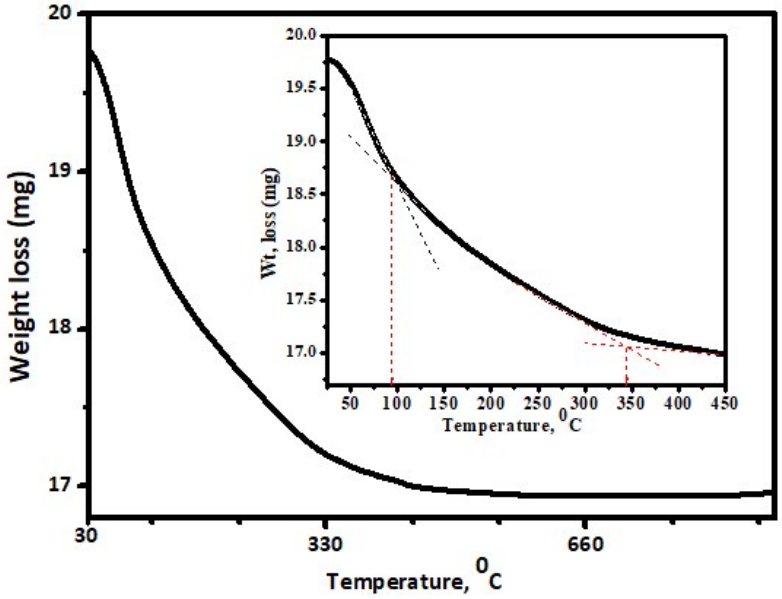

Fig. S2 Thermo-gravimetric analysis of 1% V-TiO_2 powdered gel sample.

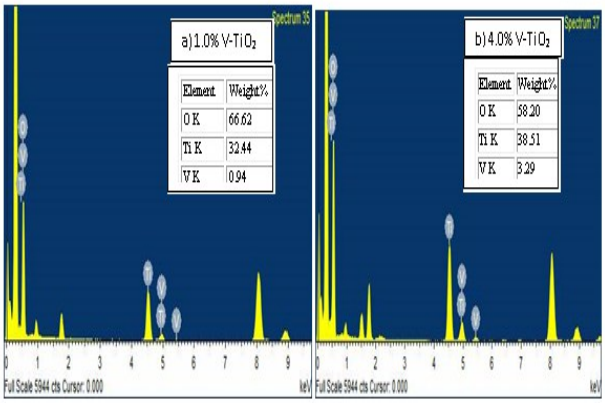

Fig. S3 EDX spectrum and data of (a) 1% V- TiO_2 and (b) 4% V- TiO_2

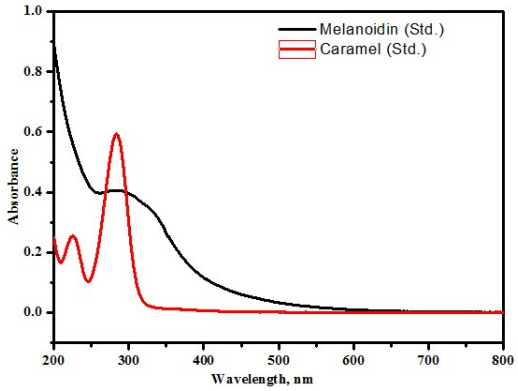

Fig. S4 UV-Visible absorption spectra of standard Caramel & Melanoidin sample.

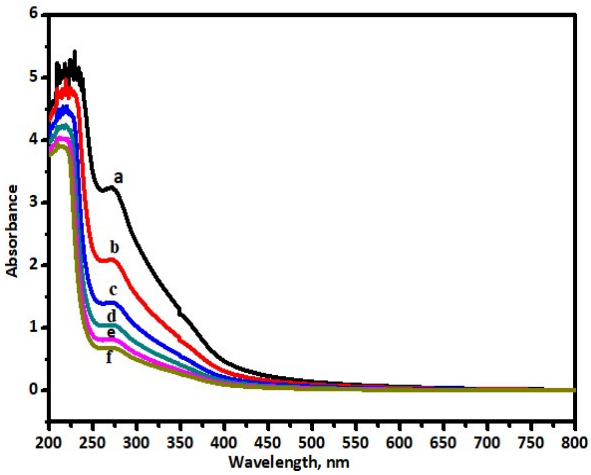

Fig. S5 UV–Visible spectra of Spent wash solution after irradiation with sunlight for (a) 0 h,(b) 1 h,(c) 2h,(d) 3 h, (e) 4 h and (f) 5 h in presence of 1 % V-TiO_2 catalyst

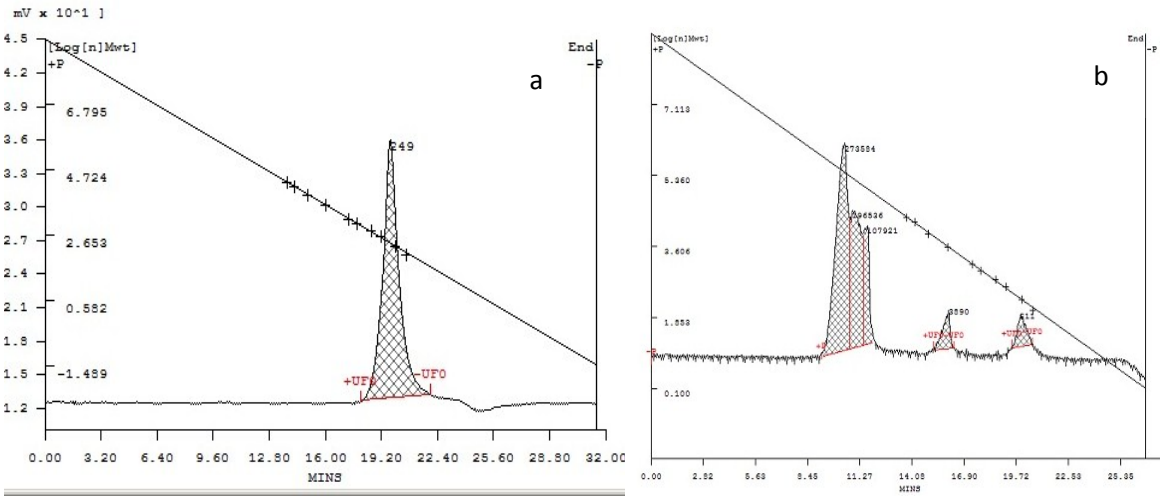

Fig. S6 GPC Chromatogram of standard (a) Caramel and standard (b) Melanoidin sample

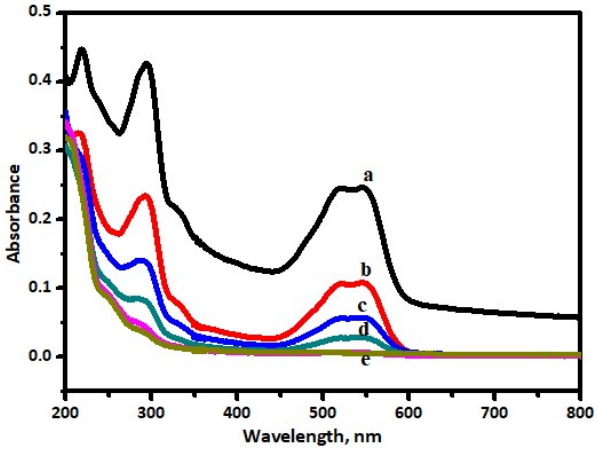

Fig.S7. UV–Vis spectra of Jakofix Red Dye (HE 8BN) solution after irradiation with sunlight for 0 h, (b) 1 h,(c) 2 h, (d) 3 h, (e) 3.5 h in presence of 1% V-TiO_2 catalyst.

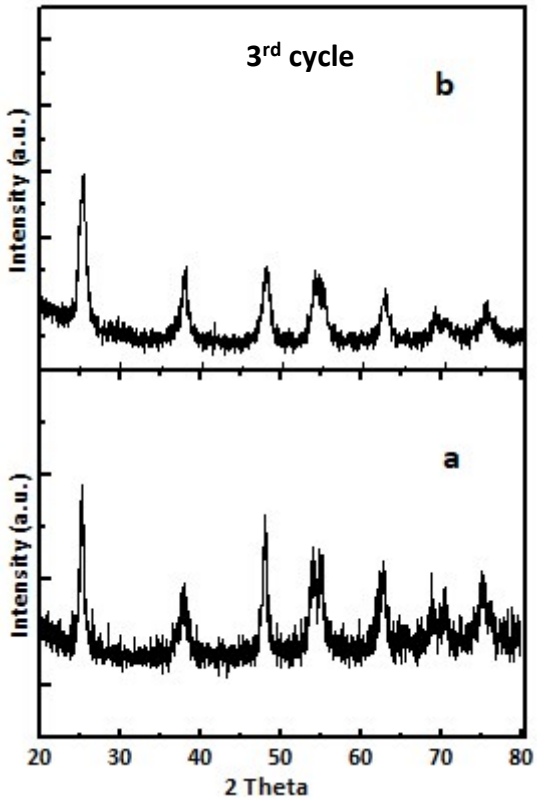

Fig. S8 XRD pattern of (a) 1% V-TiO_2 calcined at 400^0C and (b) 1% V-TiO_2 recovered after 3rd cycles of photo-degradation of spentwash under sunlight

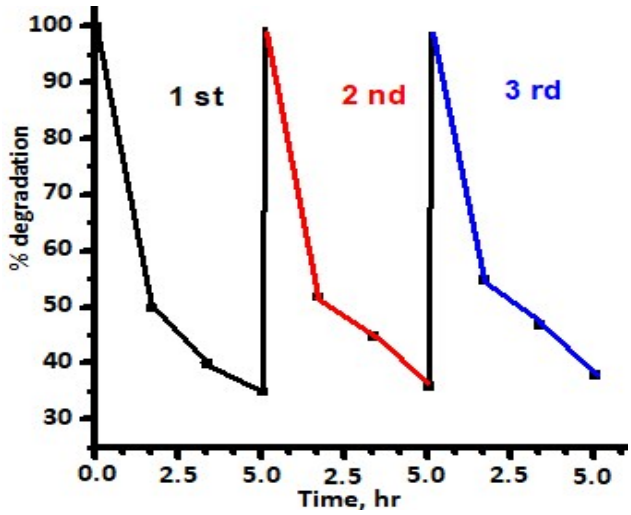

Fig. S9. Degradation of spent wash using 1%V-TiO_2 catalyst under natural sunlight for 3 consecutive cycles.

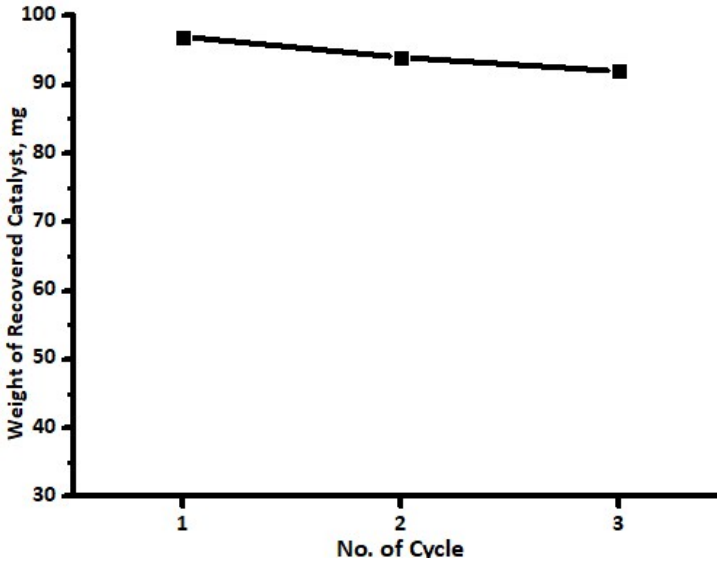

Fig. S10 Recovery of 1% V-TiO_2 catalyst with respect to number of cycle.