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Hydrothermal growth of ZnO nanorods on Zn substrates and their application in degradation of azo dyes under ambient conditions

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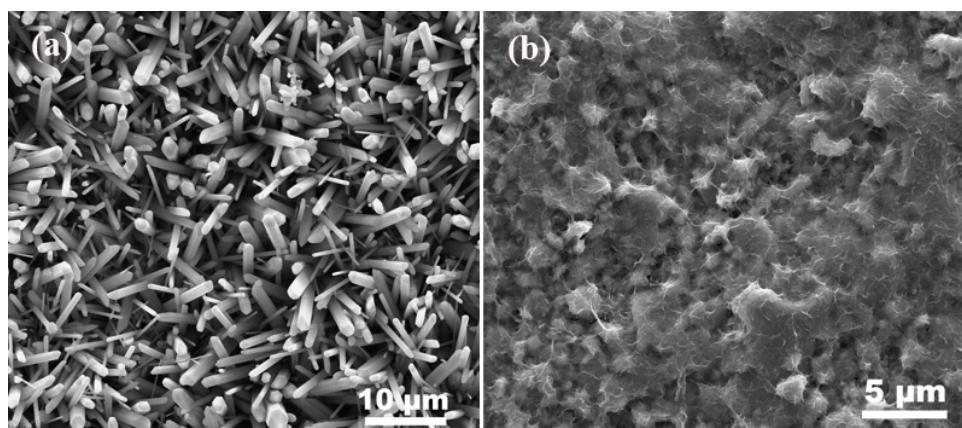


Fig. S1 SEM images of ZnO nanorod arrays: (a) Z-5; (b) Z-6.

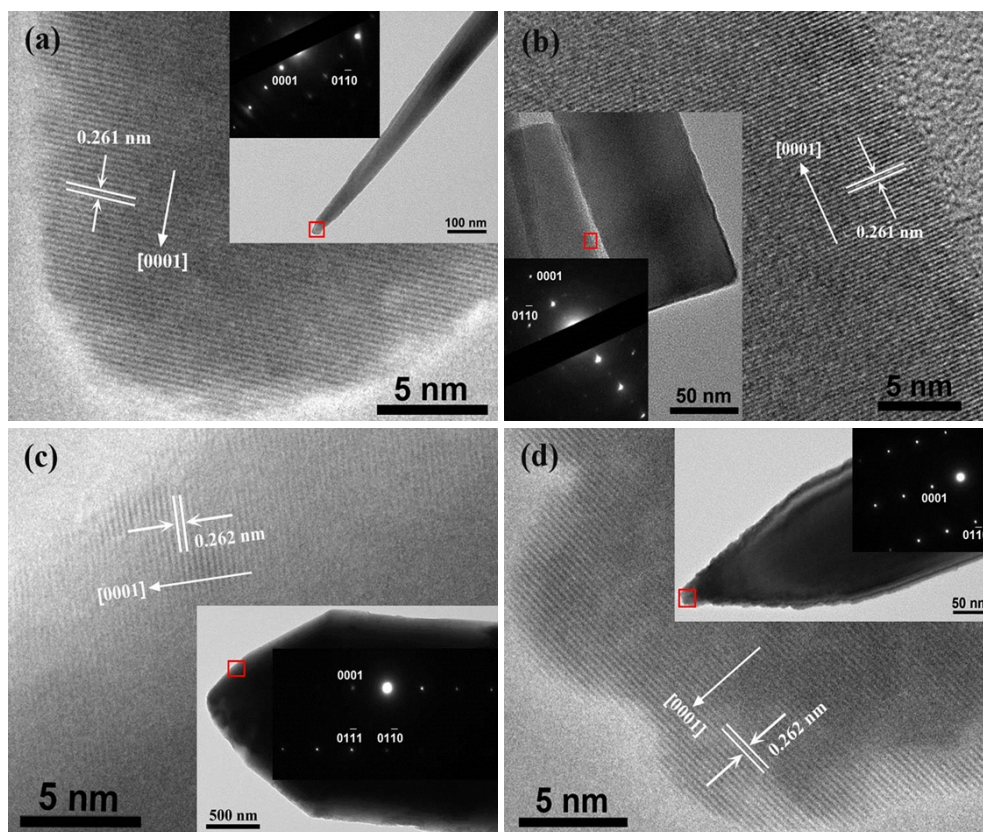


Fig. S2 HRTEM images of the nanorods at the tip ((a) Z-1, (d) Z-4) and the side ((b) Z-2, (c) Z-3). The inserts are whole view of the tops, and electron diffraction patterns from the nanorods show the same growth direction of [0001].

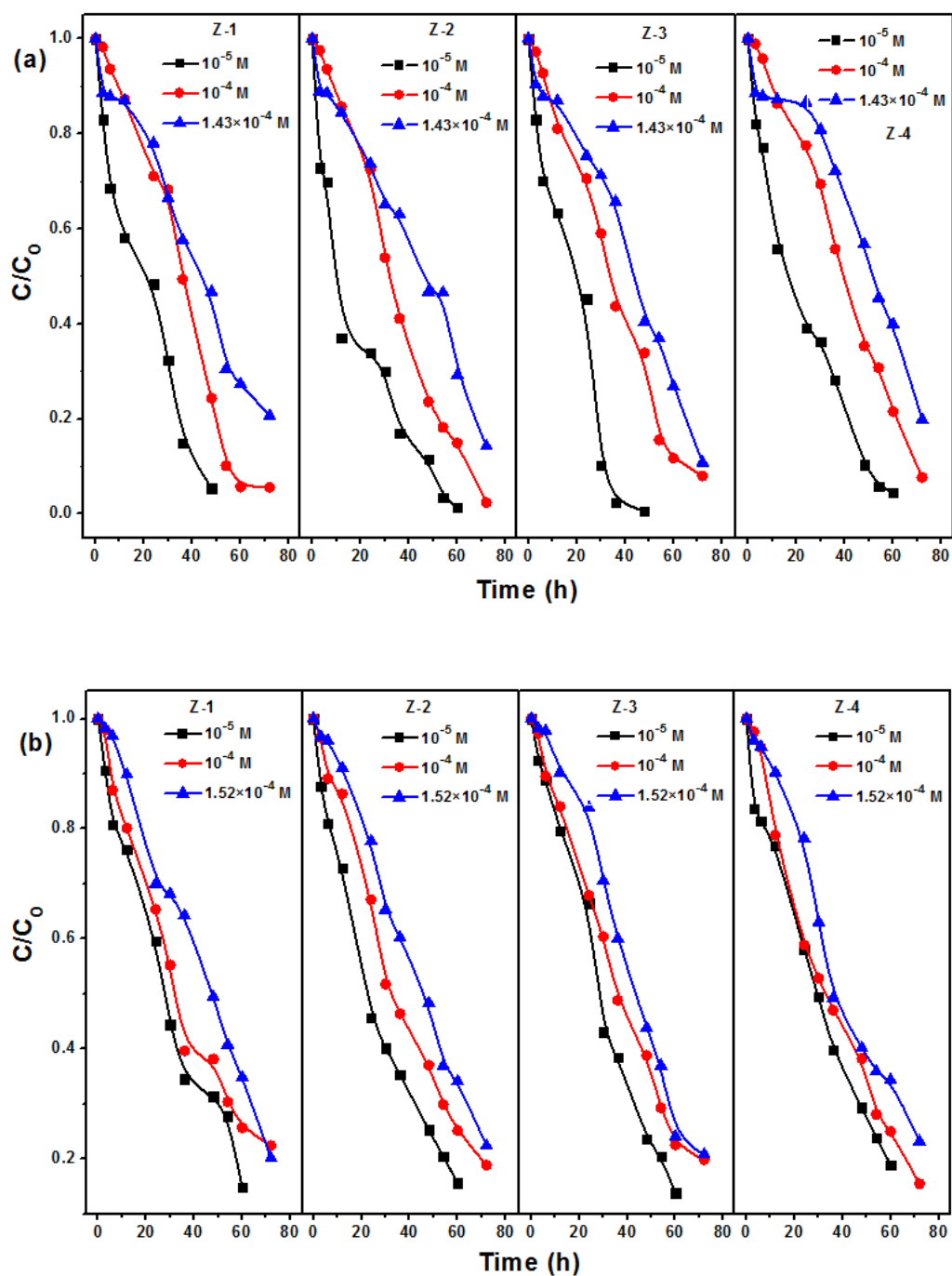
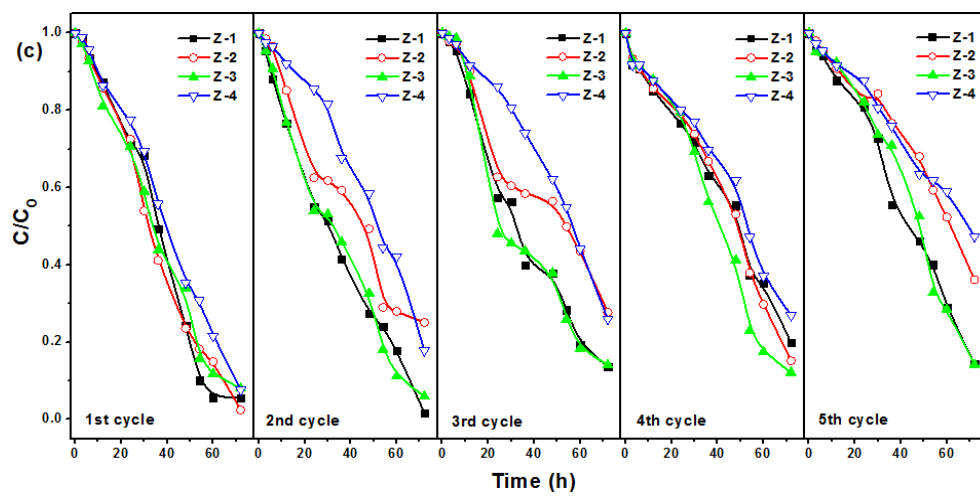
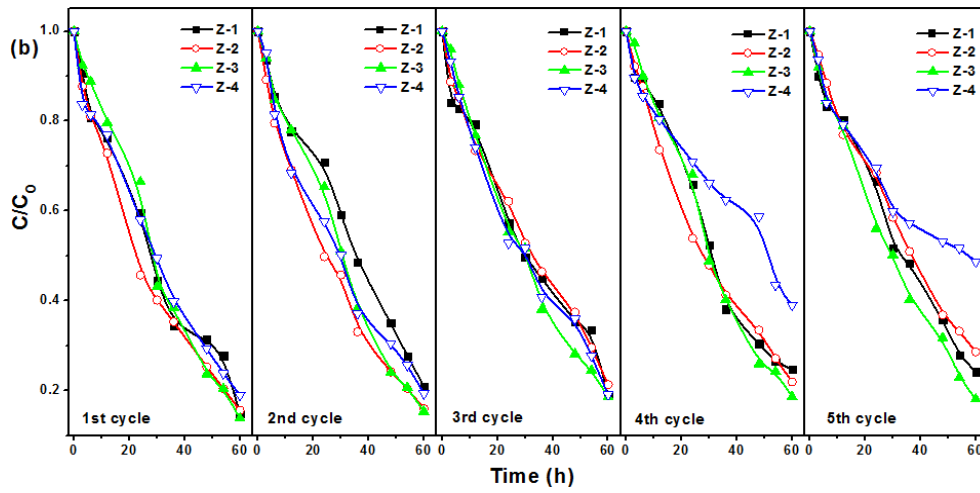
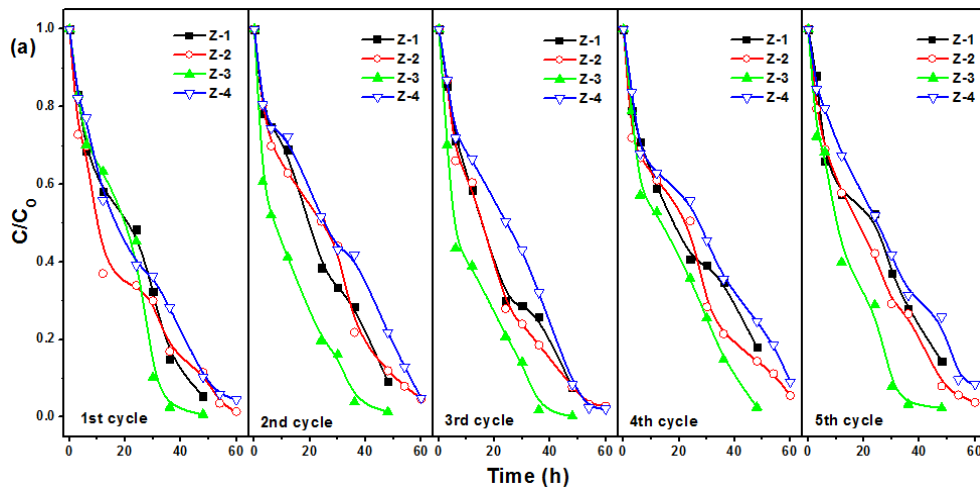


Fig. S3 The comparative degradation rate of azo dyes with different concentration (10^{-5} M, 10^{-4} M and greater than 10^{-4} M) under dark condition in the presence of sample Z-1, Z-2, Z-3 and Z-4 (2cm×2cm): (a) CR (40 mL); (b) MO (40 mL).



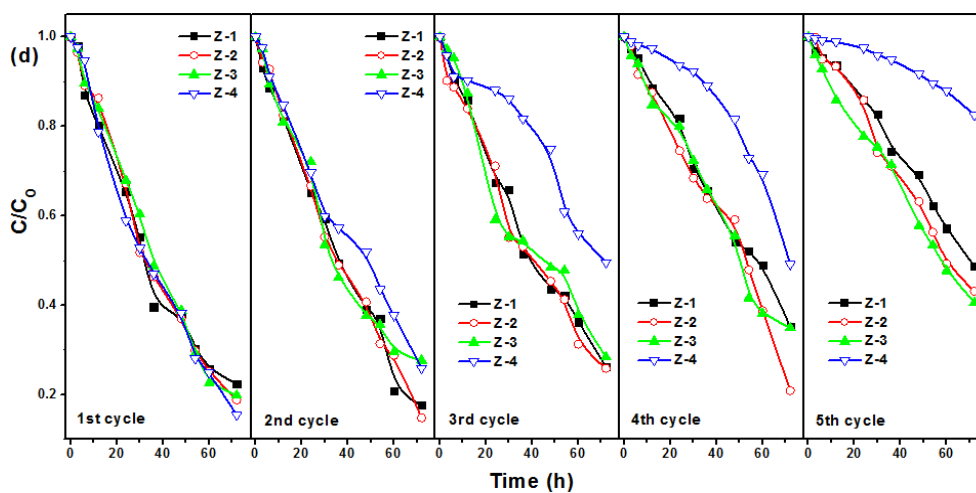


Fig. S4 Cycling runs in the catalytic degradation rate of azo dyes under dark condition in the presence of sample Z-1, Z-2, Z-3 and Z-4 (2cm×2cm): (a) CR (10⁻⁵ M, 40 mL); (b) MO (10⁻⁵ M, 40 mL); (c) CR (10⁻⁴ M, 40 mL); (d) MO (10⁻⁴ M, 40 mL).

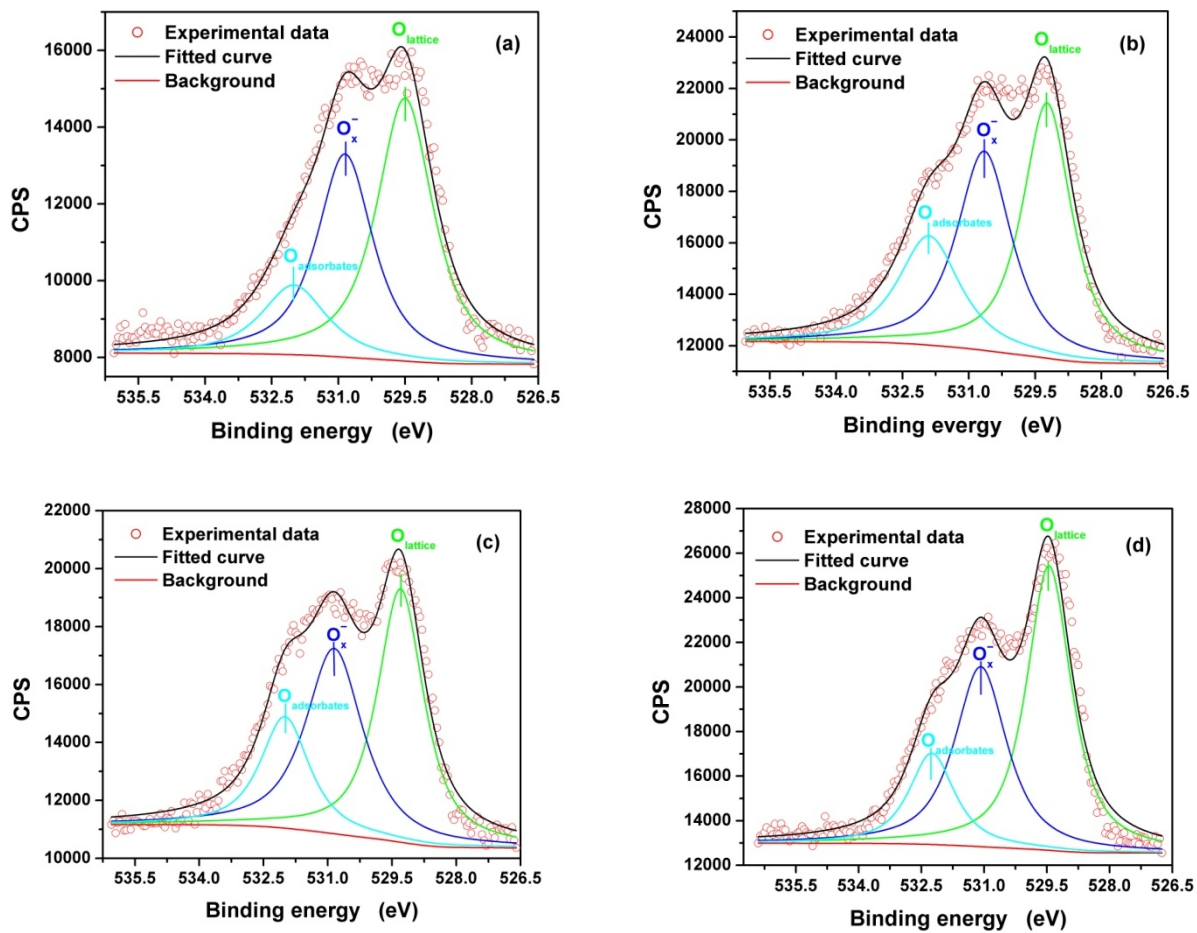


Fig. S5 High-resolution XPS spectra of O 1s of the sample Z-1 and Z-3 before ((a) Z-1, (c) Z-3) and after ((b) Z-1, (d) Z-3) degradation of 5 cycling runs under dark condition, respectively.