## Appendix A. Supplementary data

## Catalytic Oxidation of Formaldehyde in water by Calcium Phosphate-based Pt Composites

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O 
$$\stackrel{\text{H}}{\longrightarrow}$$
 + 2  $\stackrel{\text{CH}_3}{\bigcirc}$  CH<sub>3</sub> CH<sub>3</sub> + NH<sub>4</sub><sup>+</sup>  $\stackrel{\triangle}{\longrightarrow}$  H<sub>3</sub>C  $\stackrel{\text{N}}{\longrightarrow}$  CH<sub>3</sub> + 3  $\stackrel{\text{CH}_3}{\bigcirc}$  + NH<sub>4</sub><sup>+</sup>  $\stackrel{\text{Formaldehyde}}{\longrightarrow}$  Acetylacetone 3,5-diacetyl-1,4-dihydrolutidine

**Scheme S1.** Chemical reaction of HCHO with colorimetric agent (CA) for HCHO detection.

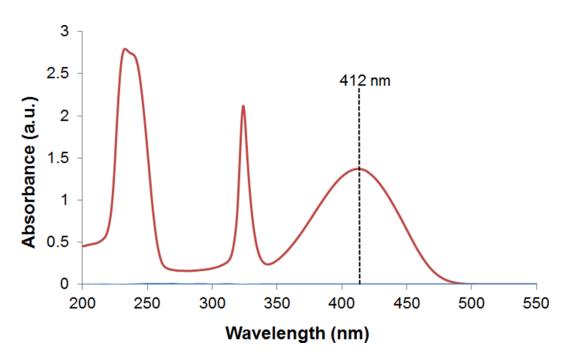
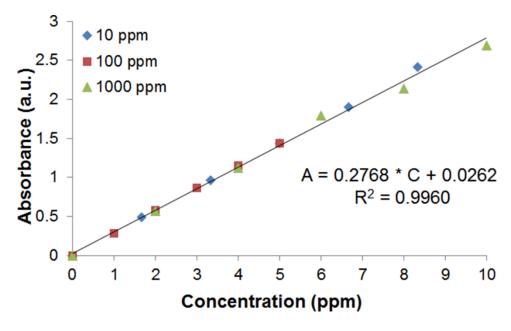


Figure S1. A UV-Vis absorption spectrum of a mixed solution of HCHO (4.7 ppm) and CA.



**Figure S2.** A standard calibration curve of HCHO prepared from HCHO stock solutions of 10, 100, and 1000 ppm.

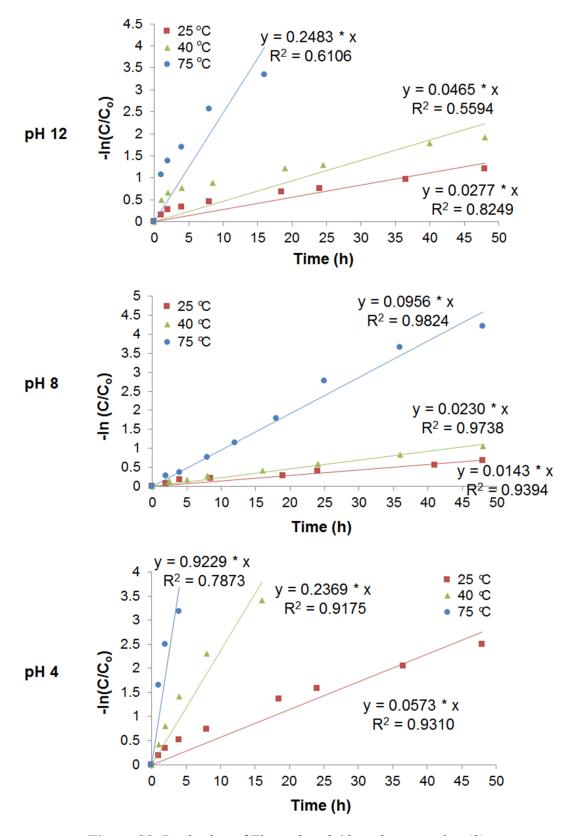


Figure S3. Replotting of Figure 3 and 6 based on equation (2).