

Supporting Information for:

***In-situ* Mechanistic Investigation at the Liquid/Solid
Interface by ATR-FTIR: Ethanol Photo-oxidation over
Pristine & Platinized TiO₂ (P25)**

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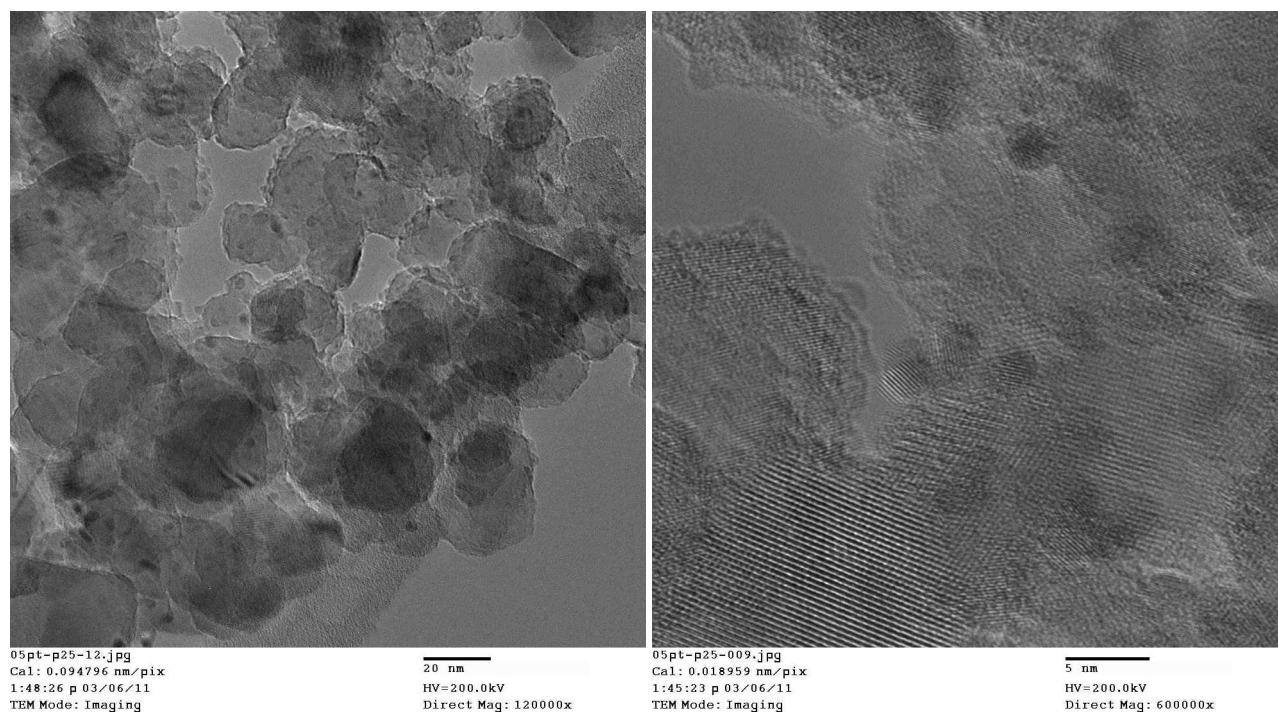


Figure S1. TEM (a) and HRTEM (b) images of 0.5wt% Pt/P25 TiO₂

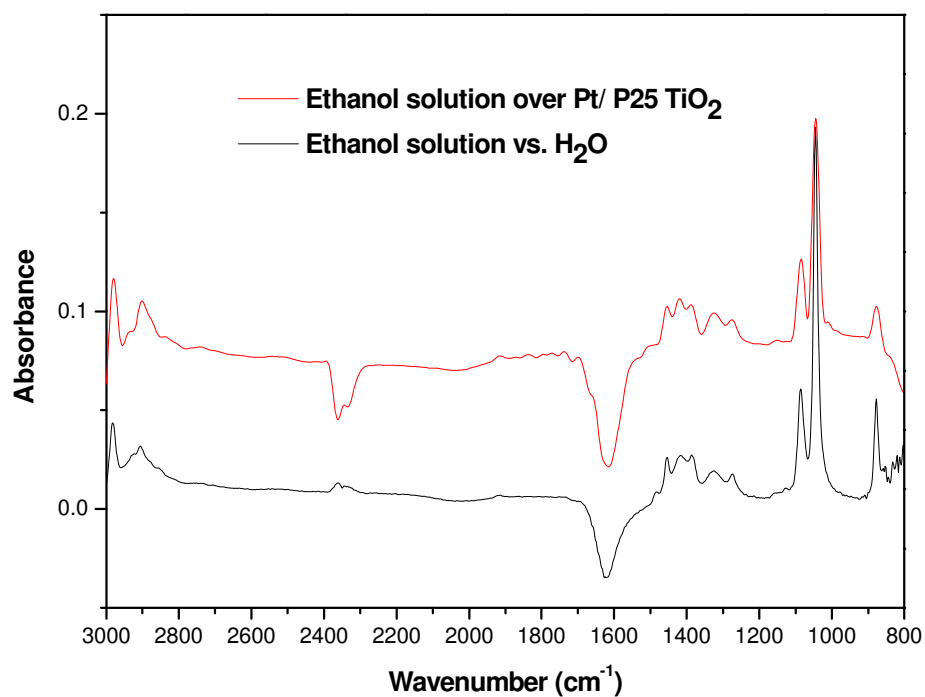


Figure S2. ATR-FTIR spectra of 0.86M EtOH solution vs. H₂O and over 0.5 wt% Pt/ P25 TiO₂

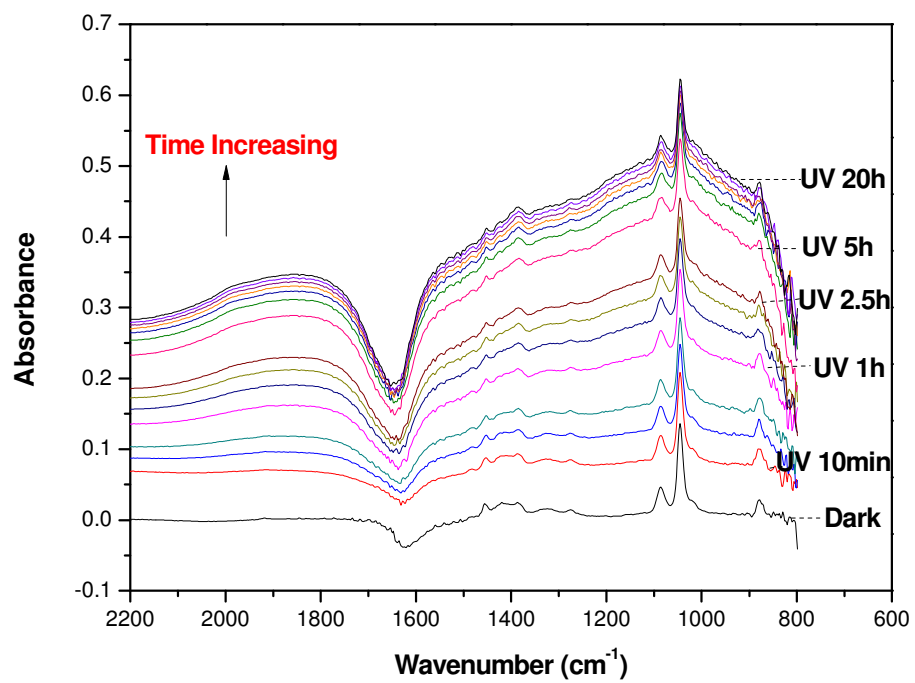


Figure S3. ATR-FTIR raw spectra recorded during photo-oxidization of ethanol over P25 TiO₂

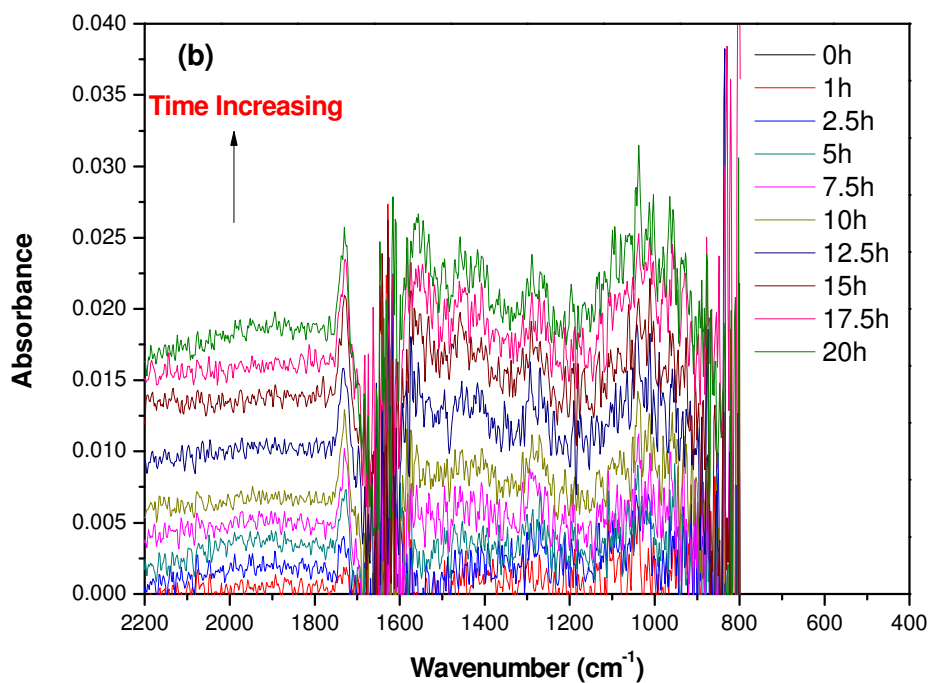
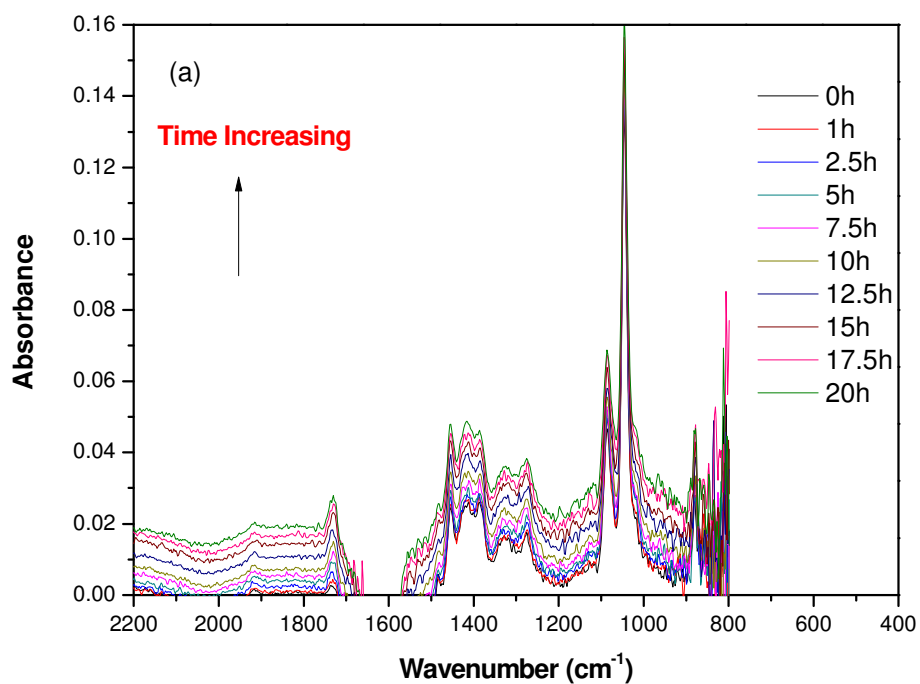


Figure S4. ATR-FTIR spectra recorded when EtOH solution was kept dark over 0.5wt% Pt P25 TiO₂: (a) Raw spectra; (b) Difference Spectra.

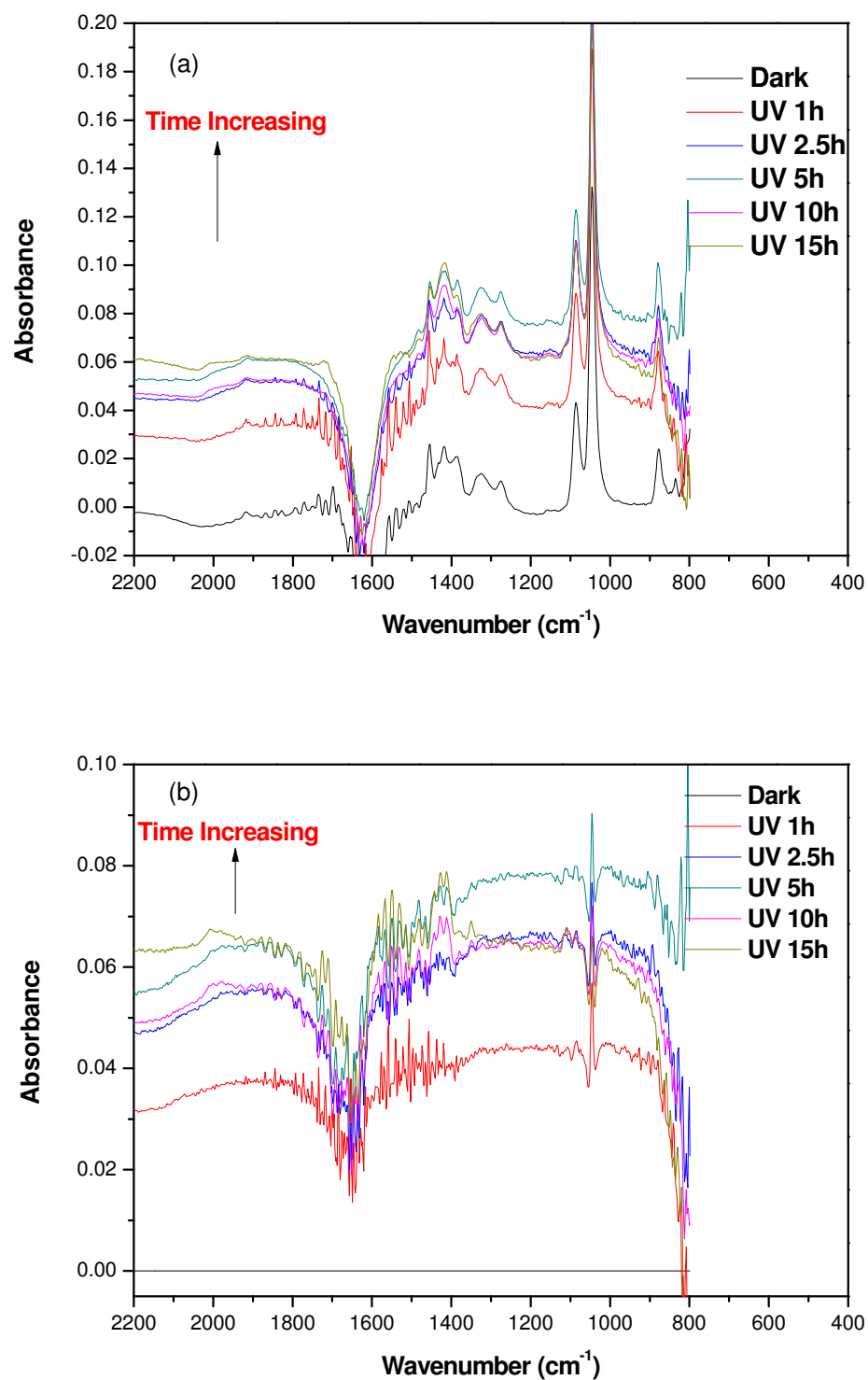


Figure S5. ATR-FTIR spectra recorded during oxygen free EtOH solution illuminated over 0.5wt% Pt P25 TiO₂: (a) Raw spectra; (b) Difference Spectra.

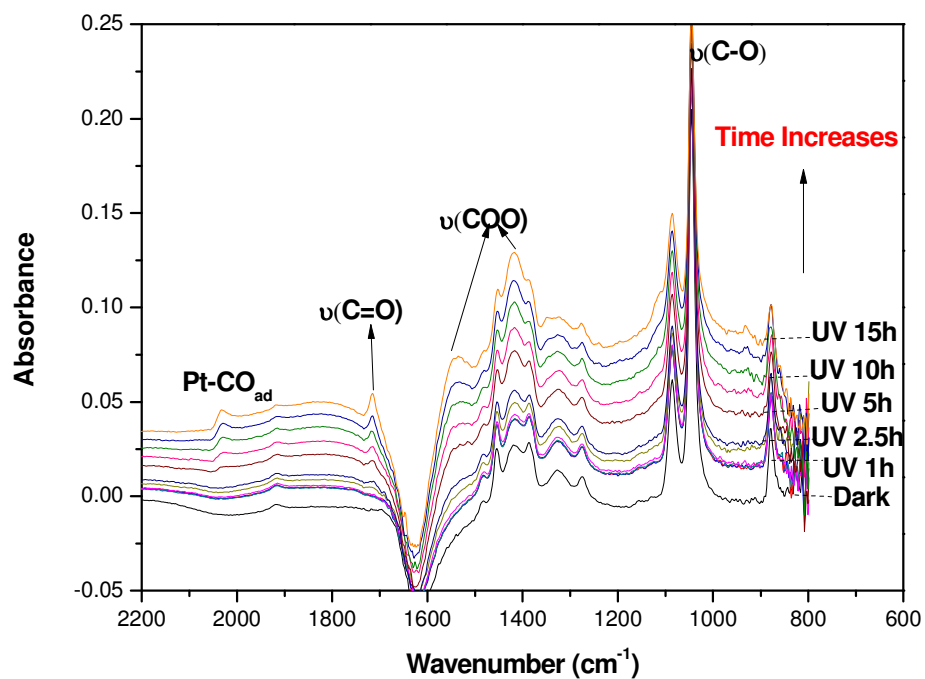


Figure S6. ATR-FTIR raw spectra recorded during photo-oxidization of EtOH over 0.5wt% Pt /P25

TiO₂

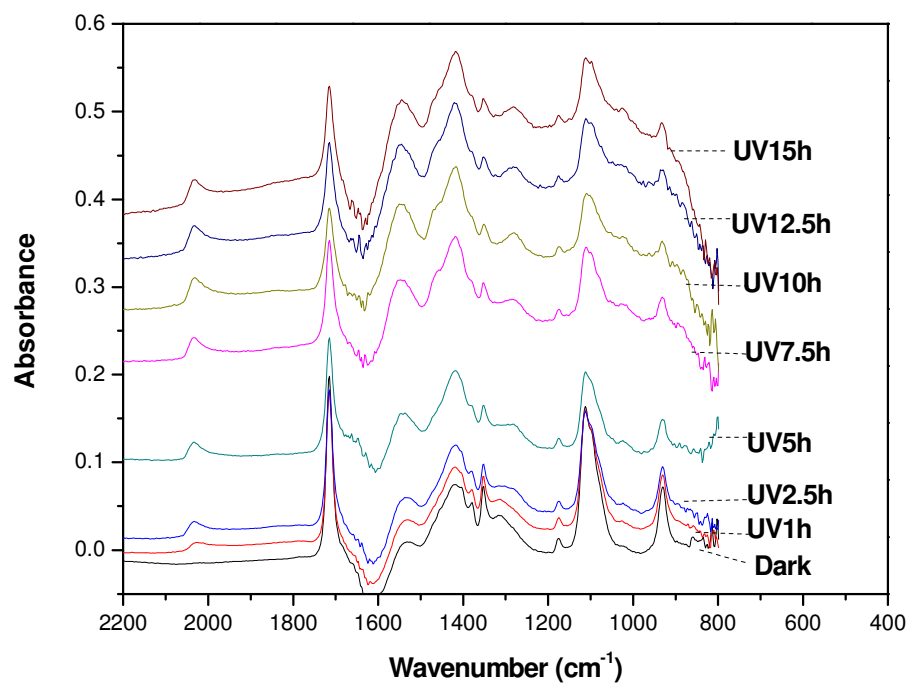


Figure S7. ATR-FTIR raw spectra recorded during photo-oxidization of 0.89M acetaldehyde over 0.5% Pt/P25 TiO₂

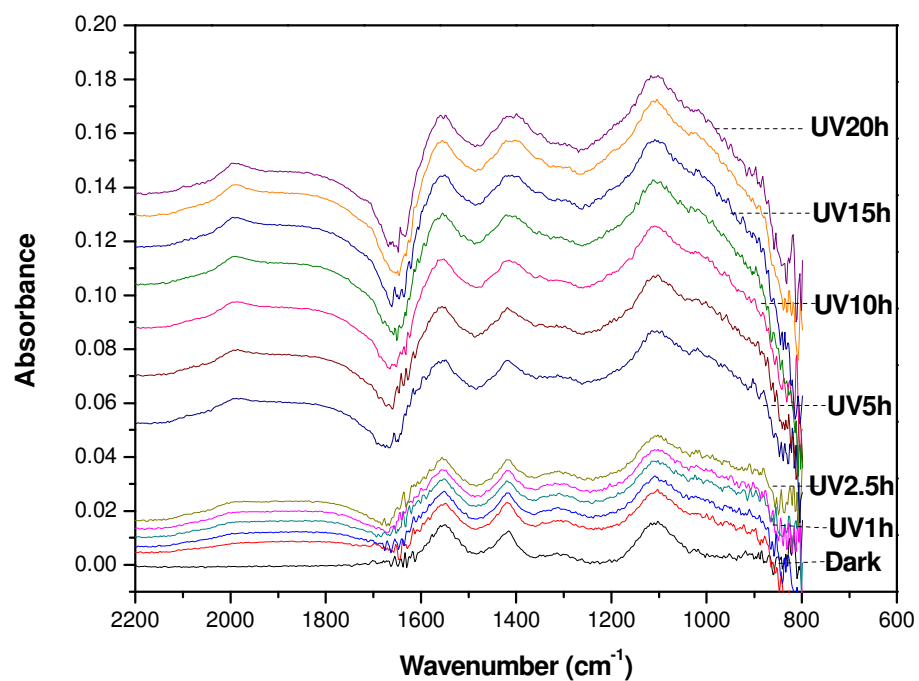


Figure S8. ATR-FTIR raw spectra recorded during photo-oxidization of 1mM acetic acid over 0.5wt.% Pt/P25 TiO₂.

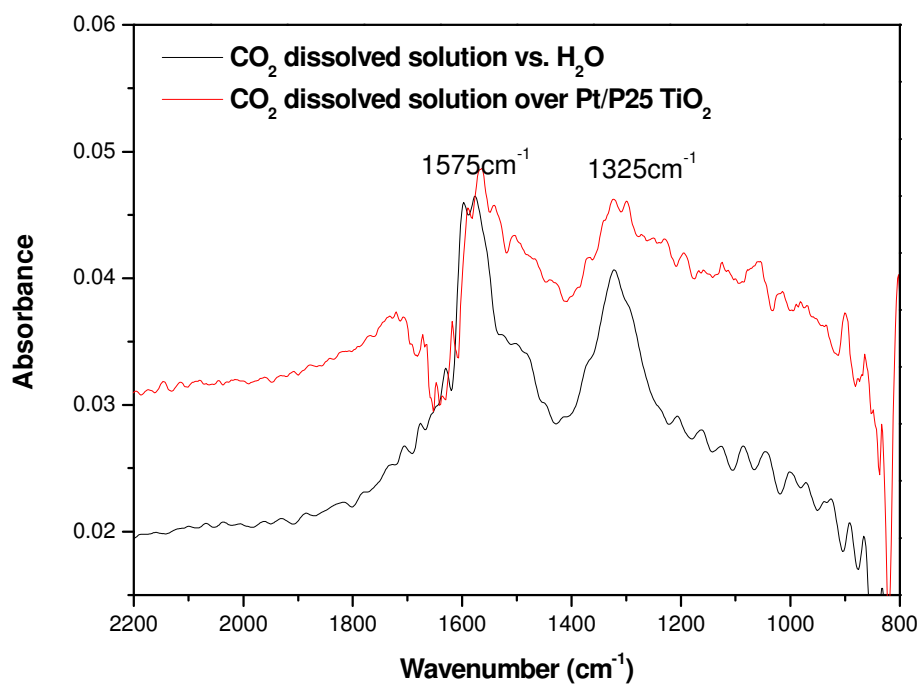


Figure S9. ATR-FTIR spectra of CO_2 dissolved solution vs. H_2O and over 0.5wt.% Pt/P25 TiO_2 .

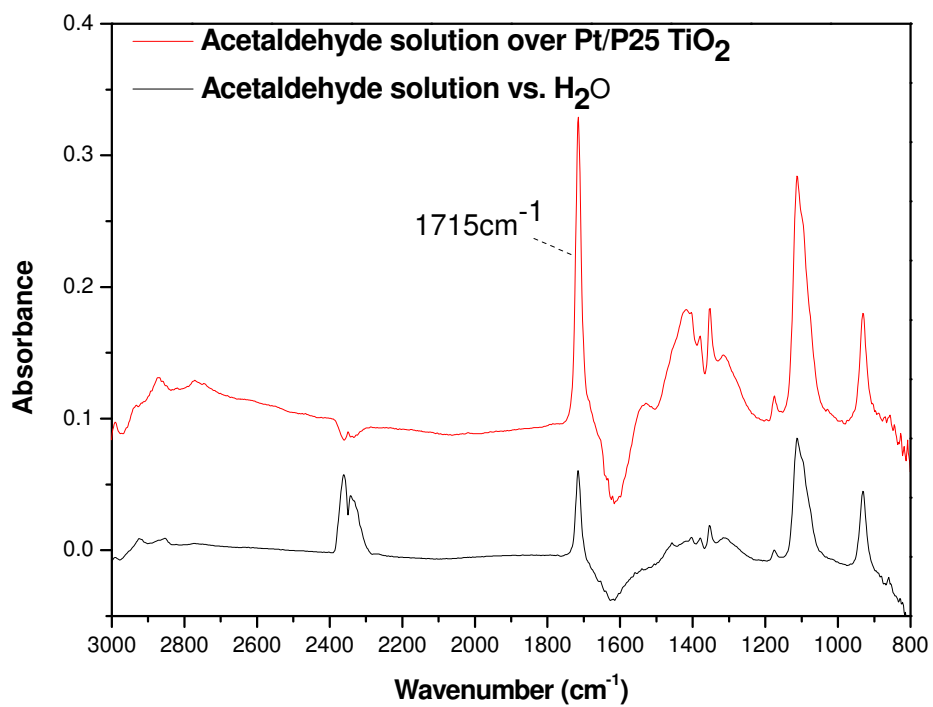


Figure S10. ATR-FTIR spectra of 0.89M acetaldehyde solution vs. H_2O and over 0.5wt.% Pt/P25 TiO_2 .

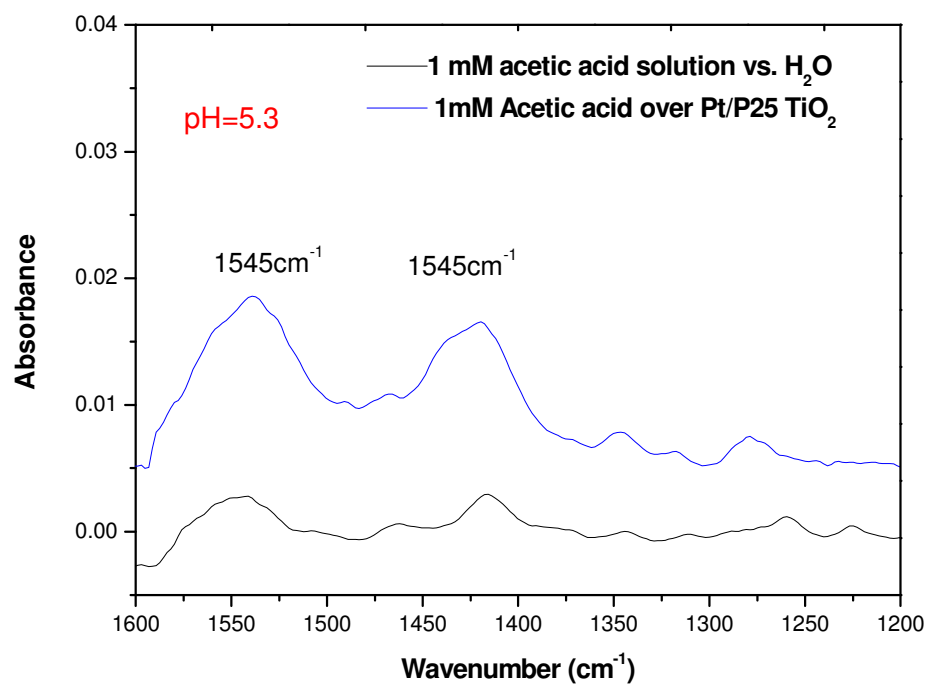


Figure S11. ATR-FTIR spectra of 1mM acetic acid solution vs. H₂O and over 0.5wt.% Pt/P25 TiO₂.