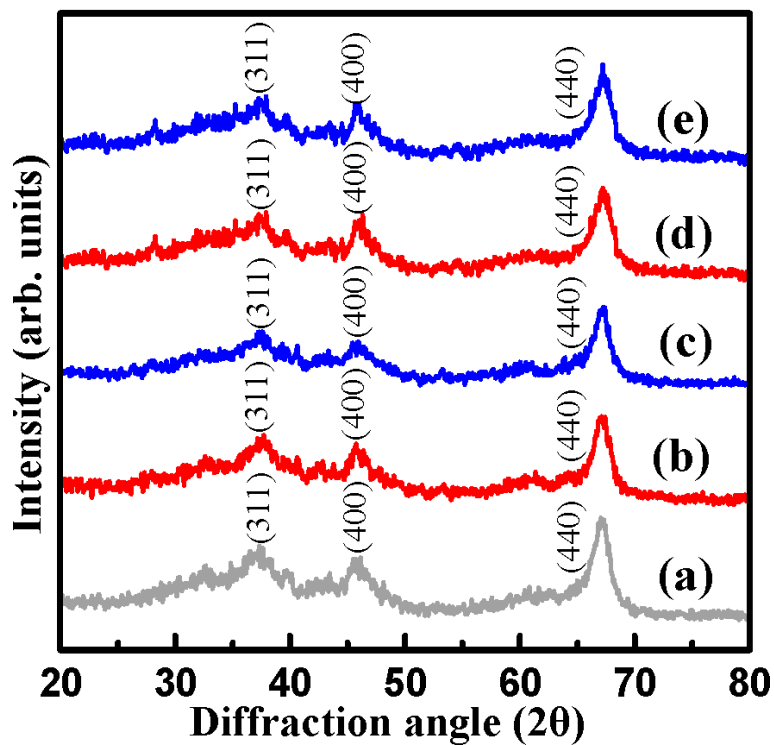
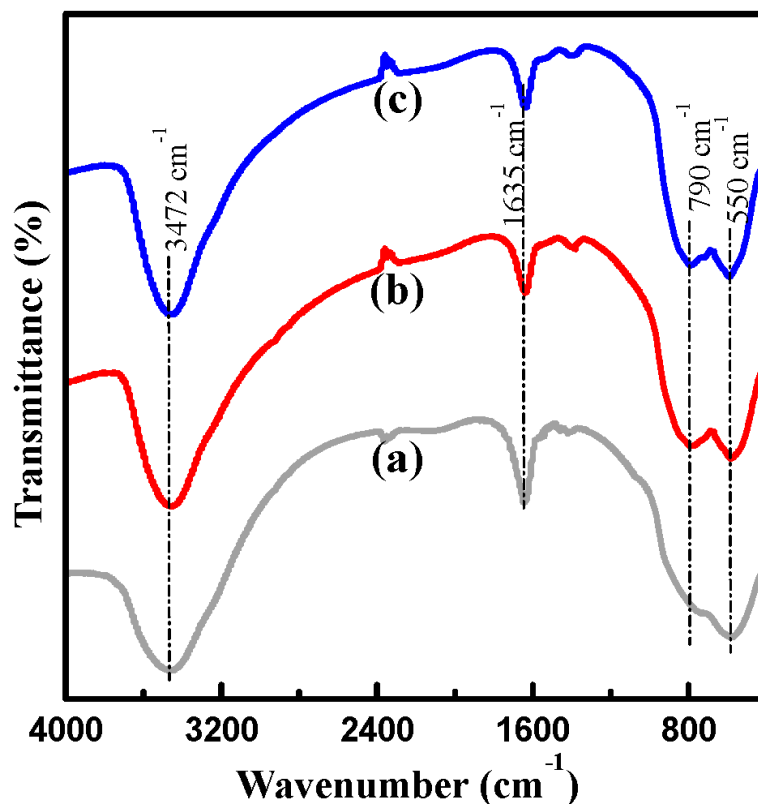


## Supplementary Materials



**Figure S1.** The XRD spectra of the catalysts: The as prepared ALVIR (a); RAWOS (b); and RAWS (c). The RAWOS and RAWS catalysts heat-treated at 650° C are given in (d) and (e), respectively.



**Figure S2.** The FTIR spectra recorded for ALVIR, RAWOS and RAWS catalysts (a–c).