

Electronic Supplementary Information

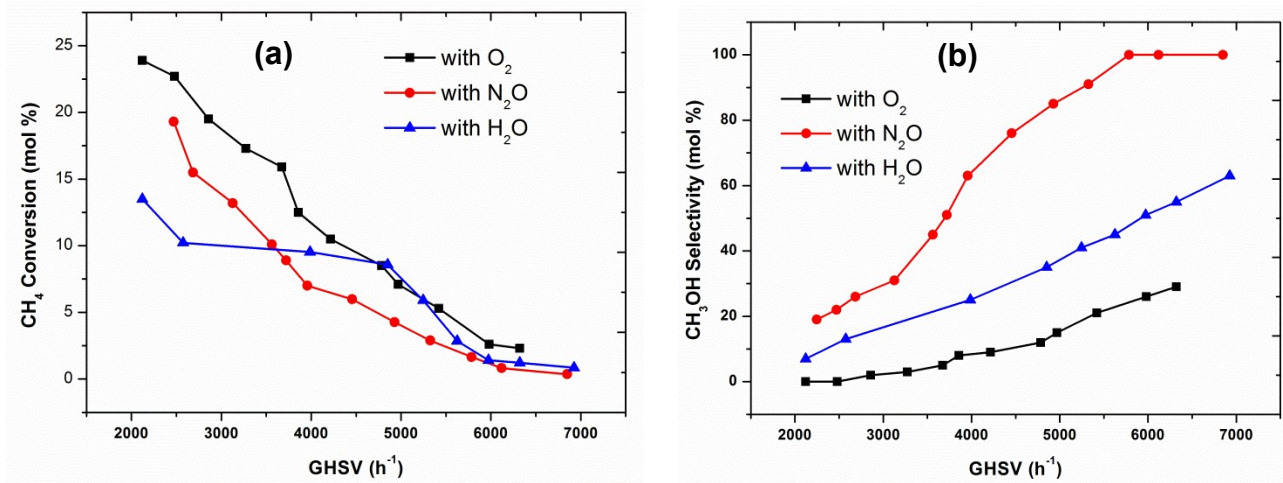
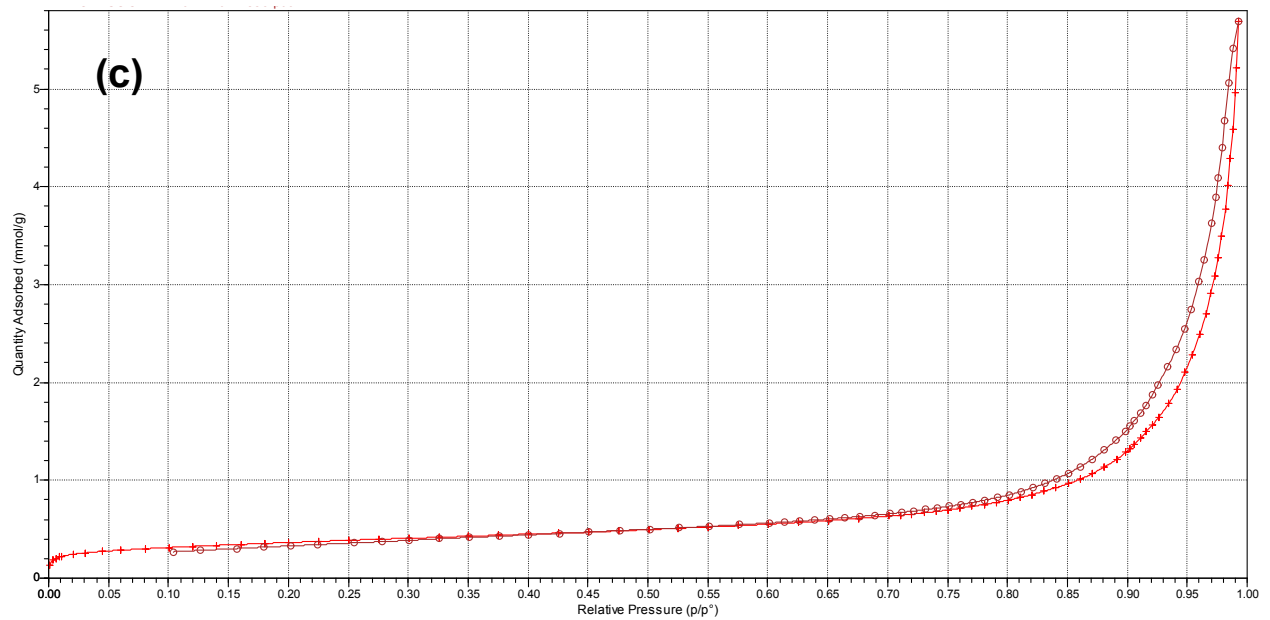
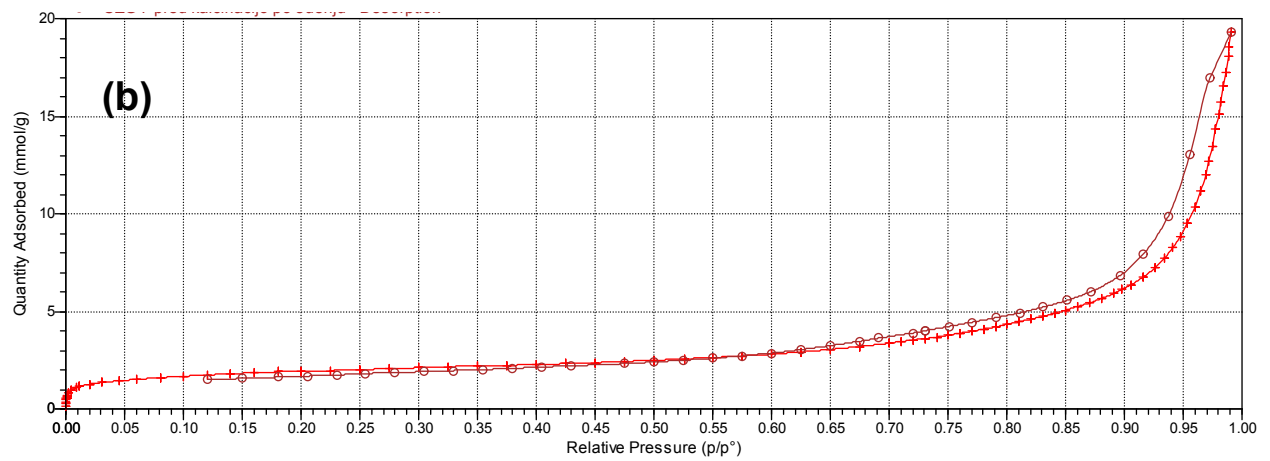
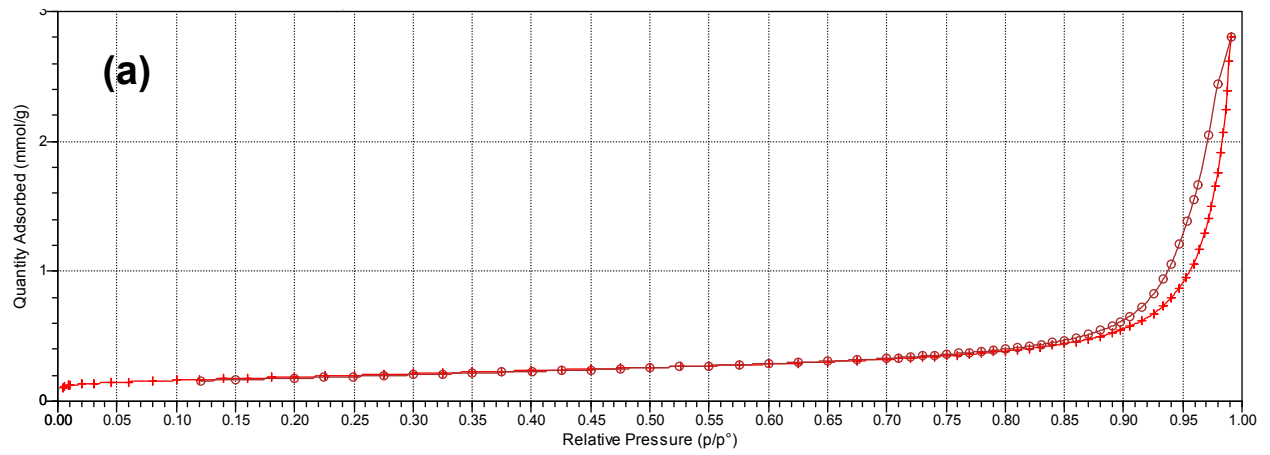


Figure S1: Influence of flow rate on (a) methane conversion and (b) methanol selectivity in partial oxidation of methane over FePO₄ catalyst (GHSV = 2000-7000 h⁻¹, temperature = 300 °C and at methane to oxidant ratio of 1:1)



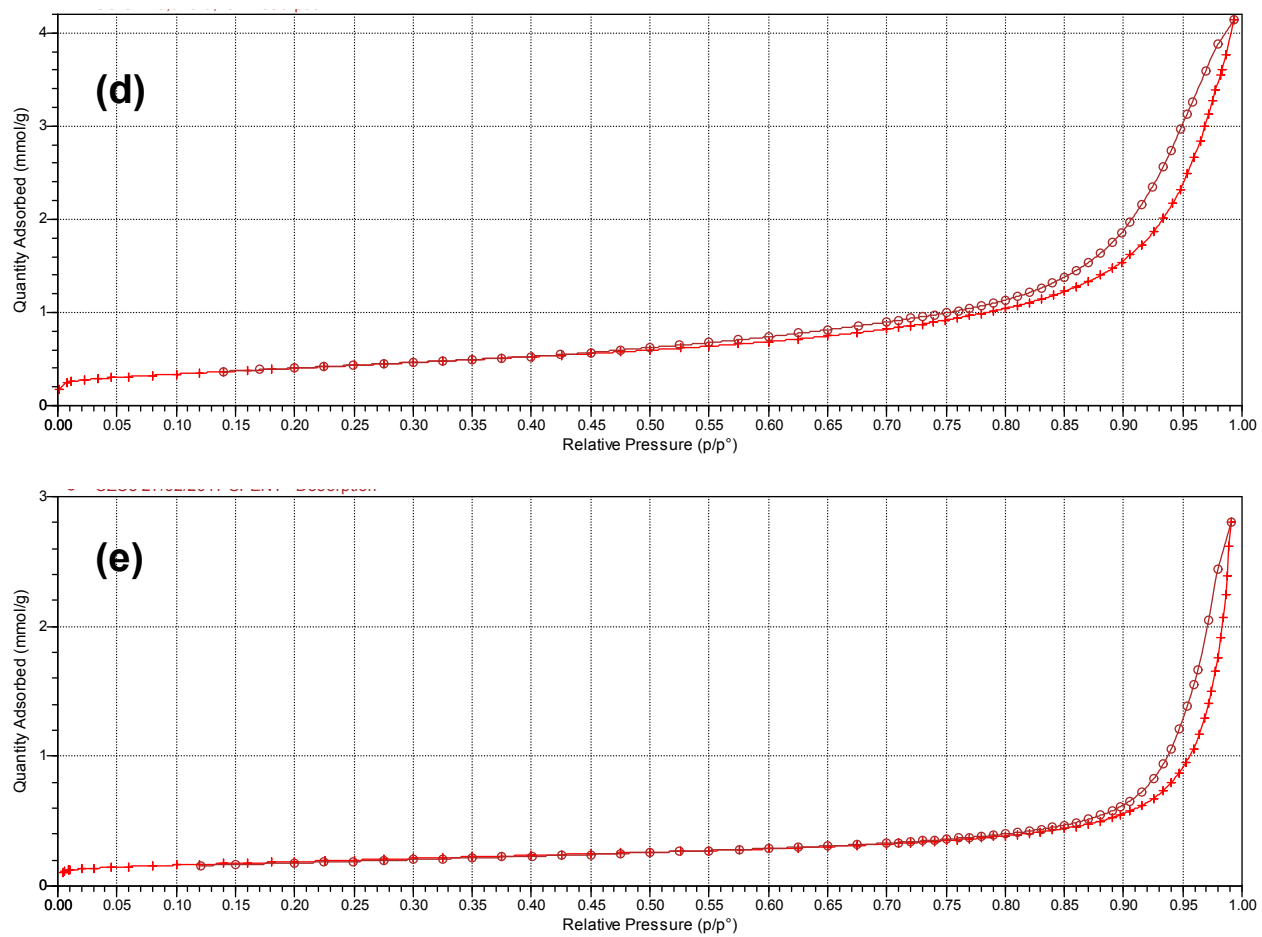


Figure S2: N₂ physisorption isotherms of FePO₄ catalyst. (a) fresh, (b) reduced (with CH₄) and oxidised with (c) N₂O, (d) O₂ and (e) H₂O.

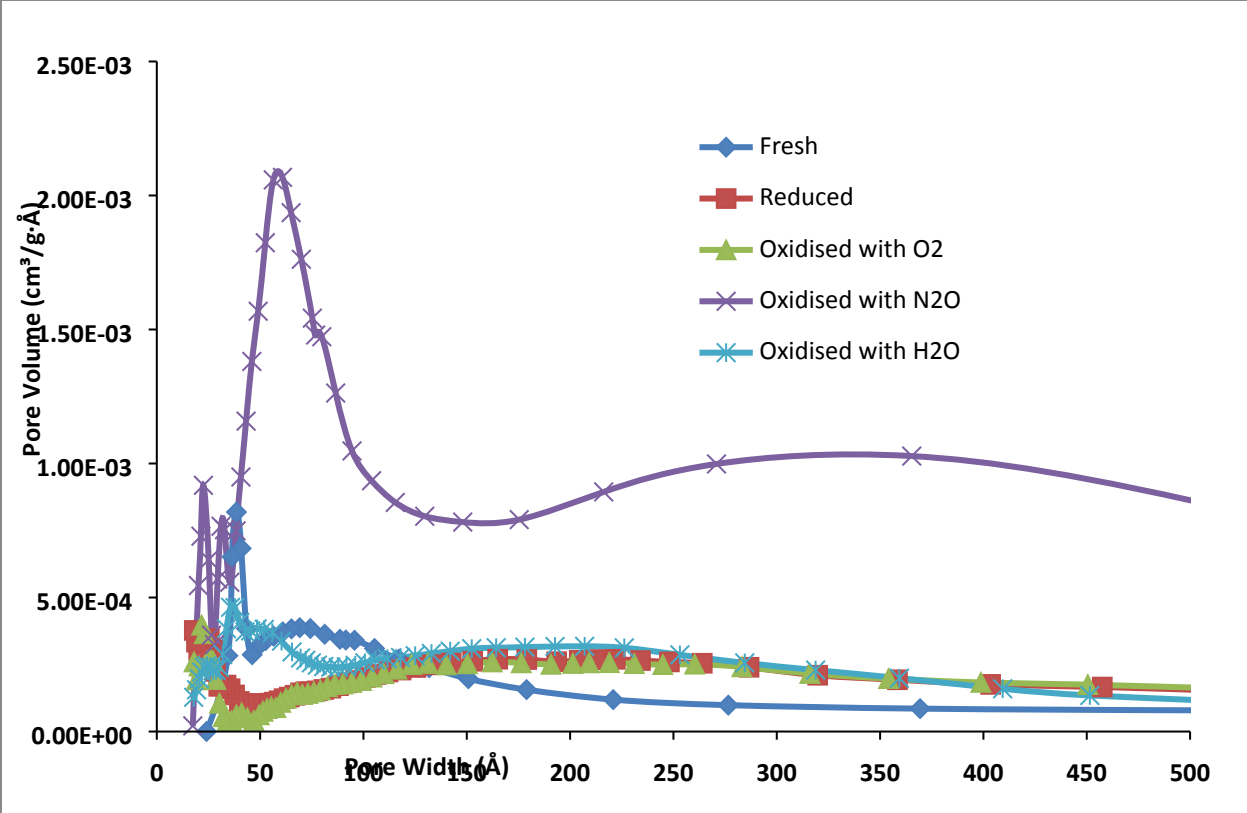


Figure S3: Pore size distribution plot of FePO₄ catalyst

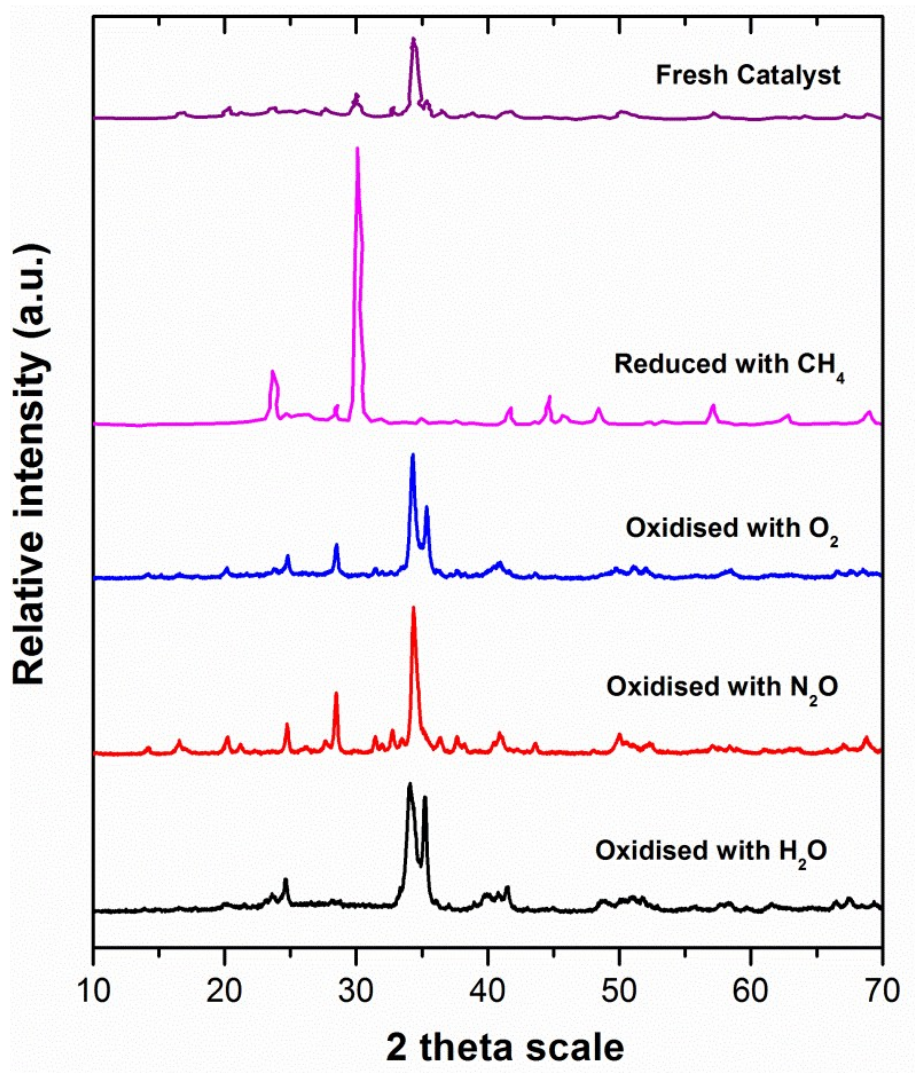


Figure S4: Powder X-ray diffraction of FePO₄ catalyst under various treatments [37] (Reprinted with permission from Springer Link)

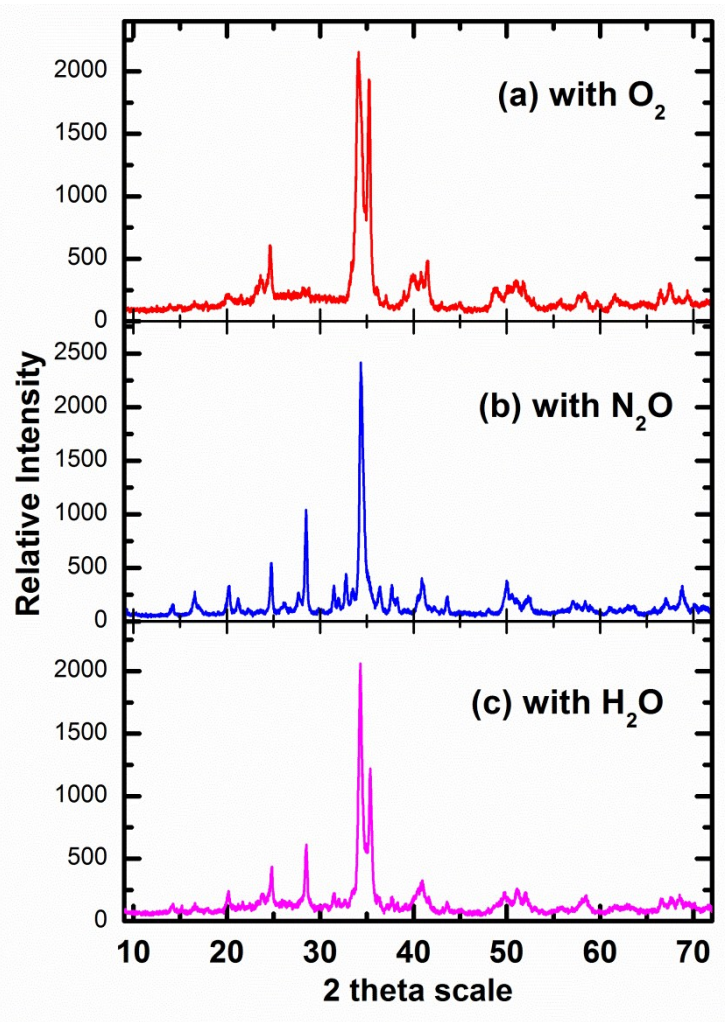


Figure S5 : Powder X-ray diffraction patterns of the used catalysts after reaction with (a) O₂, (b) N₂O and (c) H₂O.[37] (Reprinted with permission from Springer Link)