

Supplementary material

Methane conversion coupling with hydrogen production from water using Au/Ga₂O₃ photocatalysts prepared by different methods

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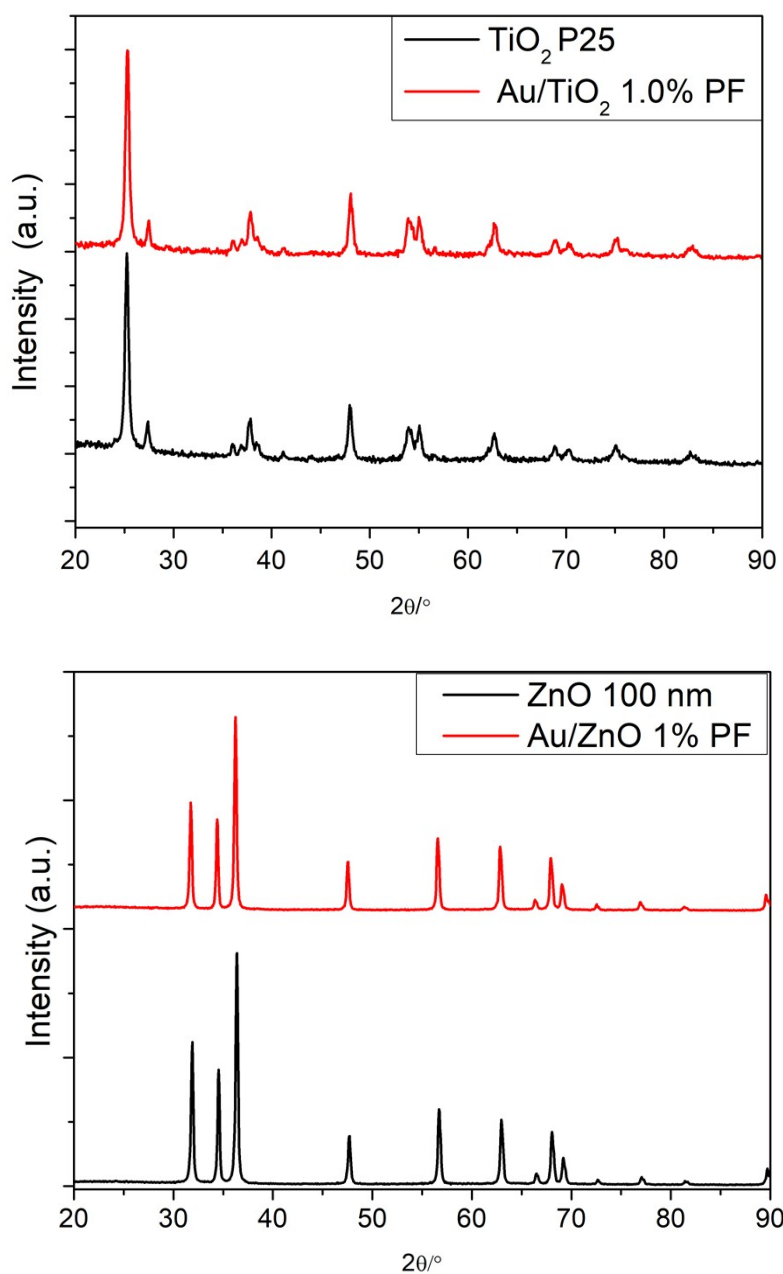
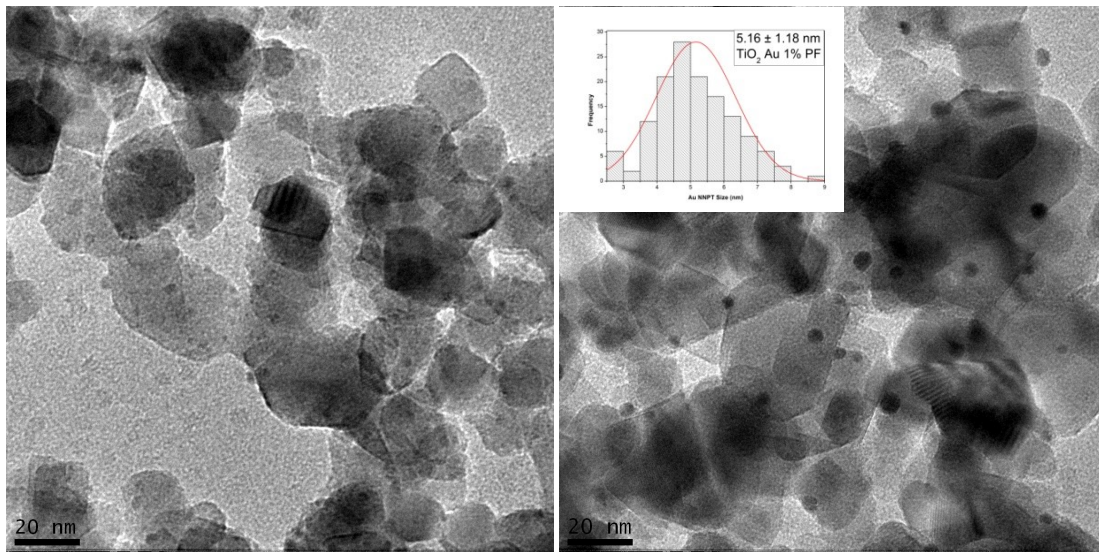


Figure S1- X-ray diffractograms of Au/TiO₂ 1.0% wt, and Au/ZnO 1.0% wt (red lines) and their respective supports (black lines).

a)



b)

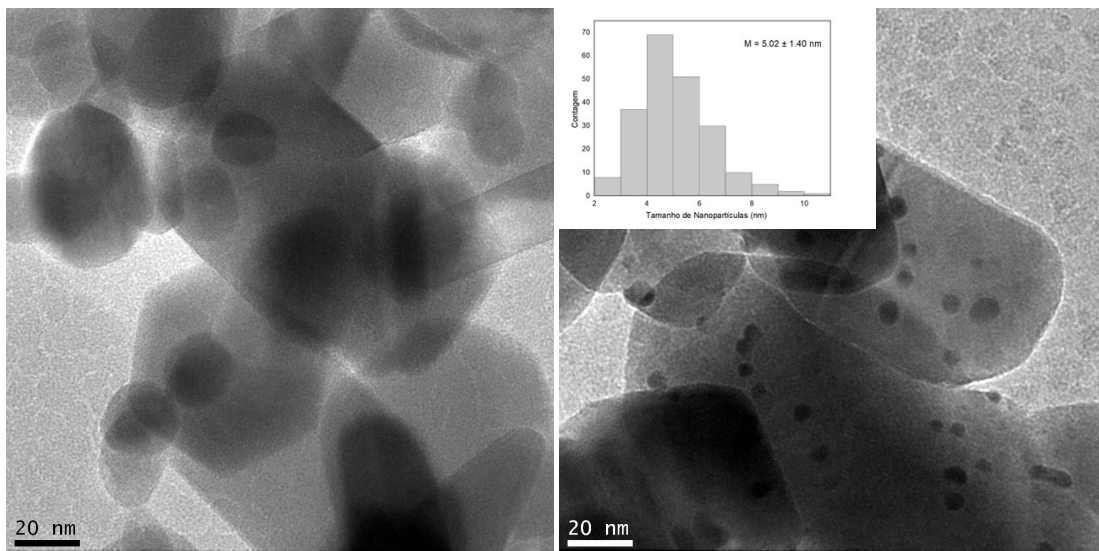


Figure S2 – Transmission electron micrographics of a) TiO₂ P25 and b) TiO₂ Au 1.0% wt pre-formed.

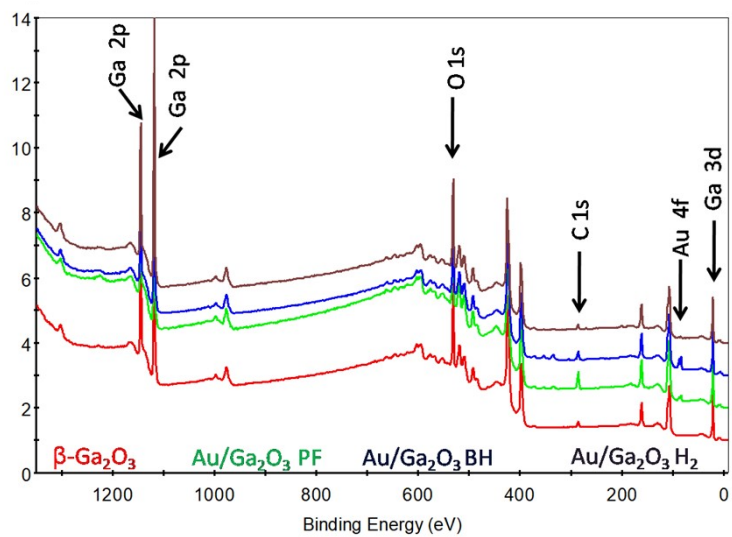


Figure S3- XPS survey spectra of $\beta\text{-Ga}_2\text{O}_3$ and $\text{Au/Ga}_2\text{O}_3$ 1.0% wt photocatalysts synthesized by PF, BH and H_2 methods.

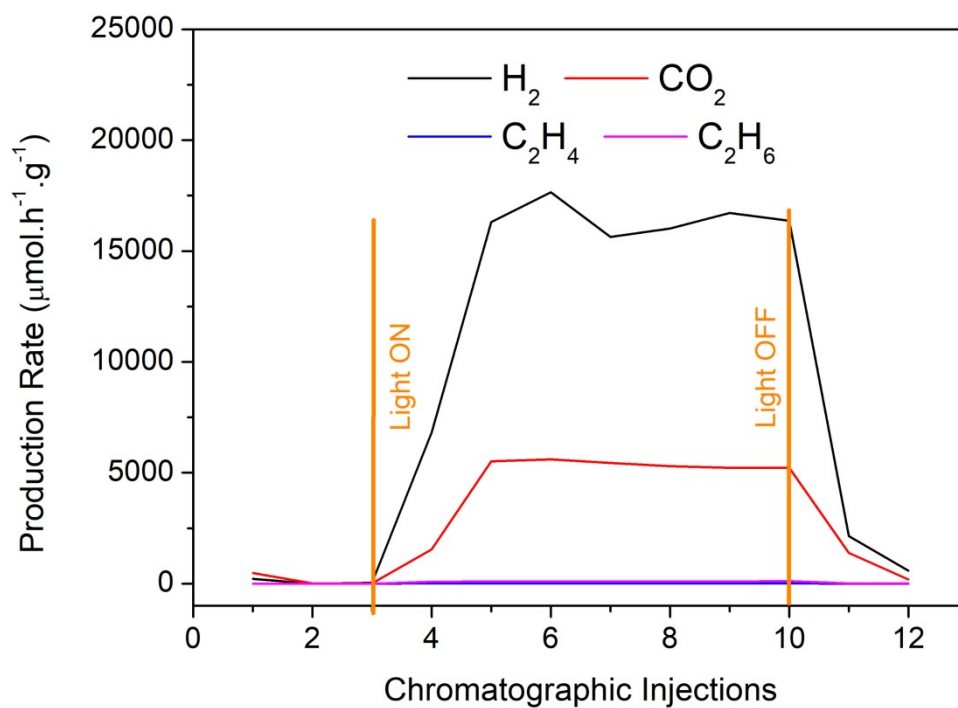


Figure S4 – Products formation profile for Au/ Ga_2O_3 BH 0.1% photocatalyst.

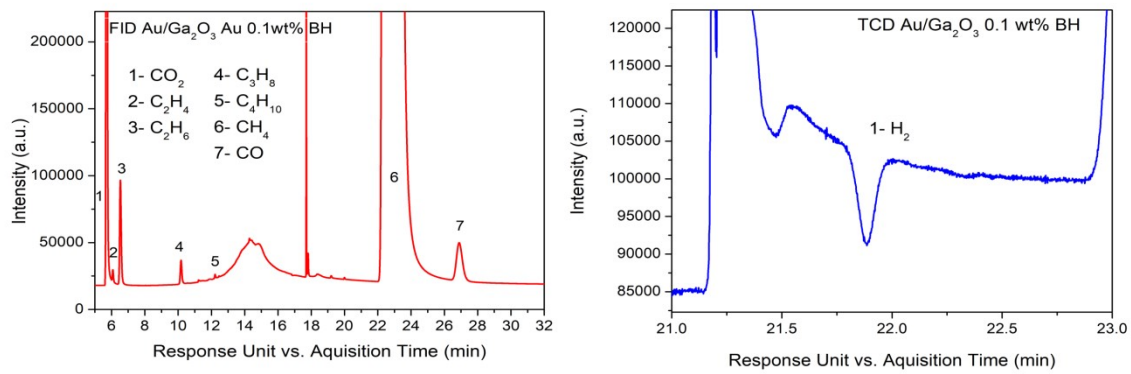


Figure S5 – Chromatograms of products obtained by Au/Ga₂O₃ 0.1%wt BH photocatalyst.