

SUPPLEMENTARY INFORMATION

Supported Nanostructured Mo_xC Materials for the Catalytic Reduction of CO₂ through the Reverse Water Gas Shift Reaction

Arturo Pajares ^{1,2,†}, Xianyun Liu ^{1,‡}, Joan R. Busacker ¹, Pilar Ramírez de la Piscina ¹ and Narcís Homs ^{1,2,*}

¹ Departament de Química Inorgànica i Orgànica, Secció de Química Inorgànica & Institut de Nanociència i Nanotecnologia (IN2UB), Universitat de Barcelona, Martí i Franquès 1, 08028 Barcelona, Spain

² Catalonia Institute for Energy Research (IREC), Jardins de les Dones de Negre 1, 08930 Barcelona, Spain

* Correspondence: nhoms@irec.cat or narcis.homs@qi.ub.edu

† Present address: Sustainable Materials Management, Flemish Institute for Technological Research (VITO NV), Boeretang 200, 2400 Mol, Belgium.

‡ Present address: College of Chemistry and Chemical Engineering, Henan Polytechnic University, Jiaozuo 454003, China.

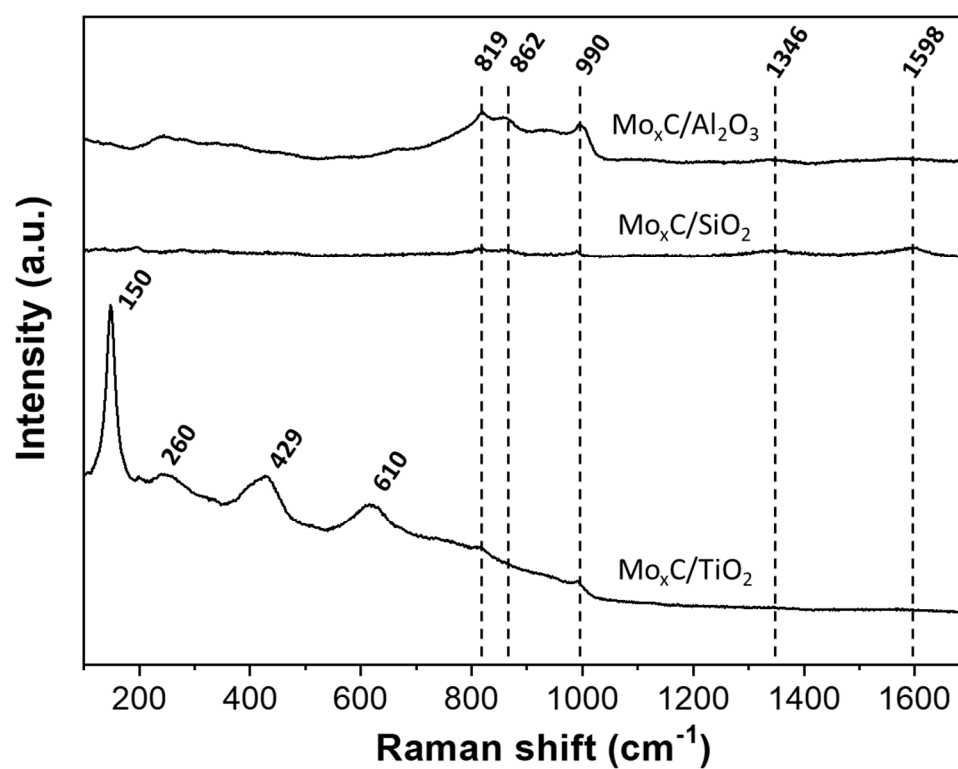


Figure S1. Raman spectra of fresh $\text{Mo}_x\text{C}/\text{support}$ catalysts.

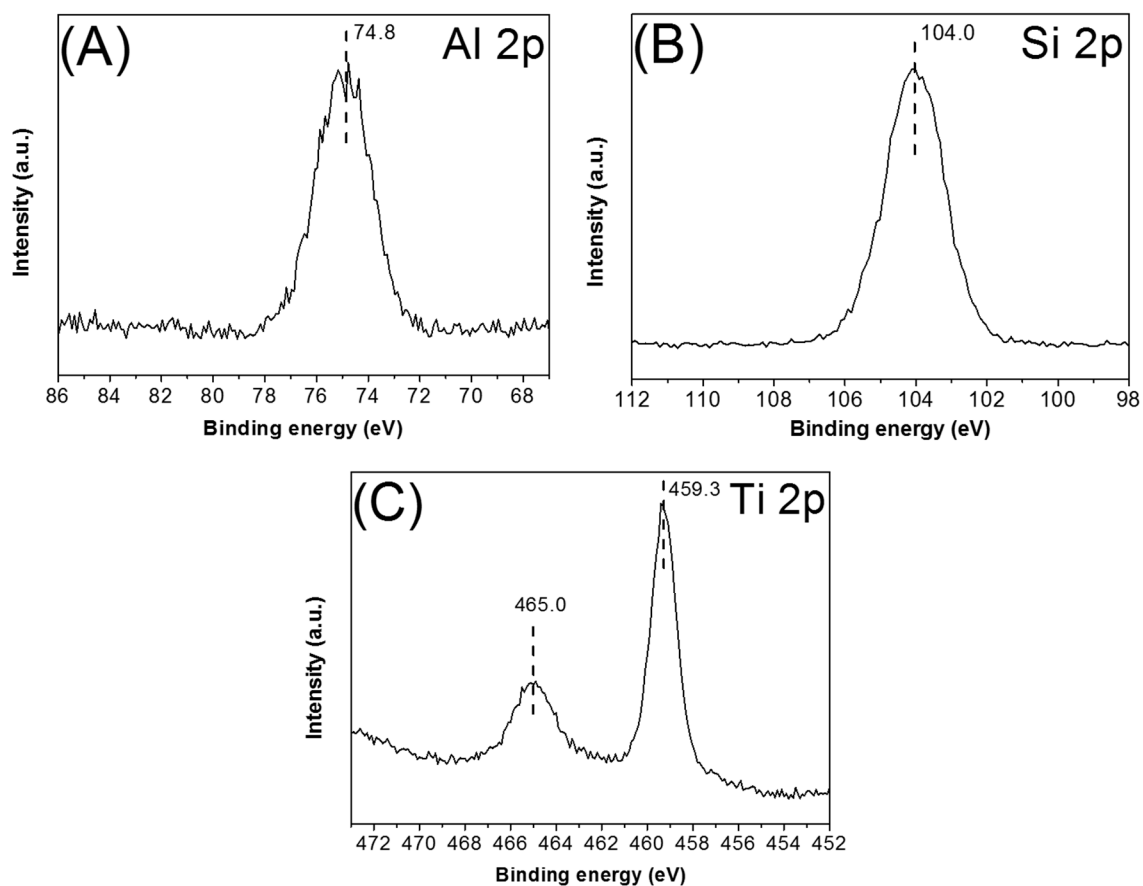


Figure S2. XPS spectra of $\text{Mo}_x\text{C}/\text{support}$ catalysts. (A) Al 2p level registered for $\text{Mo}_x\text{C}/\text{Al}_2\text{O}_3$, (B) Si 2p level registered for $\text{Mo}_x\text{C}/\text{SiO}_2$, (C) Ti 2p level registered for $\text{Mo}_x\text{C}/\text{TiO}_2$.

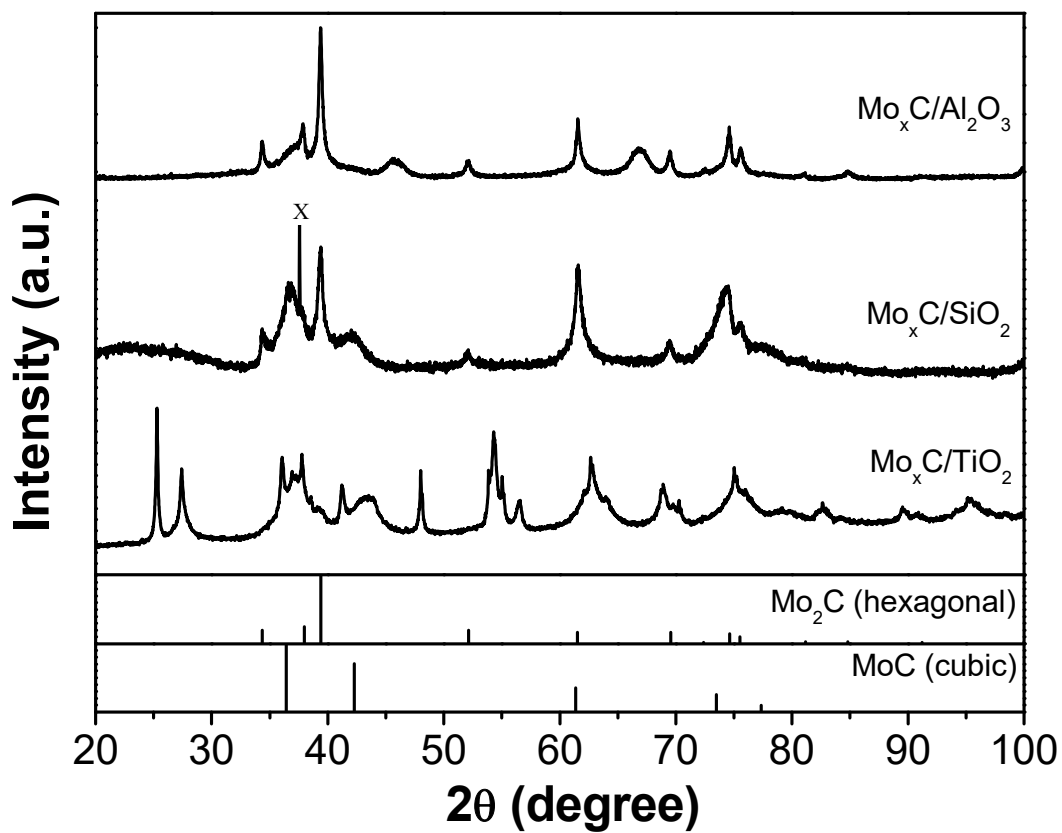


Figure S3. XRD patterns of $\text{Mo}_x\text{C}/\text{support}$ catalysts after RWGS reaction ($\text{CO}_2/\text{H}_2=1/3$); reaction conditions: $m_{\text{cat}}=150$ mg, $\text{GHSV}=3000$ h^{-1} , $P=0.1$ MPa. X: signal due to SiC from catalytic bed.

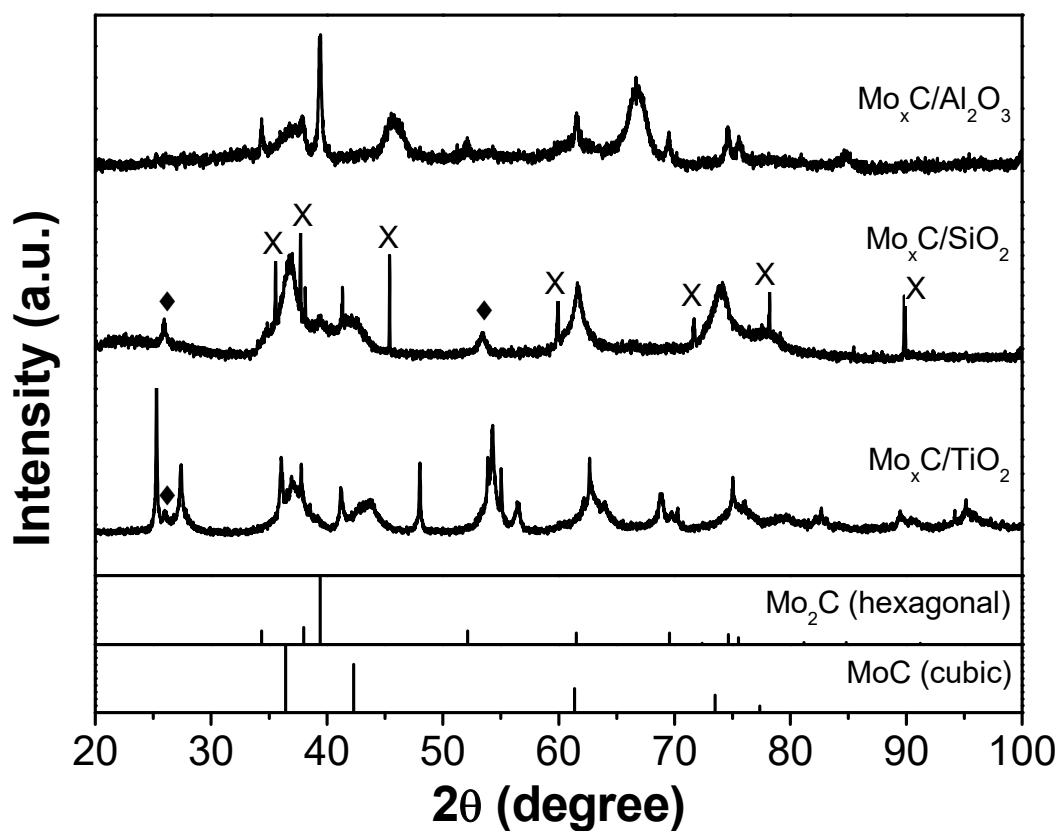


Figure S4. XRD patterns of $\text{Mo}_x\text{C}/\text{support}$ catalysts after RWGS reaction ($\text{CO}_2/\text{H}_2=1/1$); reaction conditions: $m_{\text{cat}}=150$ mg, $\text{GHSV}=3000$ h^{-1} , $P=0.1$ MPa.

\diamond : MoO_2 ; X: signal due to SiC from catalytic bed.