Synthesis of ethylene glycol from syngas via oxidative double carbonylation of ethanol to diethyl oxalate and its subsequent hydrogenation

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Supporting Information

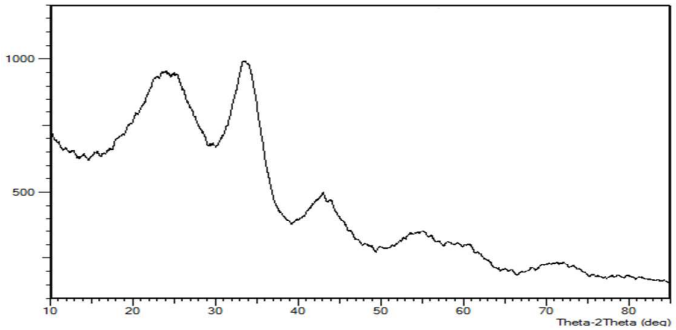

Figure S1: XRD of fresh Pd/C catalyst.

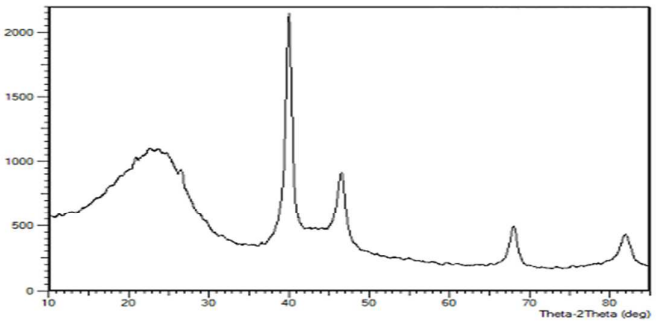

Figure S2: XRD of 1st recycled Pd/C catalyst.

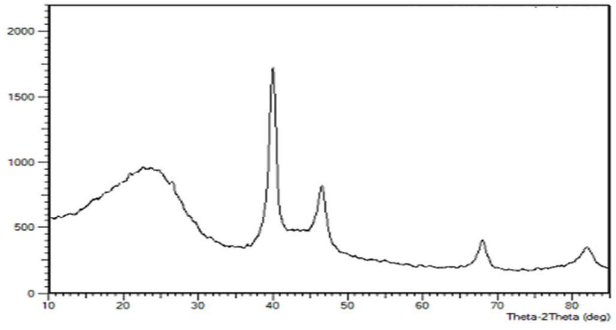

Figure S3: XRD of 4th recycled Pd/C catalyst.

Structural changes of fresh ,1st and 4th recycled Pd/C catalyst was studied by X-ray diffraction (XRD. The XRD pattern showed the, diffracted peaks for the Pd/C catalyst and no significant structural change found in fresh and recycled catalyst.

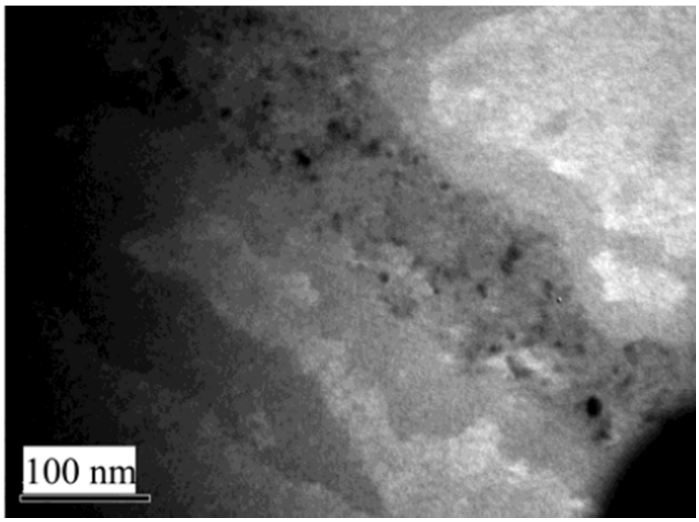

Figure S4: TEM image of Fresh Pd/C catalyst

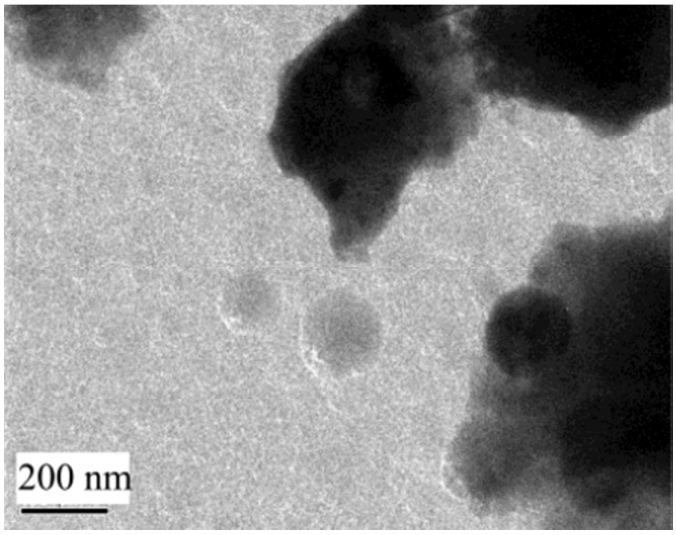

Figure S5: TEM image of 4th recycled Pd/C catalyst

The TEM analysis showed that the components of the Pd uniformly distributed over the carbon surface and no agglomeration happen.