Supplementary Materials

Synthesis and characterization of supported Pd catalysts for potential application in glycerol electro-oxidation

Talent Ngwenya [1], *Nolwazi Nombona* [2] *and Mzamo Shozi* [1,*]

[1] School of Chemistry and Physics, University of KwaZulu-Natal, Durban 4000, South Africa

[2] Department of Chemistry, University of Pretoria, Pretoria 0001, South Africa

* Correspondence: shozim2@ukzn.ac.za

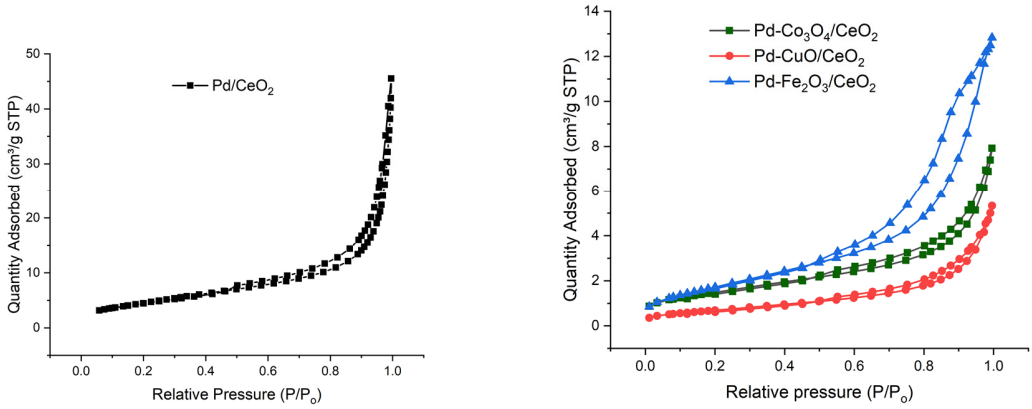

Figure S1. BET isotherms of the prepared catalysts.

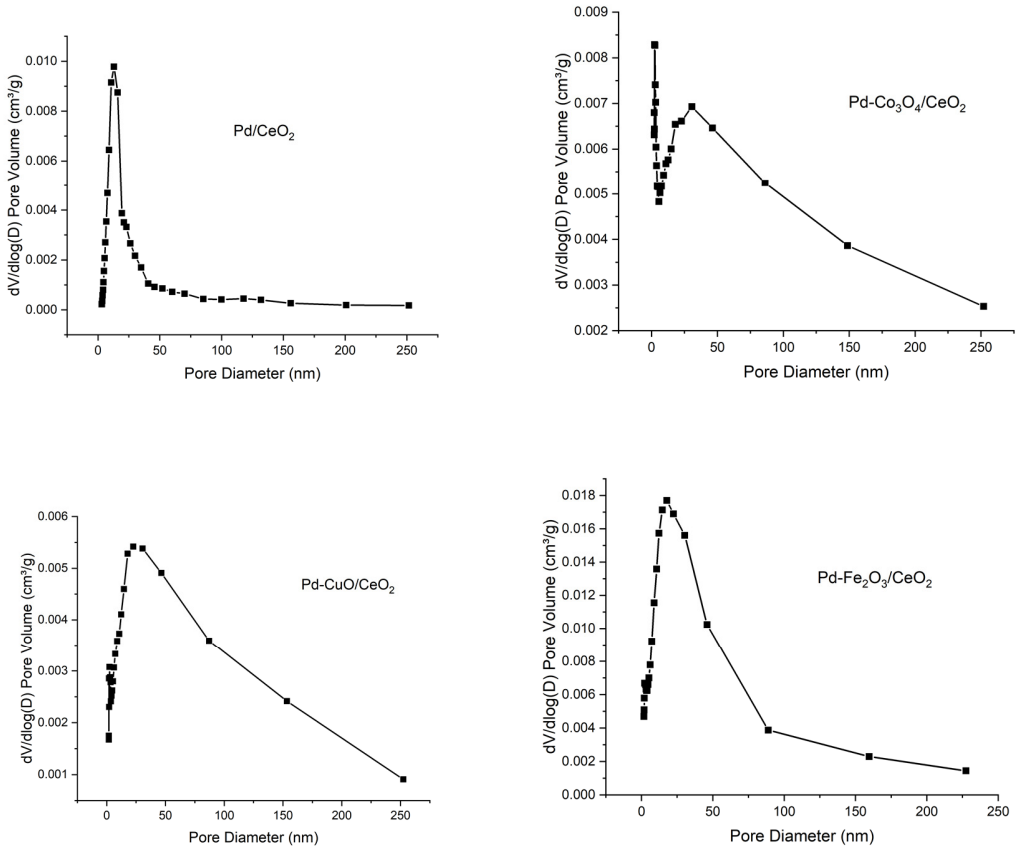

Figure S2. Pore size distributions of the prepared catalysts.

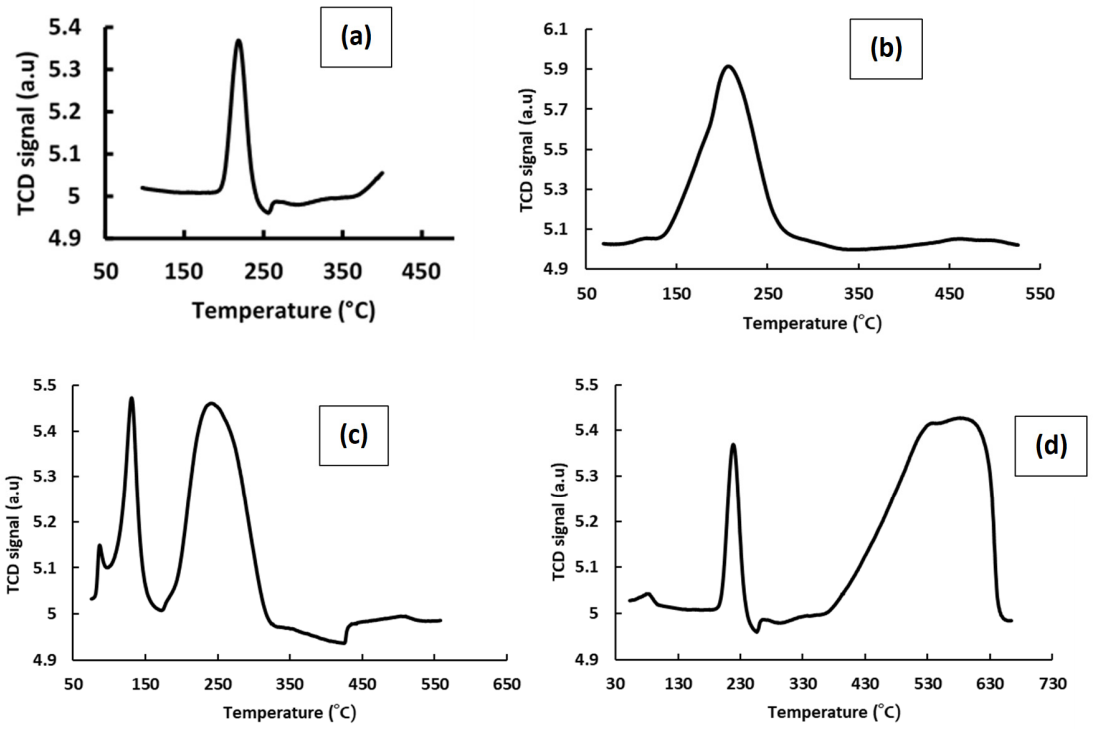

Figure S3. H_2-TPR profiles of **(a)** Pd/CeO_2 **(b)** $Pd\text{-}CuO/CeO_2$ **(c)** $Pd\text{-}Co_3O_4/CeO_2$ and **(d)** $Pd\text{-}Fe_2O_3/CeO_2$ catalysts.

Table S1. Summary of TPR data of the Pd catalysts.

Catalyst	Peak 1/ °C	Peak 2/ °C	Reducibility * / %
Pd/CeO_2	212	-	70
$Pd\text{-}CuO/CeO_2$	211	-	73
$Pd\text{-}Co_3O_4/CeO_2$	131	256	95
$Pd\text{-}Fe_2O_3/CeO_2$	221	553	89

* Degree of reducibility = (moles H_2 consumed/ moles reducible metal) × 100.

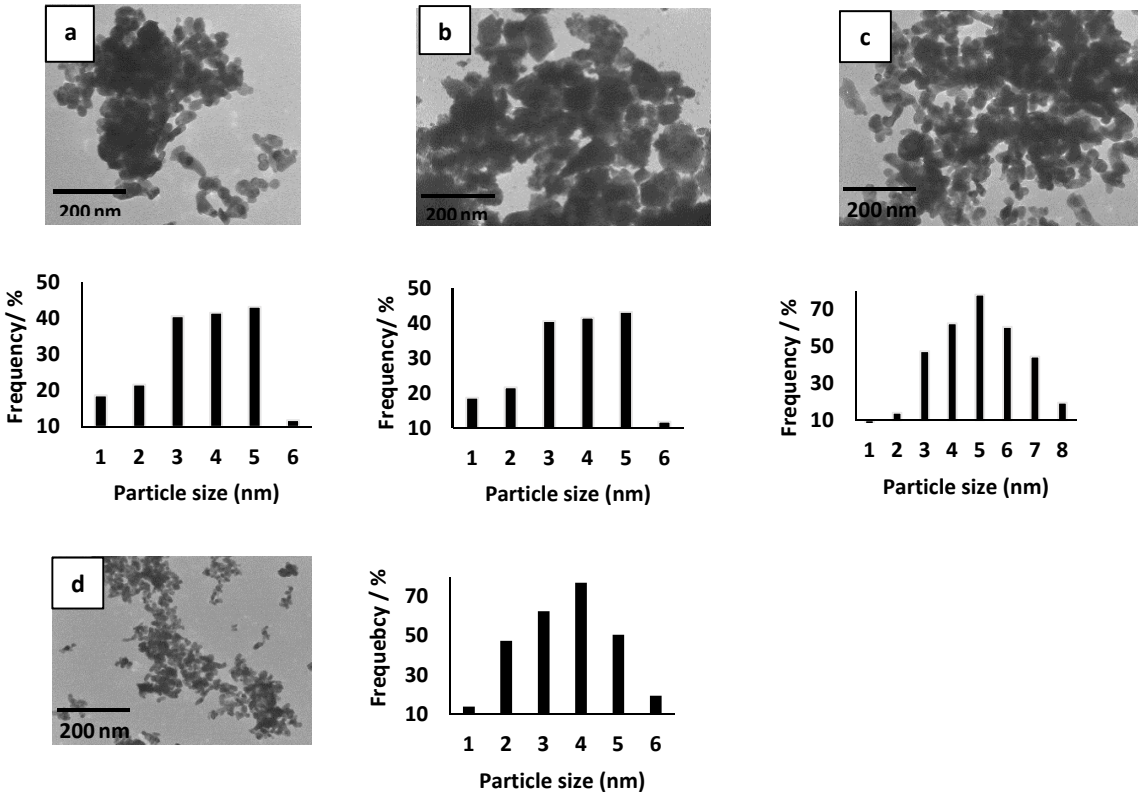

Figure S4. TEM images and corresponding particle size distribution of **(a**) Pd/CeO_2**, (b)** Pd-CuO/CeO_2, **(c)** Pd-Co_3O_4/CeO_2 and **(d)** Pd-Fe_2O_3/CeO_2 catalysts.