

Fig. Supp.1: EDX analyses of the area shown in Fig.Supp.2A revealing the presence of residual Pd catalyst particles on the top of the substrate surface.

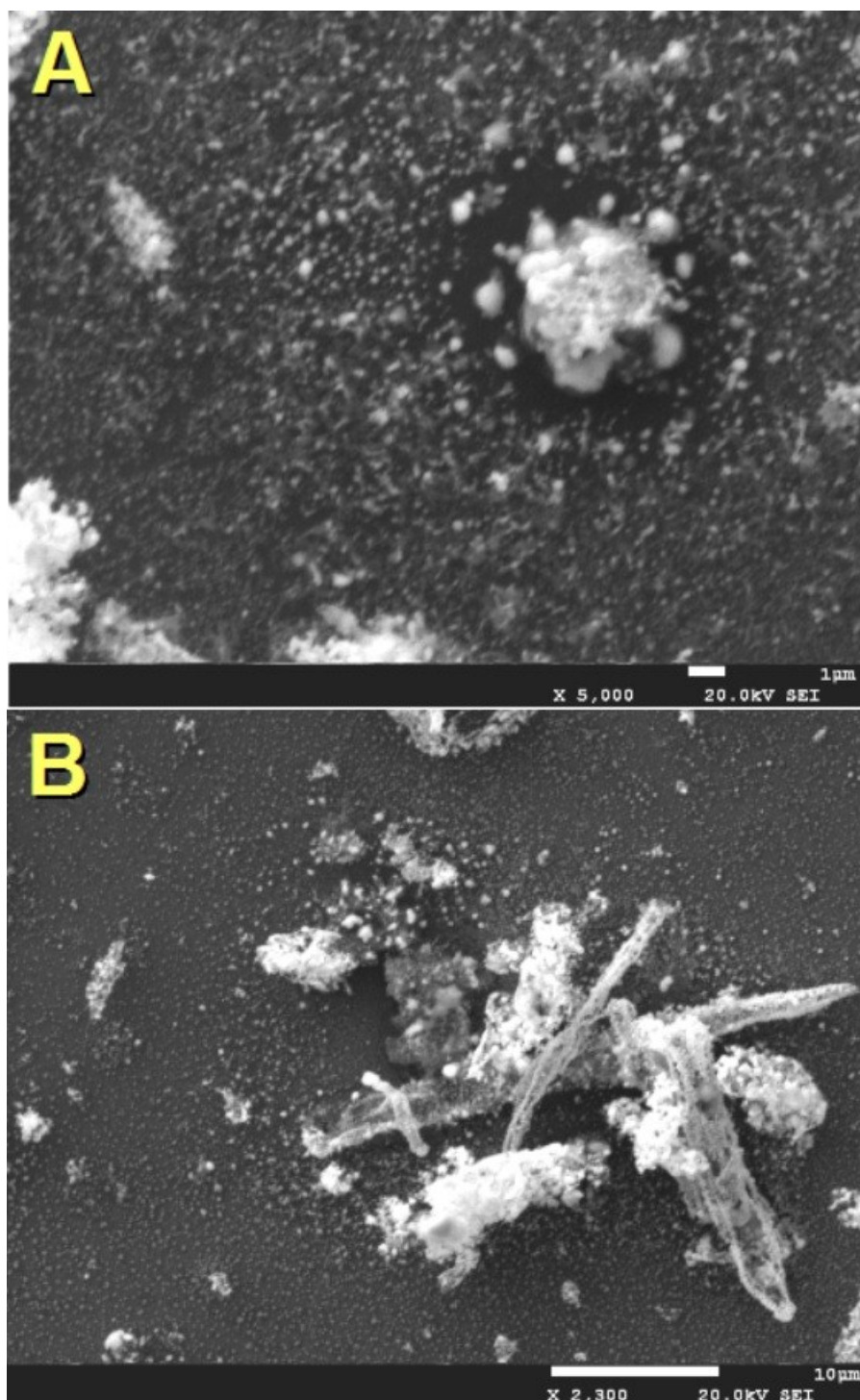


Fig. Supp.2: Scanning electron micrograph showing residual Pd particles deposited in the substrate surface during the stage 1 of the reaction in A. Some examples of the grown structures are also shown in B.

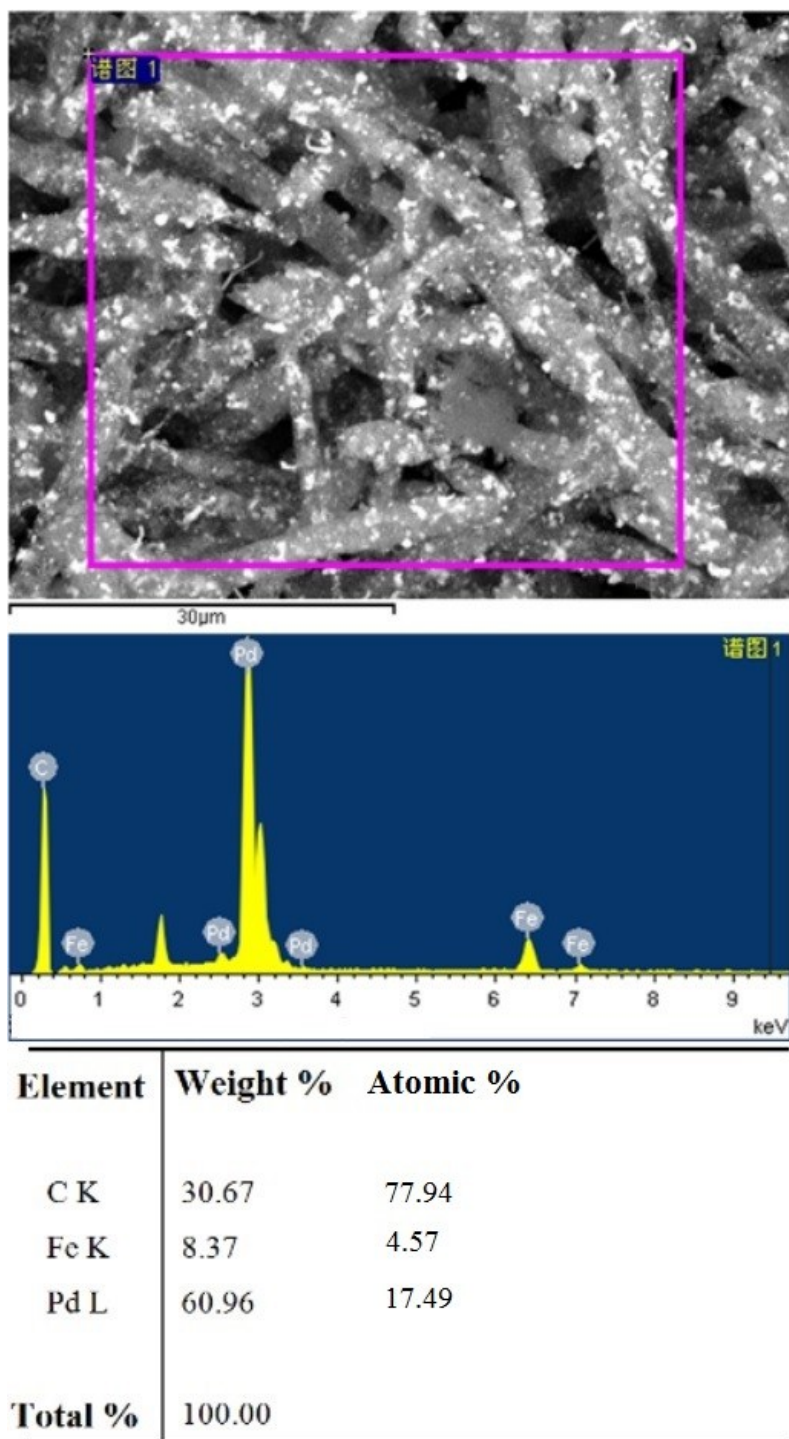


Fig. Supp.3: Scanning electron micrograph showing with backscattered electrons the area chosen for EDX analyses. The result of the EDX analyses show approximately a ratio of 1 (Fe): 3 (Pd) (see inset) with respective weight % of the elements. Note that due to the contribution of the elements in the neighbour particles within the graphitic structures, EDX can not be used to estimate accurately the atomic % composition of a single encapsulated particle. However it seems clear that a possible ratio of Fe (1): Pd (3) is present. This is confirmed by the Rietveld analyses of the XRD diffractograms.