

Supporting information

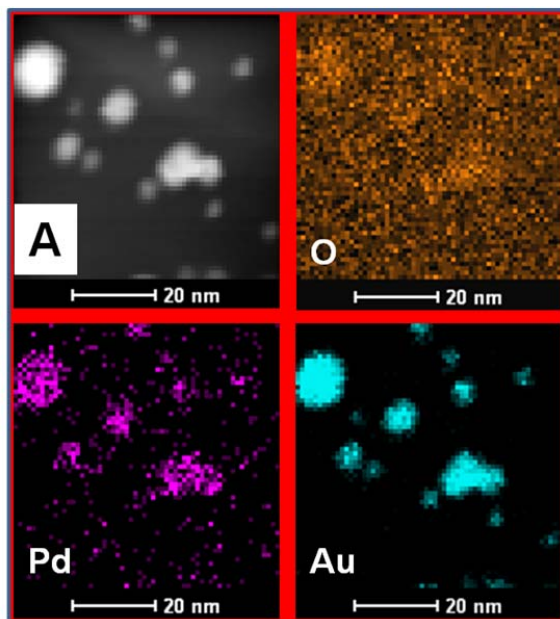


Figure S1. HAADF-STEM (A) and EDX mapping (B).

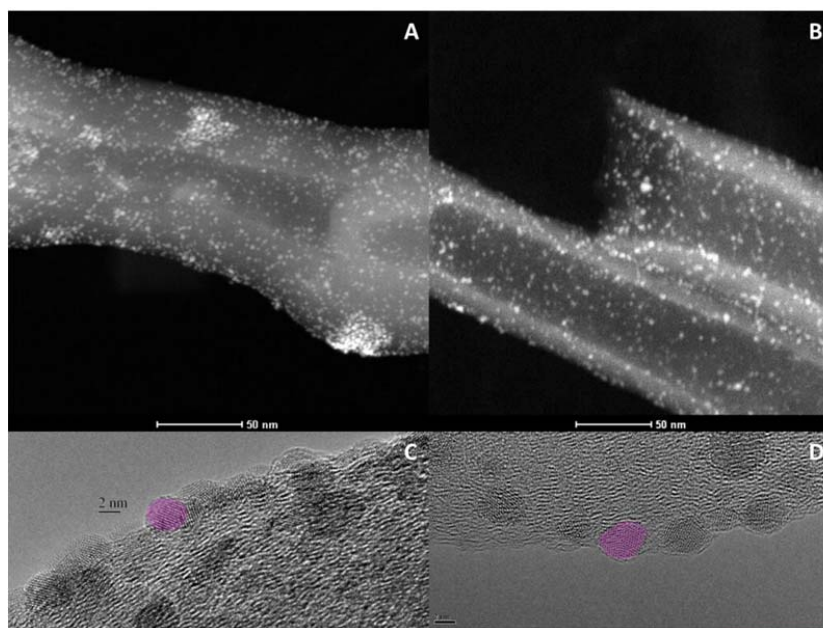


Figure S2. HAADF-STEM for Pd₄₇₃ (A); Pd₈₇₃ (B). HRTEM for Pd₄₇₃ (C) and Pd₈₇₃ (D). The images show the more pronounced particles agglomeration on NCNT473 than on NCNT873; and the enhanced wetting of the particles at the NCNT for the Pd₈₇₃ than for the Pd₄₇₃ (pink-coloured particles).

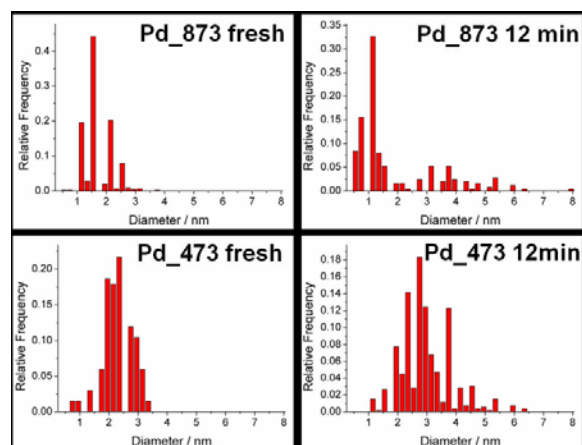


Figure S3 derived particles size distribution from HAADF-STEM images.

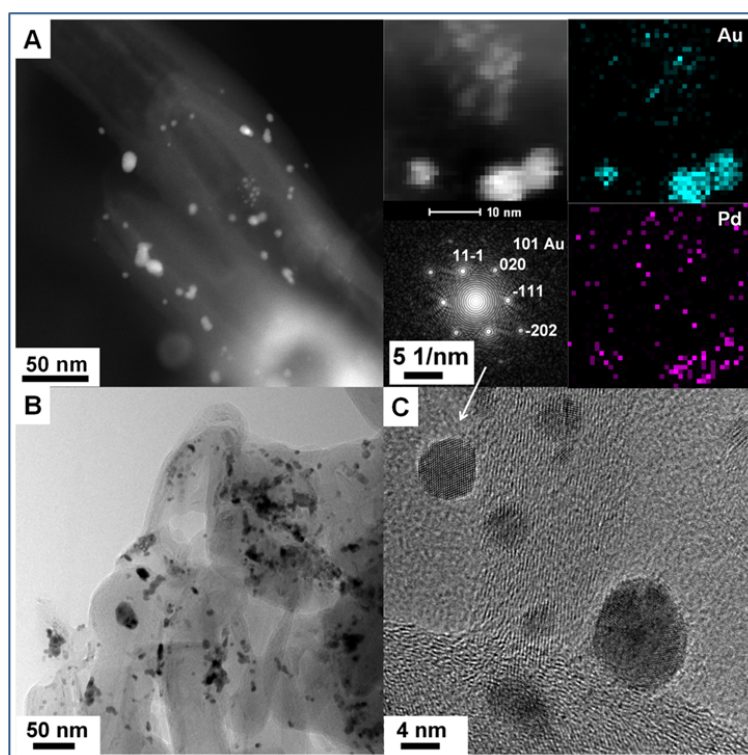


Figure S4. HAADF-STEM and EDX mapping (A); TEM (B) and HRTEM (C) on PdAu/NCNT473K*.

Table S1. XPS Elemental composition [(At± St. Dev.)%].								
Catalyst	Pd_873	Pd_873u	Pd_473	Pd_473u	PdAu_873	PdAu_873u	PdAu_473	PdAu_473u
N	3.15±0.9	3.5±0.45	4.7±0.3	4.6±0.3	2.5±0.36	2.5±0.3	3.6±0.4	3.5±0.3
Pd	1.90±0.1	1.60±0.06	1.52±0.08	1.48±0.06	0.80±0.07	0.70±0.07	0.59±0.09	0.5±0.05

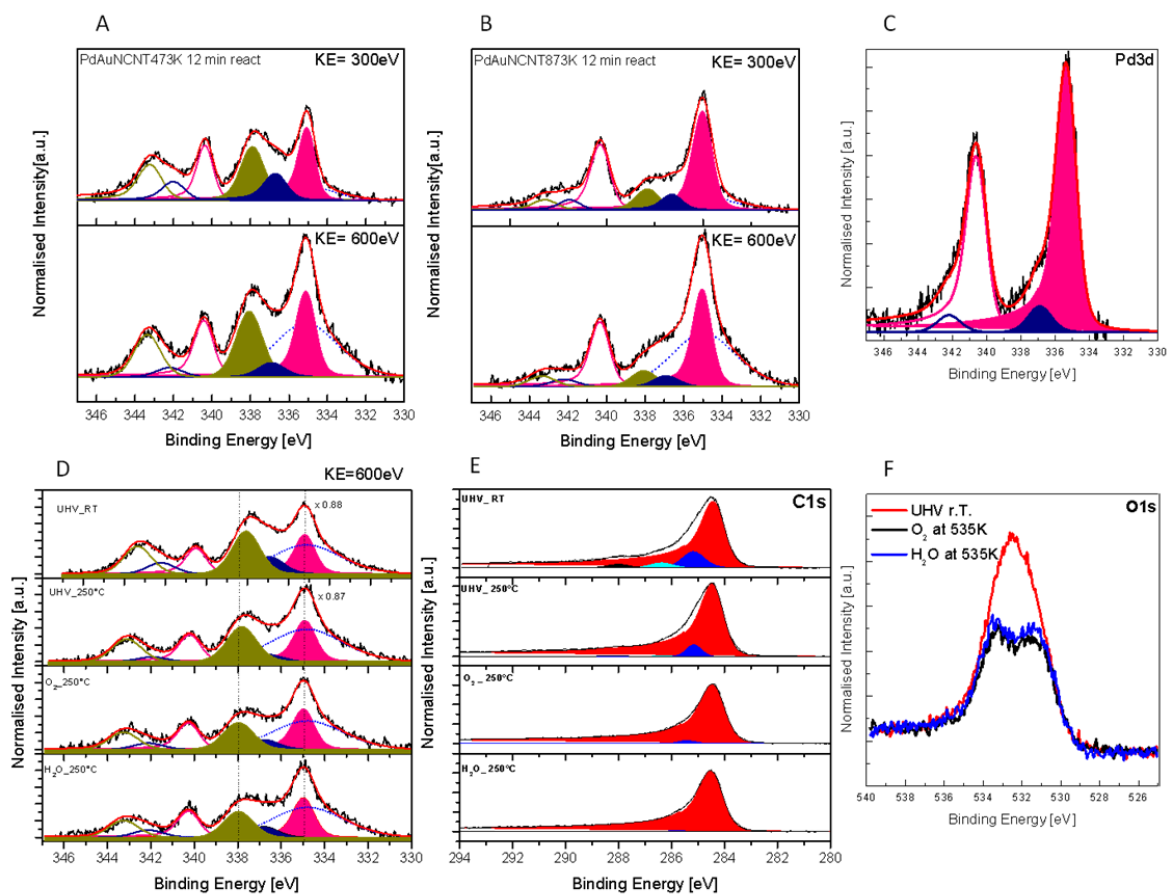


Figure S5. Pd3d for PdAuNCNT473K (A); PdAuNCNT873K (B); Pd3d for Pd/CNT (C); in-situ investigation on PdAuNCNT473K*: Pd3d at 600eV (D); C1s at 435 eV (E) and O1s (F).

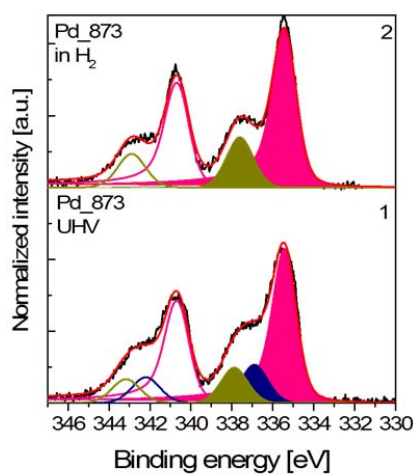


Figure S6. Pd3d on Pd₈₇₃ in UHV (1); afterward 0.1mbar H₂ was introduced in the chamber and the spectrum in (2) was recorded.