Supplementary Files

High active PdSn binary alloyed catalysts supported on B and N codoped graphene for formic acid electro-oxidation

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Supplementary Figures

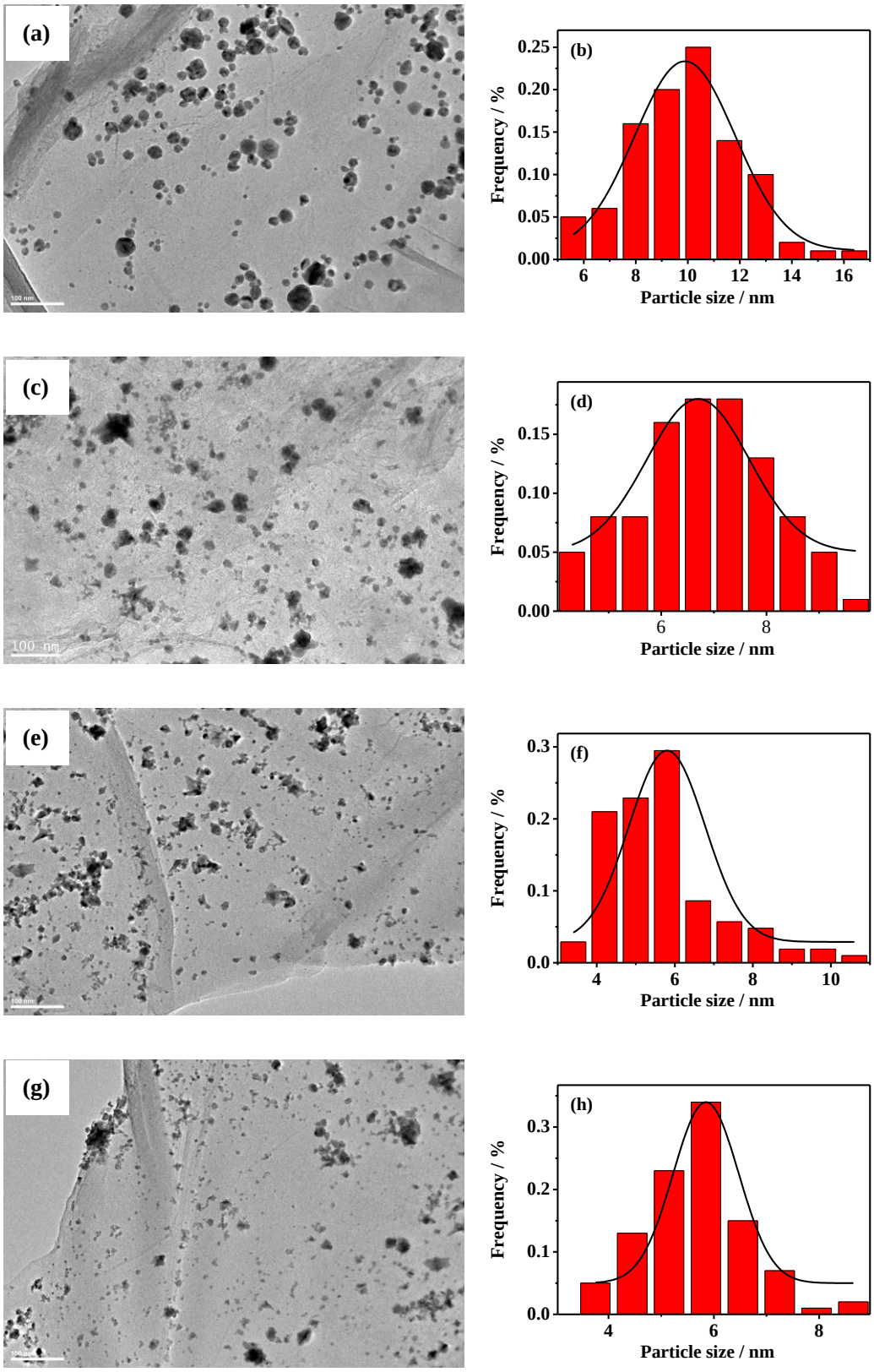


Figure S1. (a) TEM image of 3Pd1Sn/ G and **(b)** its corresponding particle size distribution; **(c)** TEM image of 1Pd1Sn/ BN-G and **(d)** its corresponding particle size distribution; **(e)** TEM image of 2Pd1Sn/

BN-G and **(f)** its corresponding particle size distribution; **(g)** TEM image of 4Pd1Sn/ BN-G and **(h)** its corresponding particle size distribution.

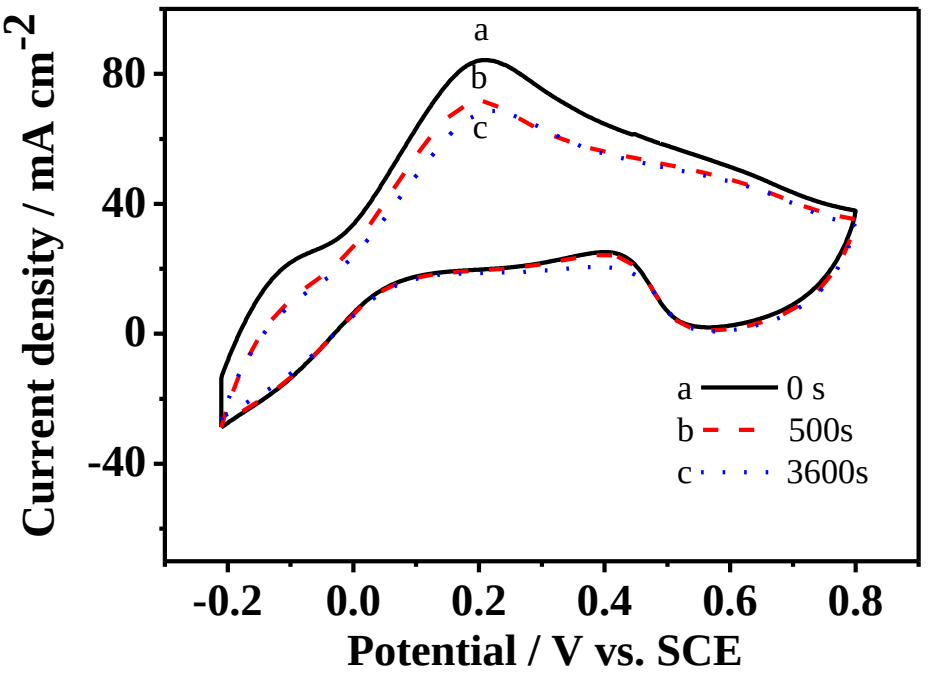


Figure S2. Cyclic voltammograms of 3Pd1Sn/BN-G in the solution with 1 M HCOOH + 0.5 M H_2SO_4 solution during the stability test at different time intervals (0s, 500s, 3600s) , scan rate: 50 mV s^{-1}.

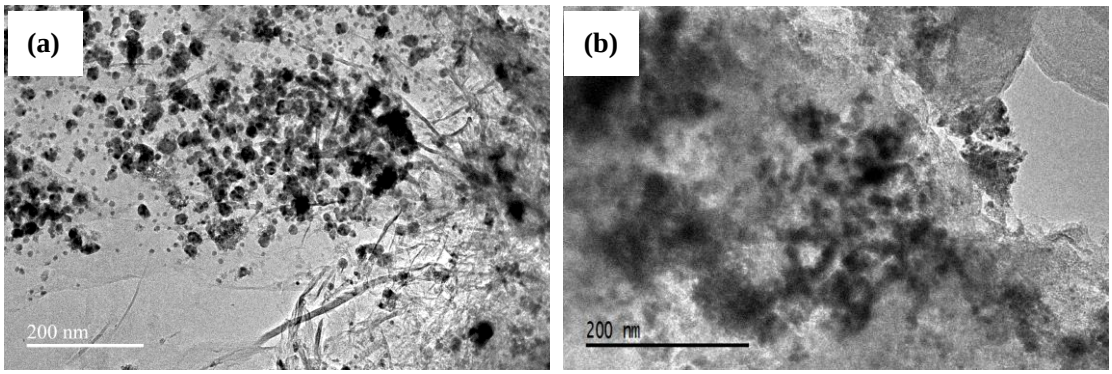


Figure S3. TEM images of 3Pd1Sn/BN-G before (a) and after (b) the electrocatalytic stability test toward the electrochemical oxidation of HCOOH.

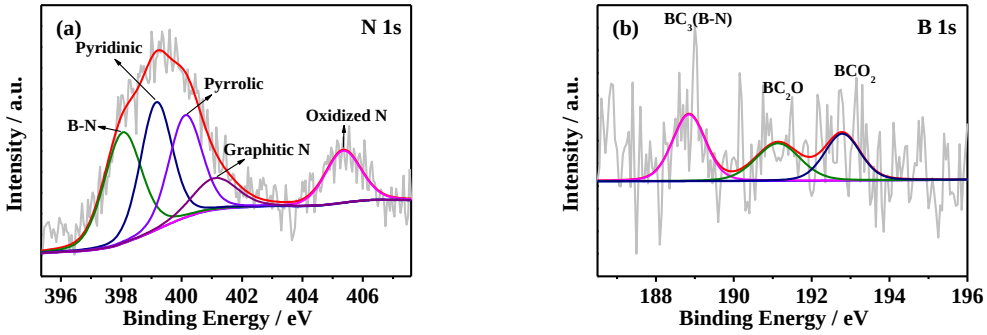


Figure S4. XPS spectra of **(a)** N 1s region and **(b)** B 1s region in 3Pd1Sn/BN-G

Table S1. EDS results of 3Pd1Sn/BN-G.

Element content / wt %					
C	O	B	N	Pd	Sn
73.08	8.74	6.16	1.83	6.75	3.44