Understanding the Role of Nanoparticle Synthesis on Their Underlying Electrocatalytic Activity

Han-Pu Liang, †* Timothy G. J. Jones, † Nathan S. Lawrence, †* Li Jiang † and Jonathan S. Barnard §

[†]Schlumberger Cambridge Research, High Cross, Madingley Road, Cambridge, CB3
0EL, UK, [‡]Schlumberger-Doll Research, 1 Hampshire Street, Cambridge,
Massachusetts 02139,

§Department of Materials Science and Metallurgy, University of Cambridge, Pembroke Street, Cambridge CB2 3QZ, UK

RECEIVED DATE (to be automatically inserted after your manuscript is accepted if required according to the journal that you are submitting paper to)

* To whom correspondence should be addressed. Fax: +44 1223467004

E-mail: <u>hliang@cambridge.oilfield.slb.com</u> <u>nlawrenc@cambridge.oilfield.slb.com</u>

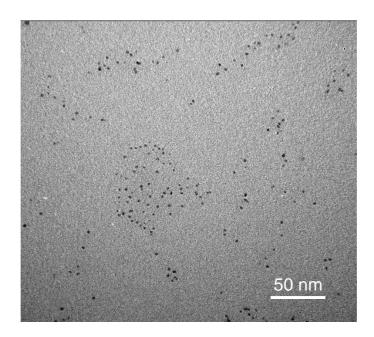


Figure S1: Typical TEM image of Pt nanoparticles using PVP as stabling agent

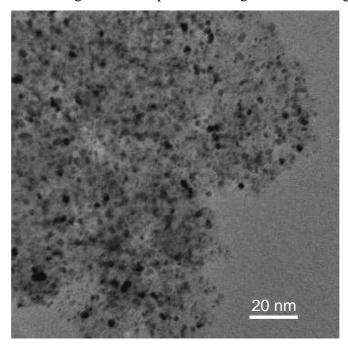


Figure S2: Typical TEM image of unprotected Pt nanoparticles

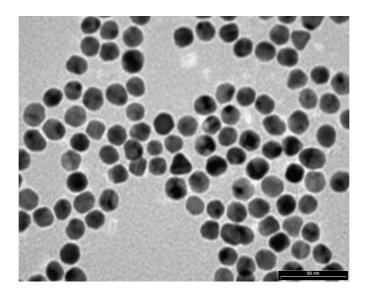


Figure S3: Typical TEM image of Au nanoparticles.

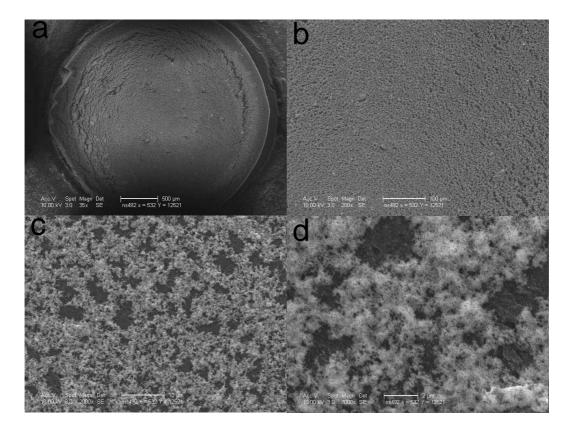


Figure S4 Typical SEM images at different magnification of $Au_{25}Pt_{75}$ nanoparticles placed on the glass carbon electrode surface. Pt loading was 20 nmol.

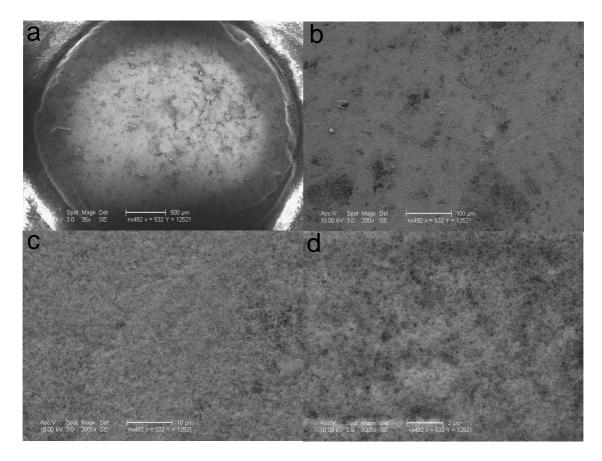


Figure S5 Typical SEM images at different magnification of $Au_{57}Pt_{43}$ nanoparticles placed on the glass carbon electrode surface. Pt loading was 20 nmol.