## SUPPLEMENTARY INFORMATION

## Metal deposition and electrocatalysis for elucidating structural changes of gold electrodes during cathodic corrosion

Mohamed M. Elnagar, Ludwig A. Kibler\*, Timo Jacob\*

Institute of Electrochemistry, Ulm University, 89069 Ulm, Germany

\*Corresponding authors:

Ludwig A. Kibler, E-mail: <u>ludwig.kibler@uni-ulm.de</u> Timo Jacob, E-mail: <u>timo.jacob@uni-ulm.de</u>



Figure S1. Conventional three-electrode electrochemical glass cell used to study FAOR and HER.



Figure S2. The calculated (a) ratio of wide/narrow (111)-domains and (b) EASA factors from the Pb-UPD curves.



Figure S3. Cyclic voltammogram for as-polished Au electrode in 0.1 M HCl + 0.1 mM PdCl<sub>2</sub>. Scan rate: 5 mV s<sup>-1</sup>.