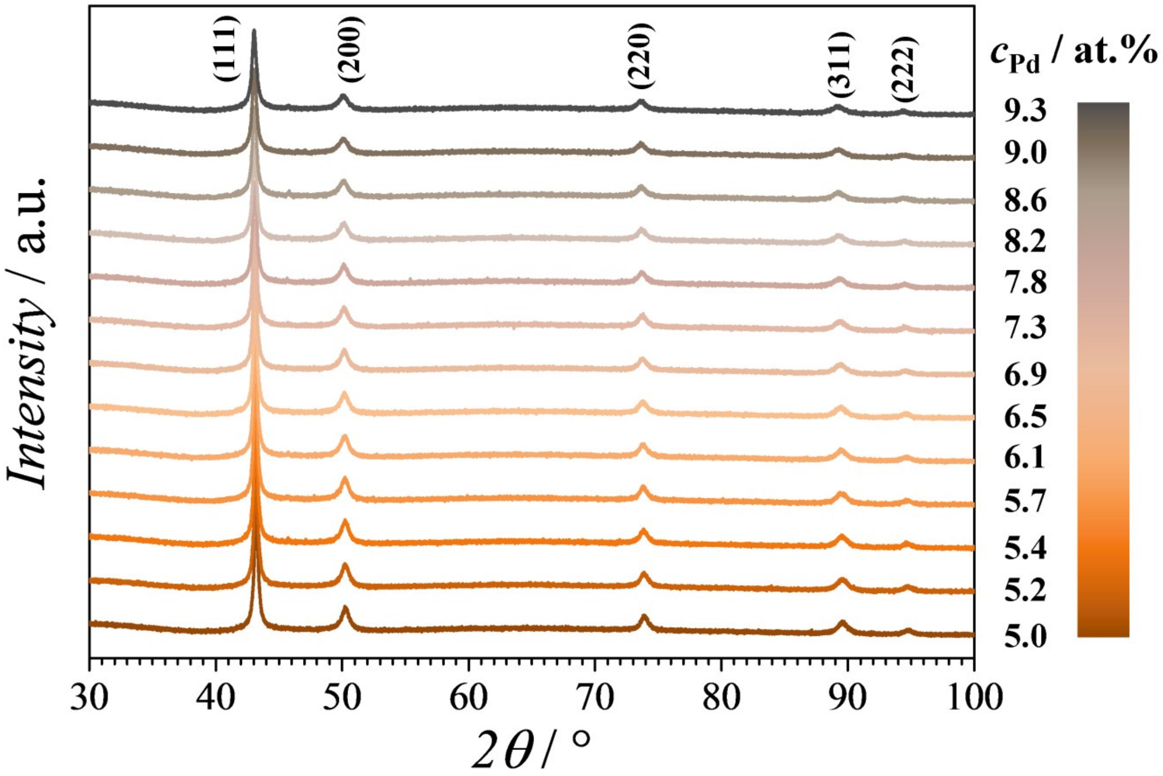
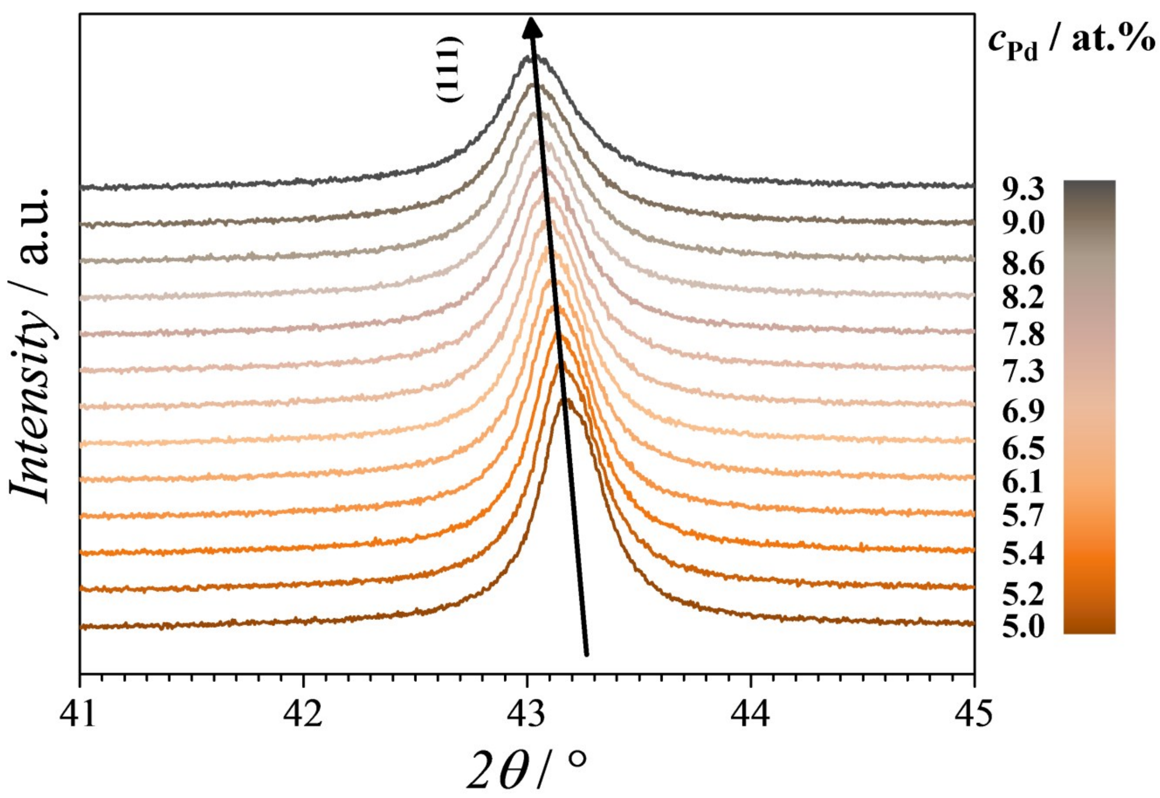
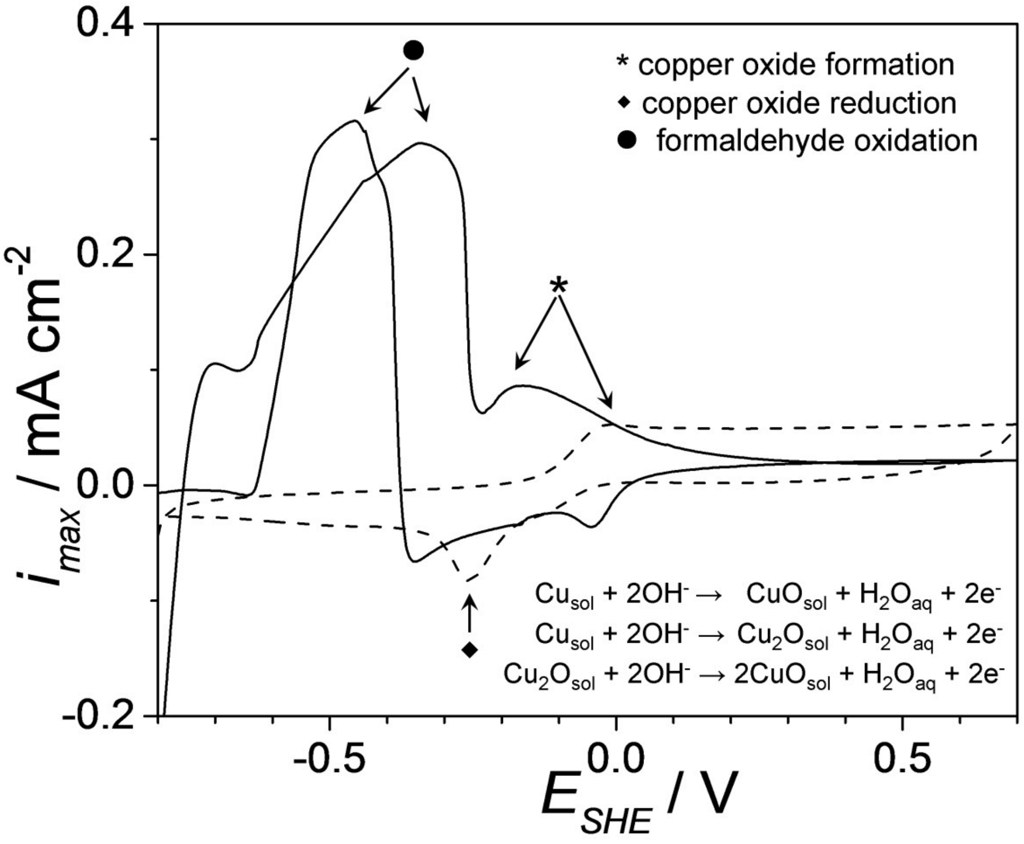


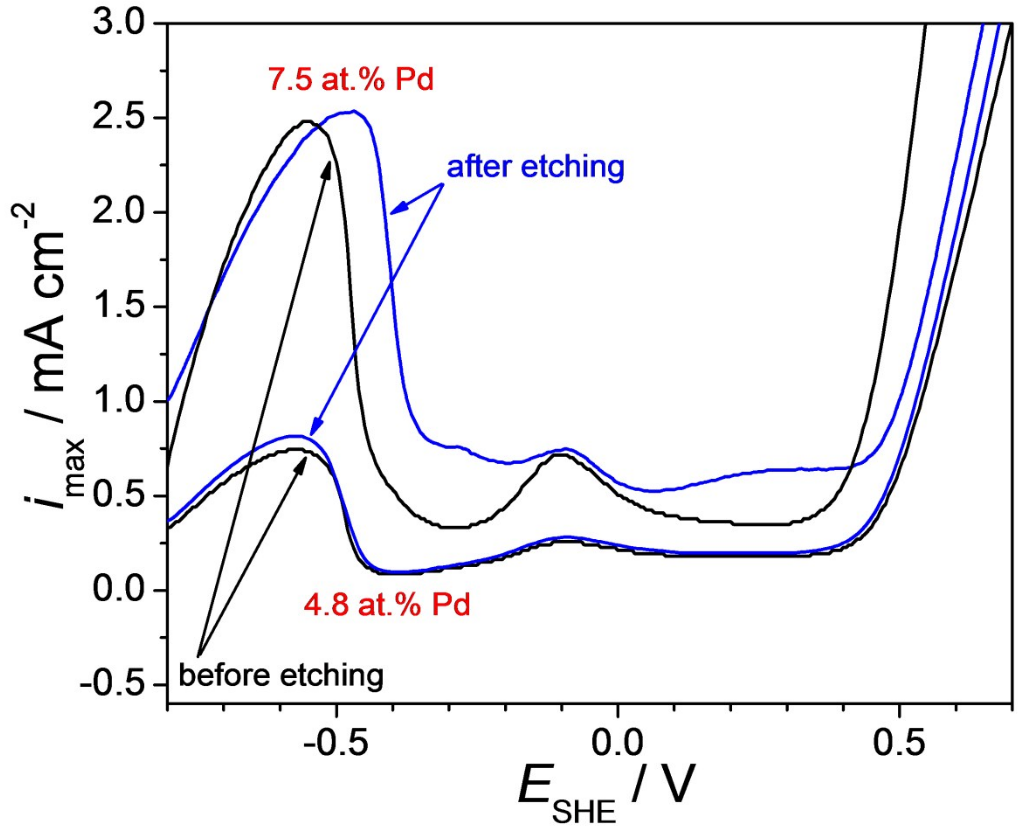
Sup. 1: X-ray diffractograms measured on Cu-Pd thin film alloys at various compositions.



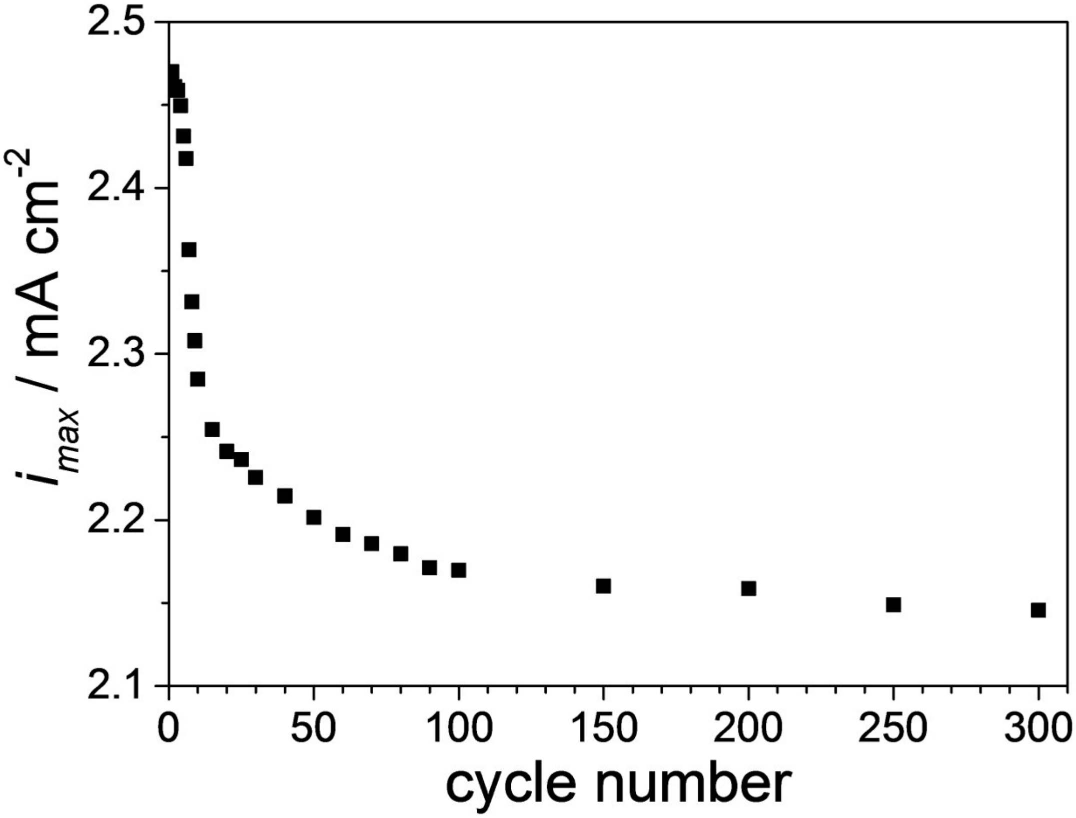
Sup. 2: Hi-resolution X-ray diffractograms of (111) peak measured on Cu-Pd thin film alloys.



Sup. 3: Cyclic voltammogram performed on pure Cu in alkaline solution with (continuous line) and without (dotted line) the addition of 90 mM formaldehyde and the corresponding reactions.



Sup. 4: Formaldehyde oxidation on Cu-Pd bulk alloys in alkaline solution before and after HCl etching.



Sup. 5: The formaldehyde oxidation current density values during cycling the bulk Cu-7.5 at.% Pd alloy up to the oxidation potential.