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Electronic Supplementary Information for: A new look at oxide formation at the copper/electrolyte interface by in situ spectroscopies

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Current transients recorded during in situ Raman spectra are shown in ESI-Fig. 1. These curves follow the same trend as shown in ESI-Fig. 2 in the main article as measured during ellipsometric data acquisition.

ESI-Fig. 2-7 shows the time evolution of the Raman spectra recorded in one experimental series. ESI-Fig. 8-13 shows the time of Raman spectra recorded during a second series of experiments, and ESI-Fig. 14-19 show the time evolution during a third series of experiments.



ESI-Fig. 1: Current transients during in situ Raman experiments. The respective electrode potentials are indicated in the graph.



ESI-Fig. 2: Series 1 - Raman spectra recorded during oxidation at -0.1 V



ESI-Fig. 3: Series 1 - Raman spectra recorded during oxidation at $+0.1~\mathrm{V}$



ESI-Fig. 4: Series 1 - Raman spectra recorded during oxidation at $+0.2~\mathrm{V}$



ESI-Fig. 5: Series 1 - Raman spectra recorded during oxidation at $+0.3~\mathrm{V}$



ESI-Fig. 6: Series 1 - Raman spectra recorded during oxidation at $+0.4~\mathrm{V}$



ESI-Fig. 7: Series 1 - Raman spectra recorded during oxidation at $+0.5~\mathrm{V}$



ESI-Fig. 8: Series 2 - Raman spectra recorded during oxidation at $-0.1~\mathrm{V}$



ESI-Fig. 9: Series 2 - Raman spectra recorded during oxidation at $+0.1~\mathrm{V}$



ESI-Fig. 10: Series 2 - Raman spectra recorded during oxidation at $+0.2~\mathrm{V}$



ESI-Fig. 11: Series 2 - Raman spectra recorded during oxidation at $+0.3~\mathrm{V}$



ESI-Fig. 12: Series 2 - Raman spectra recorded during oxidation at +0.4 V



ESI-Fig. 13: Series 2 - Raman spectra recorded during oxidation at $+0.5~\mathrm{V}$



ESI-Fig. 14: Series 3 - Raman spectra recorded during oxidation at $-0.1~\mathrm{V}$



ESI-Fig. 15: Series 3 - Raman spectra recorded during oxidation at $+0.1~\mathrm{V}$



ESI-Fig. 16: Series 3 - Raman spectra recorded during oxidation at +0.2 V



ESI-Fig. 17: Series 3 - Raman spectra recorded during oxidation at $+0.3~\mathrm{V}$



ESI-Fig. 18: Series 3 - Raman spectra recorded during oxidation at +0.4 V



ESI-Fig. 19: Series 3 - Raman spectra recorded during oxidation at $+0.5~\mathrm{V}$