

## **Supporting Information**

for

### **Efficient electron-induced removal of oxalate ions and formation of copper nanoparticles from copper(II) oxalate precursor layers**

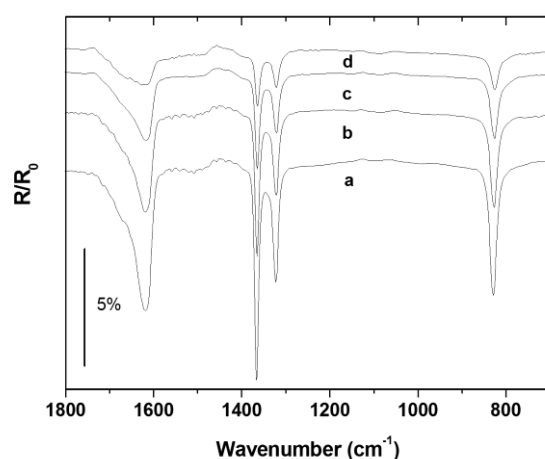
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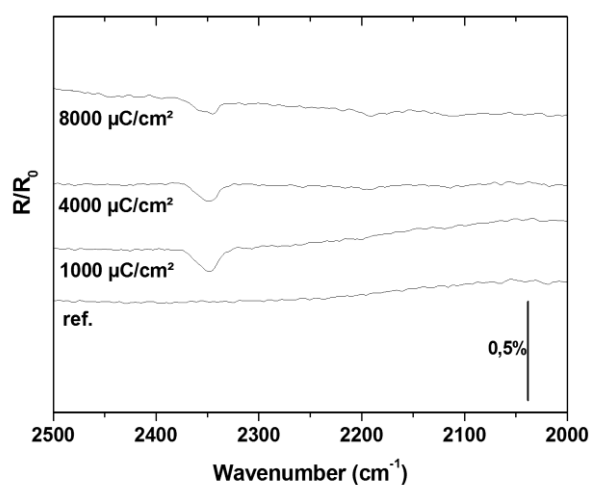
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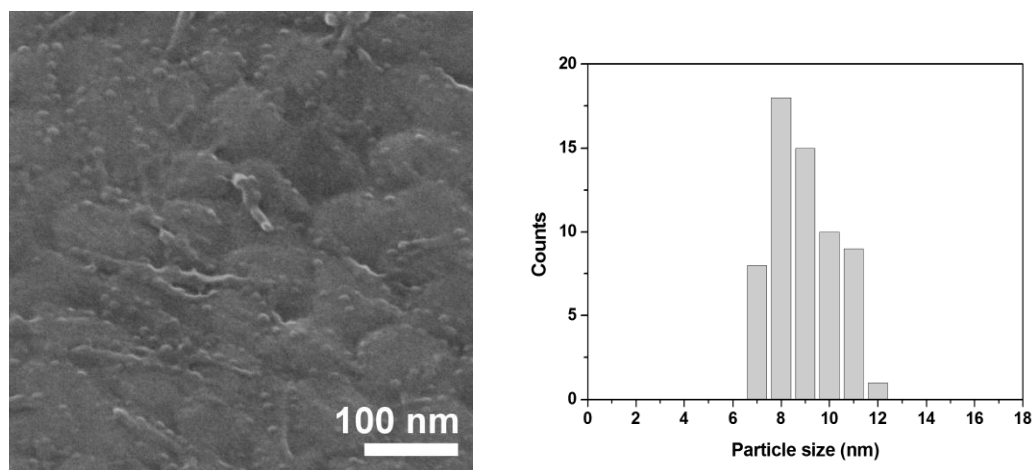
### **Additional experimental data**



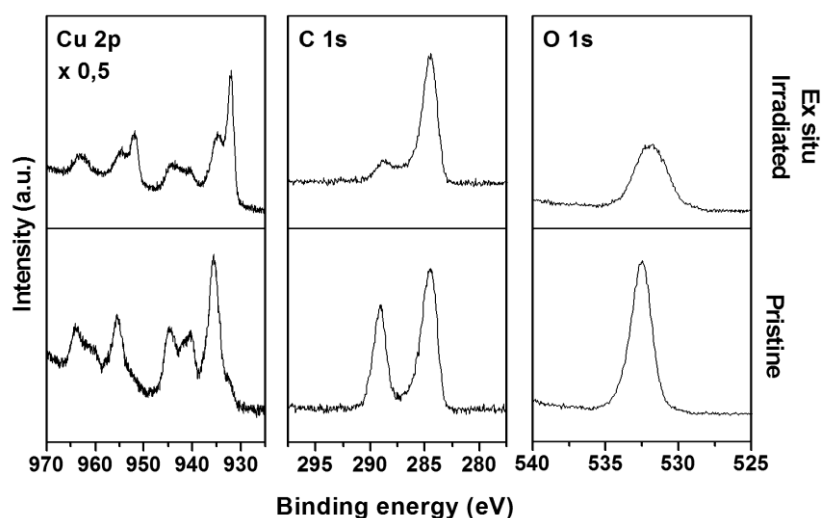
**Figure S1:** Additional RAIR spectra showing the electron-induced decomposition at 50 eV of surface grown copper(II) oxalate prepared by performing 12 deposition cycles. a) 0  $\mu\text{C}/\text{cm}^2$ , b) 4000  $\mu\text{C}/\text{cm}^2$ , c) 8000  $\mu\text{C}/\text{cm}^2$  d) 30000  $\mu\text{C}/\text{cm}^2$ . The samples were grown on MUA-coated gold substrates as also used for recording background spectra.



**Figure S2:** RAIR spectra of the CO and CO<sub>2</sub> stretching vibrational region recorded before and after the indicated electron exposures at 50 eV of surface-grown copper(II) oxalate prepared by performing 12 deposition cycles. The samples were grown on MUA-coated gold substrates as also used for recording background spectra.



**Figure S3:** HIM Image and associated size distribution of a sample after growing on the SAM copper(II) oxalate by 16 deposition cycles and additional electron exposure of  $16000 \mu\text{C}/\text{cm}^2$  at 500 eV. The copper(II) oxalate was prepared on a MUA-coated Au substrate by performing 16 deposition cycles. The size distribution has been obtained by measuring the diameter of 62 particles from two different positions.



**Figure S4:** XPS spectra in the ranges of Cu 2p, O 1s, and C 1s recorded before (pristine) and after ex situ irradiation with an electron exposure of  $16000 \mu\text{C}/\text{cm}^2$  at 50 eV of surface-grown copper(II) oxalate prepared by performing four deposition cycles. The sample was grown on a MUA-coated gold substrate. The Cu 2p signal points to the reappearance of oxidized species following exposure to air.