**Supporting information**

**Luminescence properties of epitaxial Cu2O thin films electrodeposited on metallic substrates and Cu2O single crystals**

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Figure S1. Peak position of the main emission bands of Cu2O single crystals SC(100) and SC(111) under laser excitation power 0.2 and 15 mW in 10-300 K temperature range. Samples and excitation power are shown in the legend.

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| Figure S2. Spectral properties of Cu2O thin film on Ag polycrystalline substrate (sample 39) under 532 nm laser excitation: (a) Thermal evolution of PL spectra; (b) polarized PL spectra at different angular positions of the analyzer at 10 K (angular degrees are shown on the graph). | |

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| Figure S3. Thermal evolution of PL subbands for thin film sample 39: (a) PL intensity; (b) Arrhenius plot: 1 - 680 nm , 2 – 735 nm, 3 – 820 nm, 4 - 920 nm. | |



Figure S4. Thermal evolution of PL spectrum of Cu2O thin film on Ag polycrystalline substrate (sample 40) under 532 nm laser excitation.

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| Figure S5. Thermal evolution of PL subbands for thin film sample 40: (a) PL intensity; (b) Arrhenius plot: 1 – 660 nm; 2 - 680 nm , 3 – 735 nm, 4– 820 nm, 5 - 920 nm. | |