



Supporting Information

Large-Scale Synthesis of Semiconducting Cu(In,Ga)Se₂ Nanoparticles for Screen Printing Application

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Figures

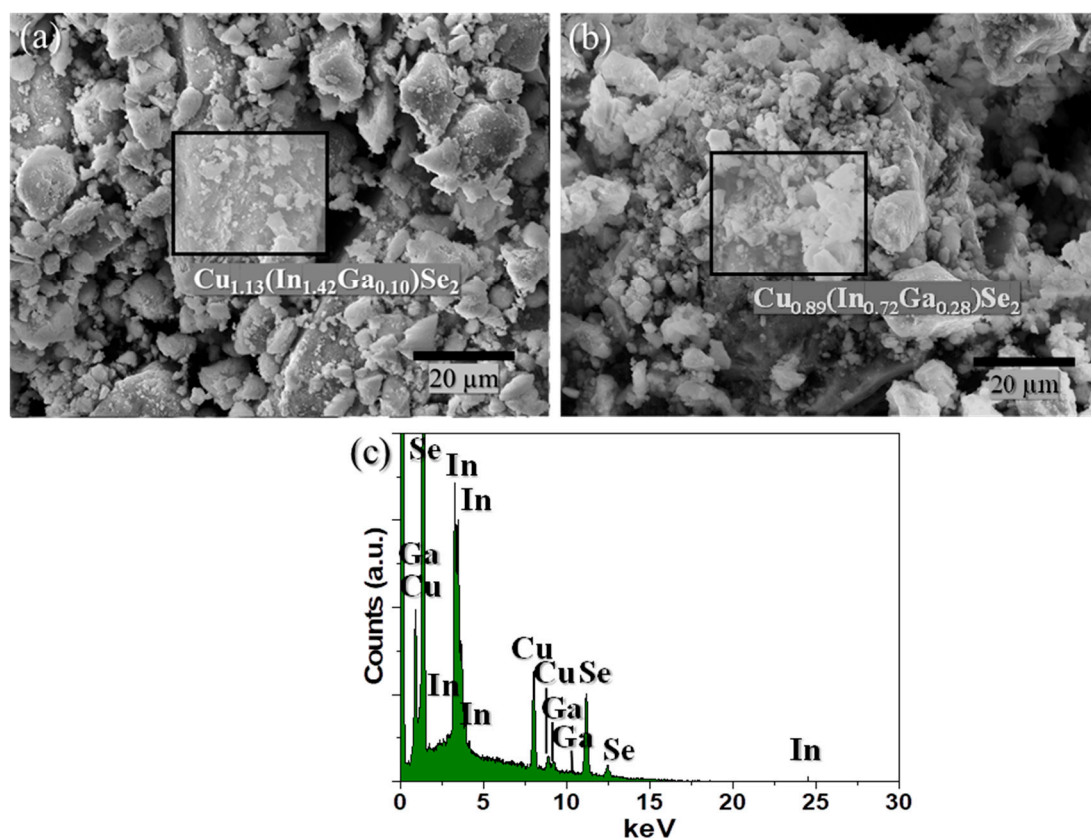


Figure S1. Scanning electron microscopy images of **Sample I** (a) and **Sample II** (b), and EDX spectrum of **Sample II** (c).

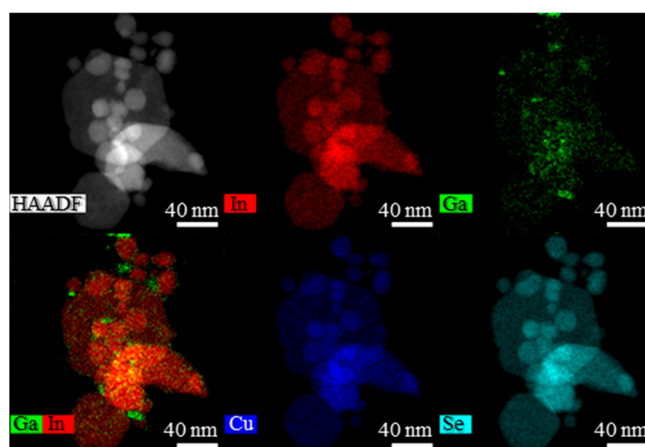


Figure S2. HAADF–STEM image and corresponding STEM–EDX elemental maps of **Sample I**.

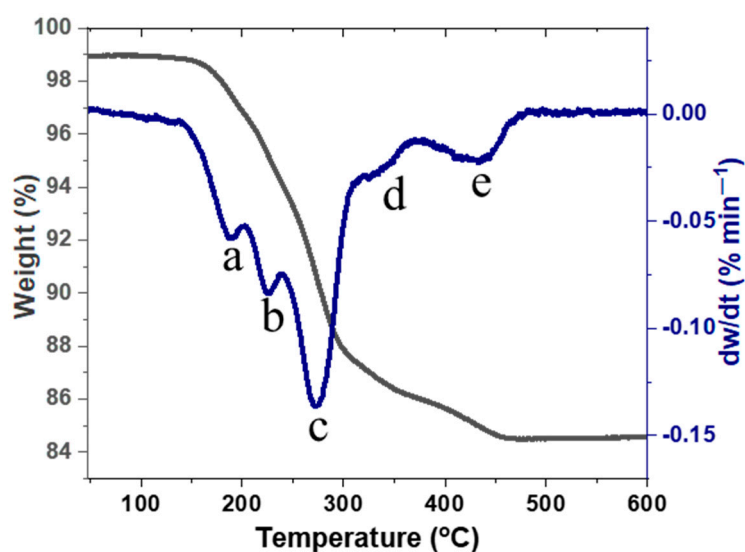


Figure S3. Thermogravimetric analysis with the corresponding derivative curve for the NPs from **Sample II** under Ar. Peak temperatures a: 187 °C, b: 226 °C, c: 273 °C, d: 337 °C, and e: 433 °C.

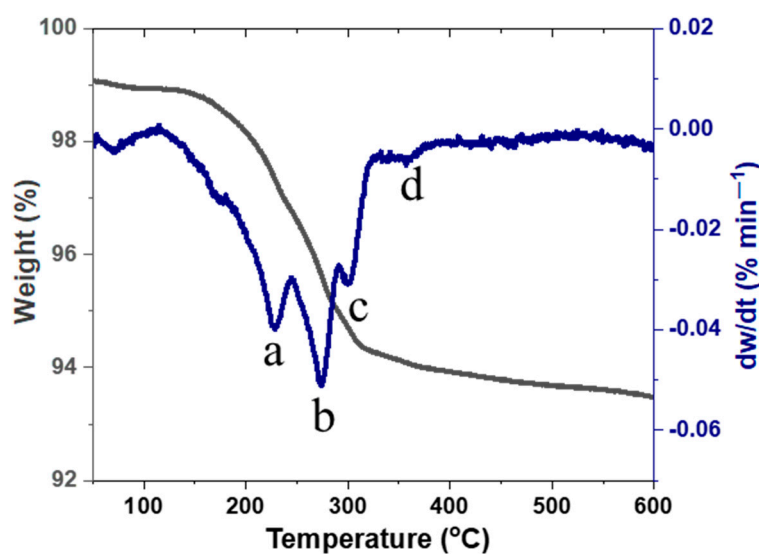


Figure S4. Thermogravimetric analysis with the corresponding derivative for the NPs from **Sample II** after ligand exchange under Ar. Peak temperatures a: 227 °C, b: 274 °C, c: 299 °C, and d: 357 °C.

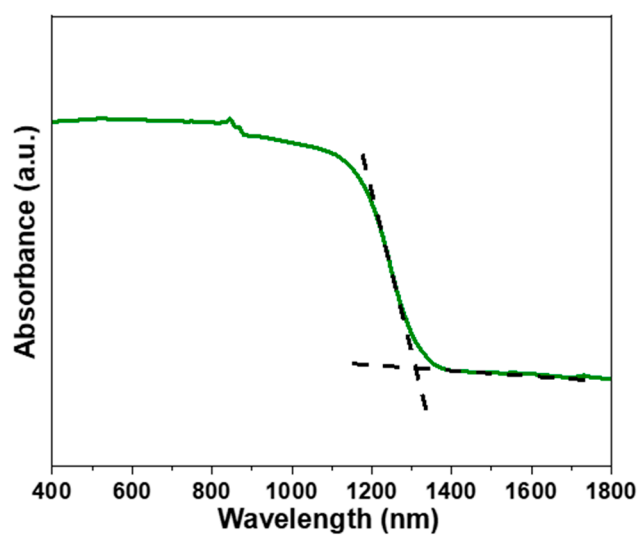


Figure S5. UV–Vis–NIR absorption spectrum of the synthesized NPs.

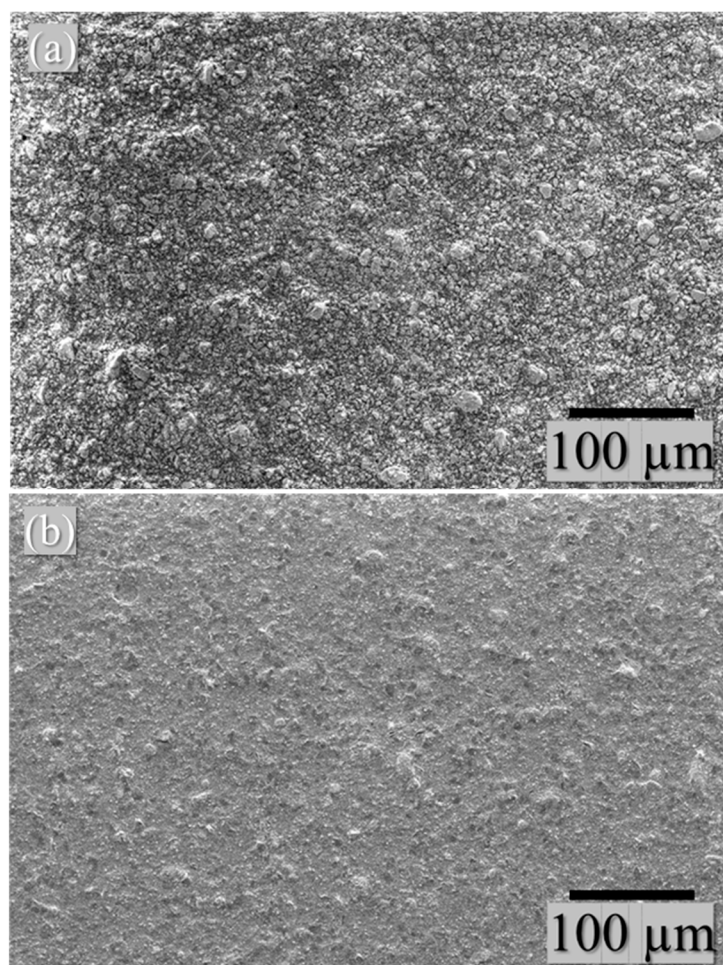


Figure S6. SEM surface images from screen-printed films of **Sample II** before (a) and after (b) wet ball milling.

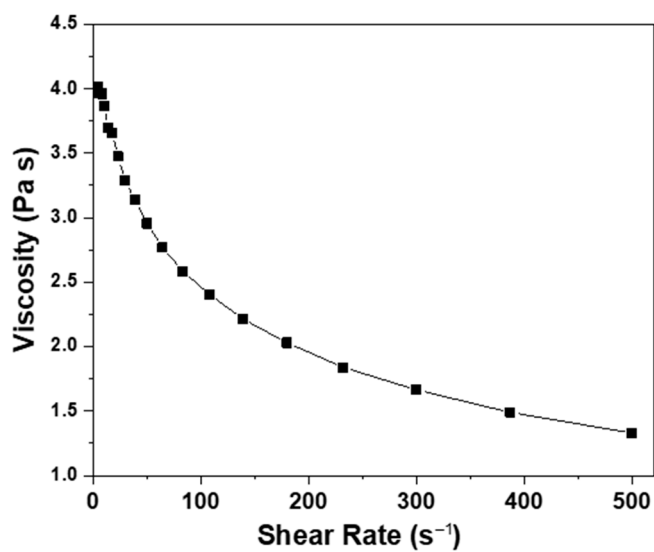


Figure S7. Dynamic viscosity of the formulated NP ink showing a non-Newtonian behavior.

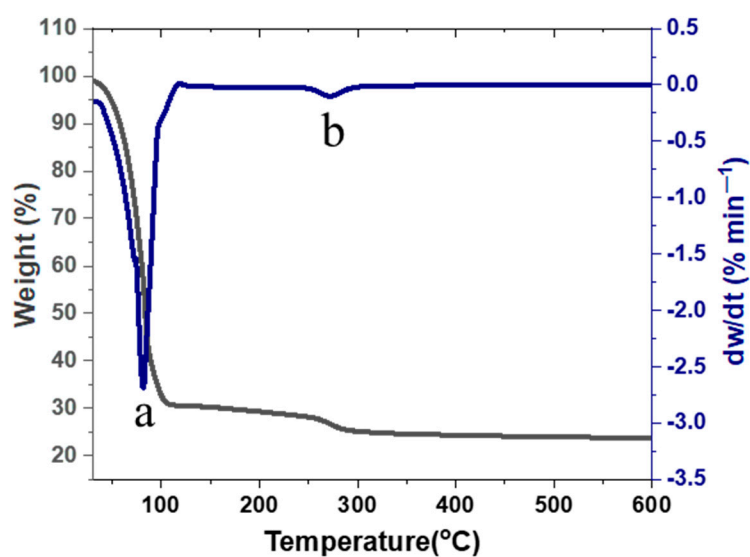


Figure S8. Thermogravimetric analysis with the corresponding derivative curve for the screen printable ink under Ar. Peak temperatures a: 81 °C and b: 271 °C.

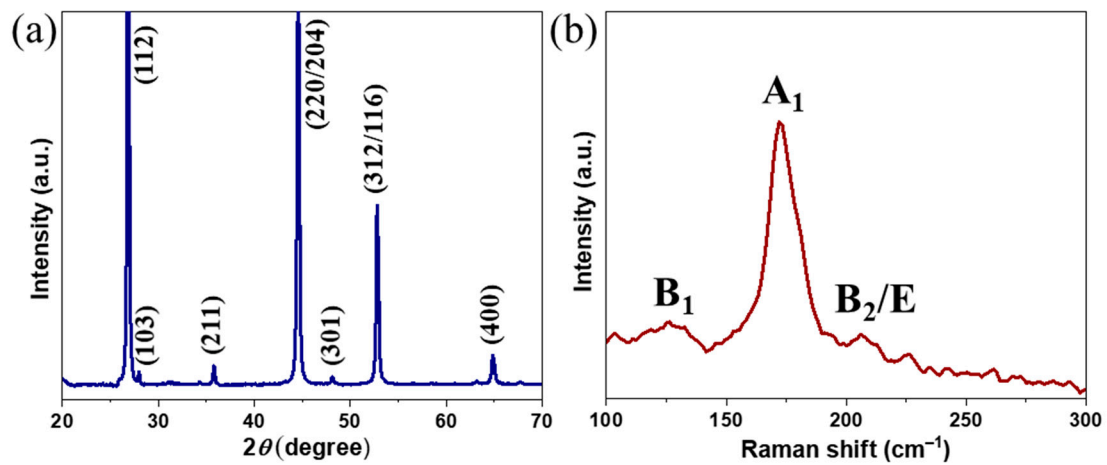


Figure S9. The experimental powder XRD pattern (a) and Raman spectrum (b) of the screen-printed film after annealing at 500 °C. In XRD figure, the hkl peak assignment is based on ICDD card no. 00-066-0140 for chalcopyrite.