

Supplementary Information

Pulsed laser deposition of ZnO/Mg_xZn_{1-x}O superlattices for quantum cascade laser applications

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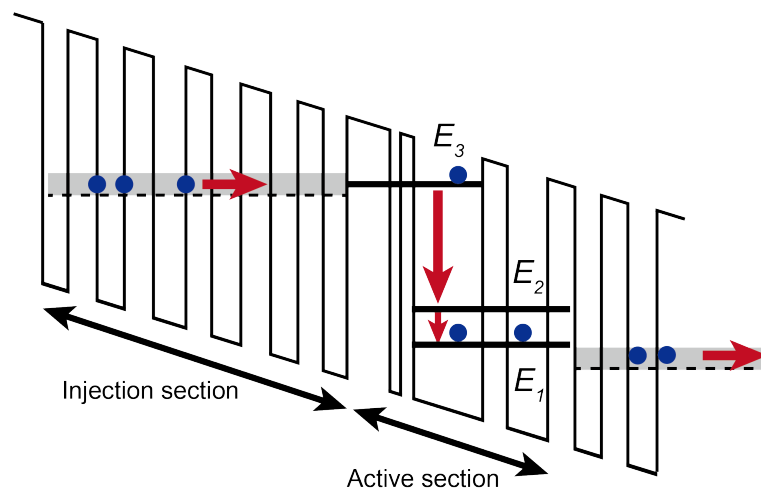


Figure S1. A schematic diagram of the energy bands in the conduction band of a typical three-level QCL.

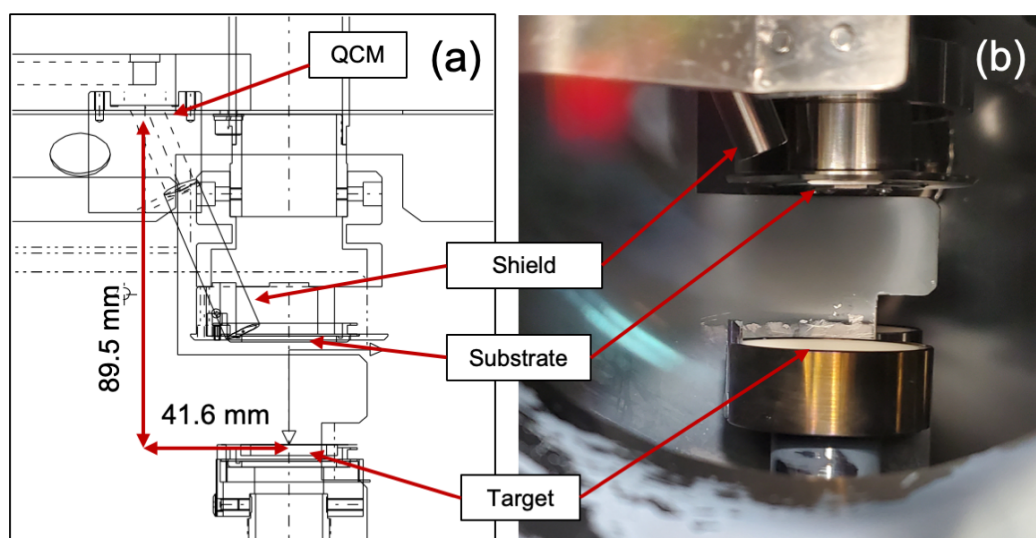


Figure S2. (a) Schematic illustration of the spatial arrangement of the QCM sensor, shield, target and substrate. (b) Photograph inside the PLD chamber.

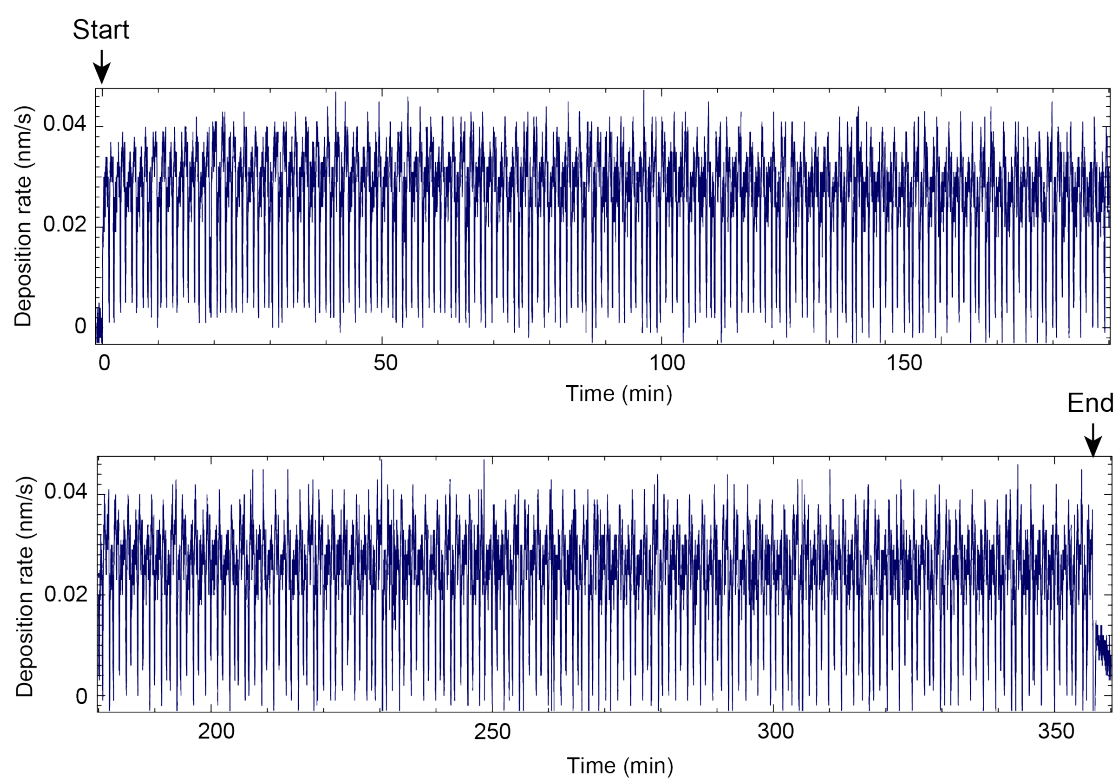


Figure S3. Deposition rate as a function of time for the deposition of the ZnO QCL film.

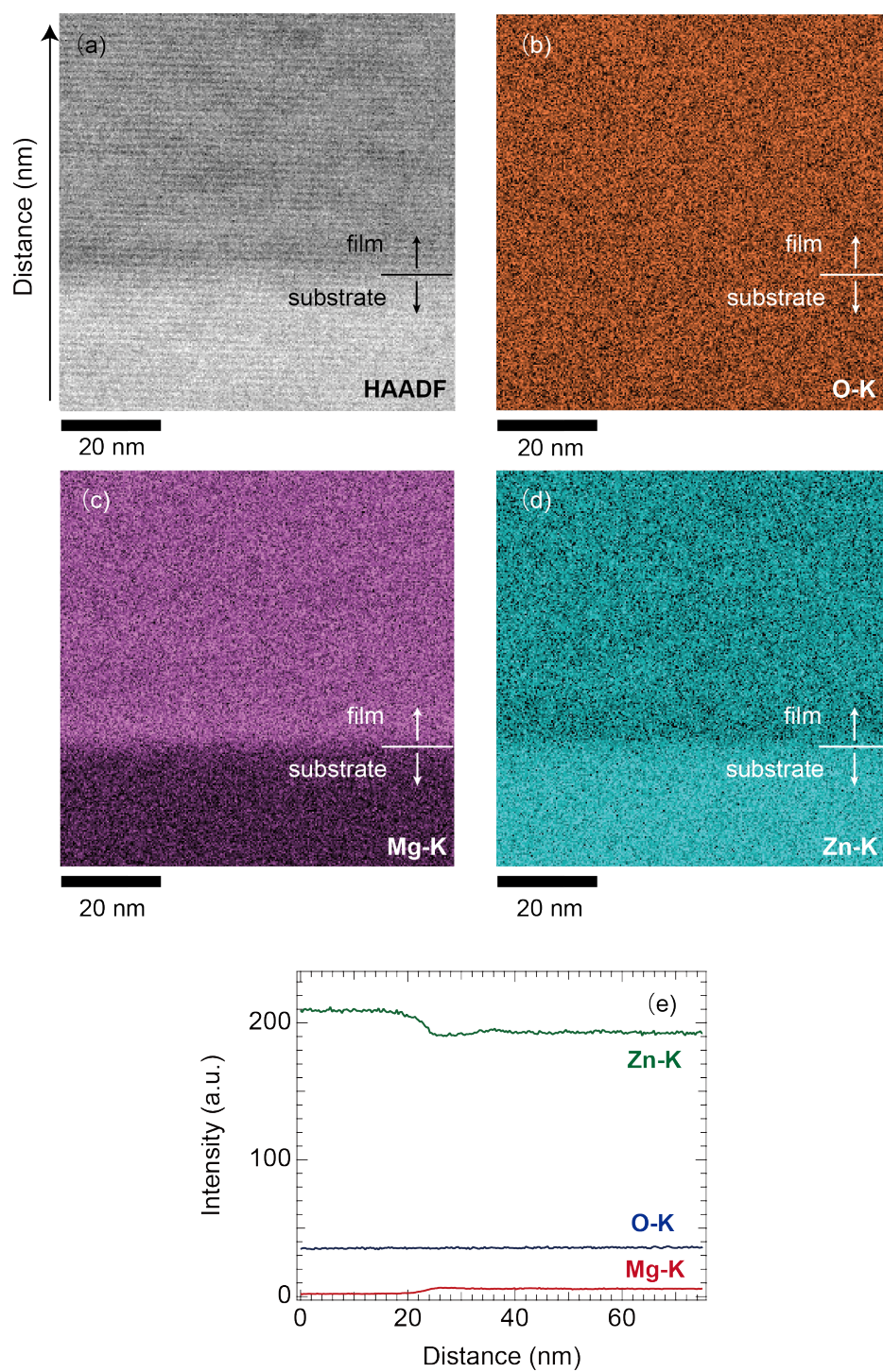


Figure S4. (a) STEM and (b-d) EDS images of the ZnO QCL film deposited at 700 °C. (e) Cross-sectional chemical composition profiles obtained from the EDS results in (b–d).

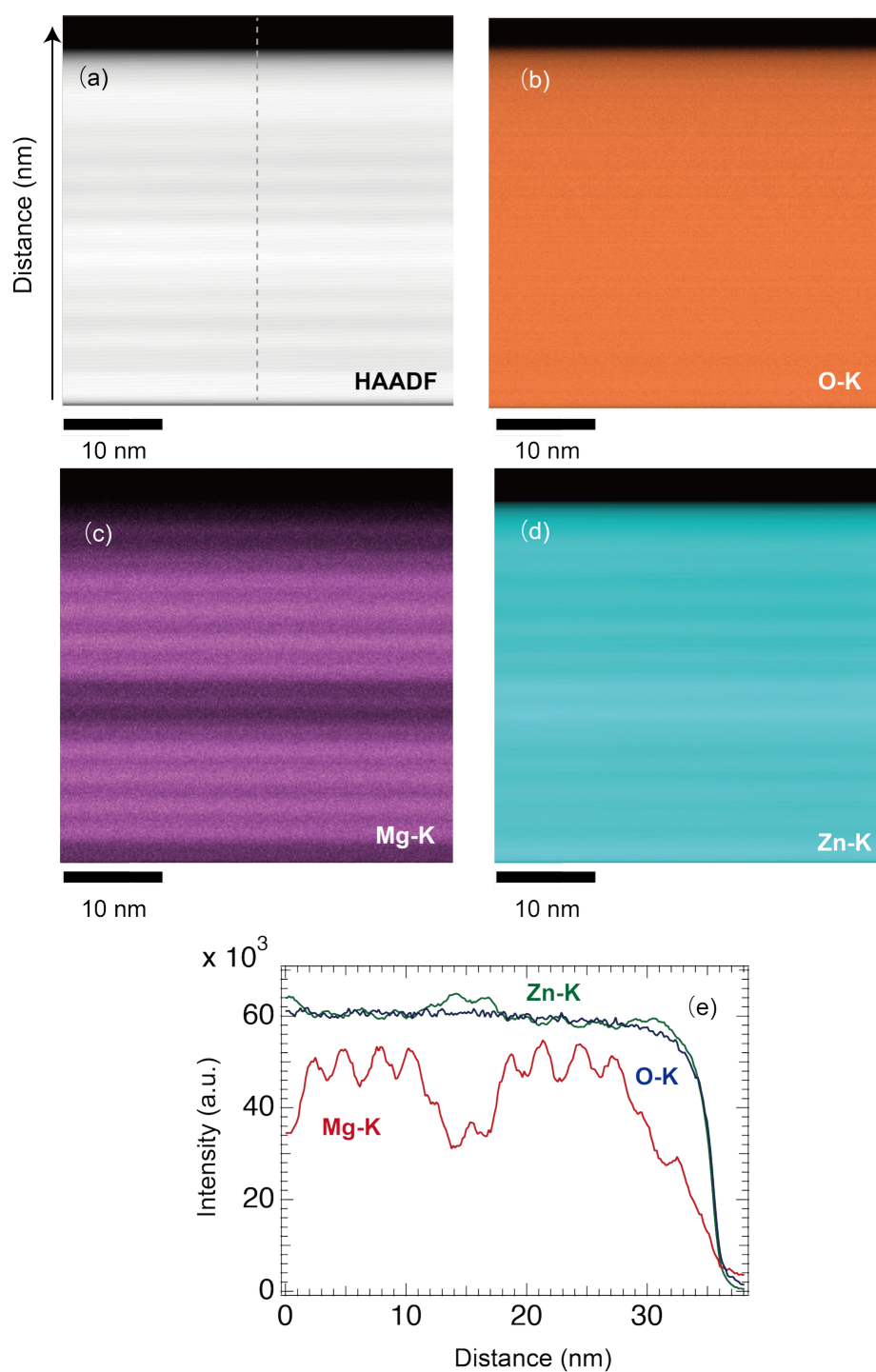


Figure S5. (a) STEM and (b-d) EDS images of the ZnO QCL film deposited at 600 °C. (e) Cross-sectional chemical composition profiles obtained from the EDS results in (b–d).

