Supplementary material (ESI) for Journal of Materials Chemistry


# Zinc oxide derived from single source precursor chemistry under chimie douce conditions: Formation pathway, defect chemistry and possible applications in thin film printing

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## Supplementary information

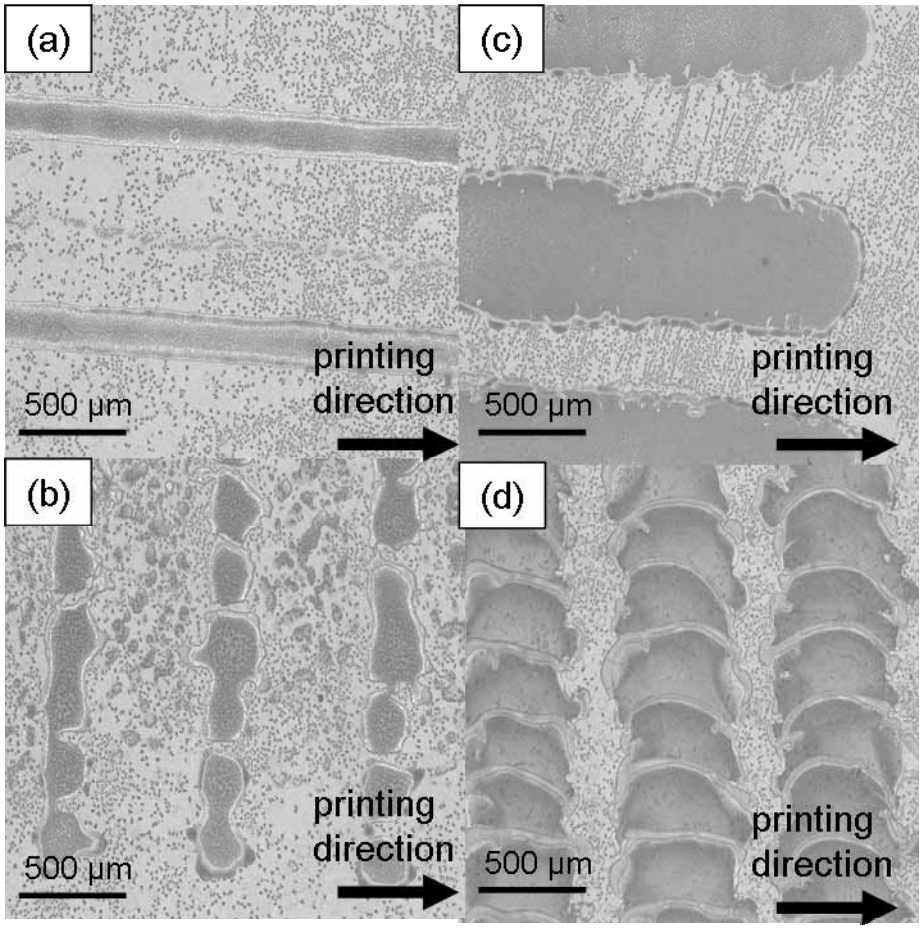


**Figure1:** Optical micrographs of printed lines on PET transparencies. Printed lines on substrate at room-temperature (a) parallel and (b) perpendicular to printing direction, printed at room temperature. Printed lines on substrate at 50°C (c) parallel and (d) perpendicular to printing direction.

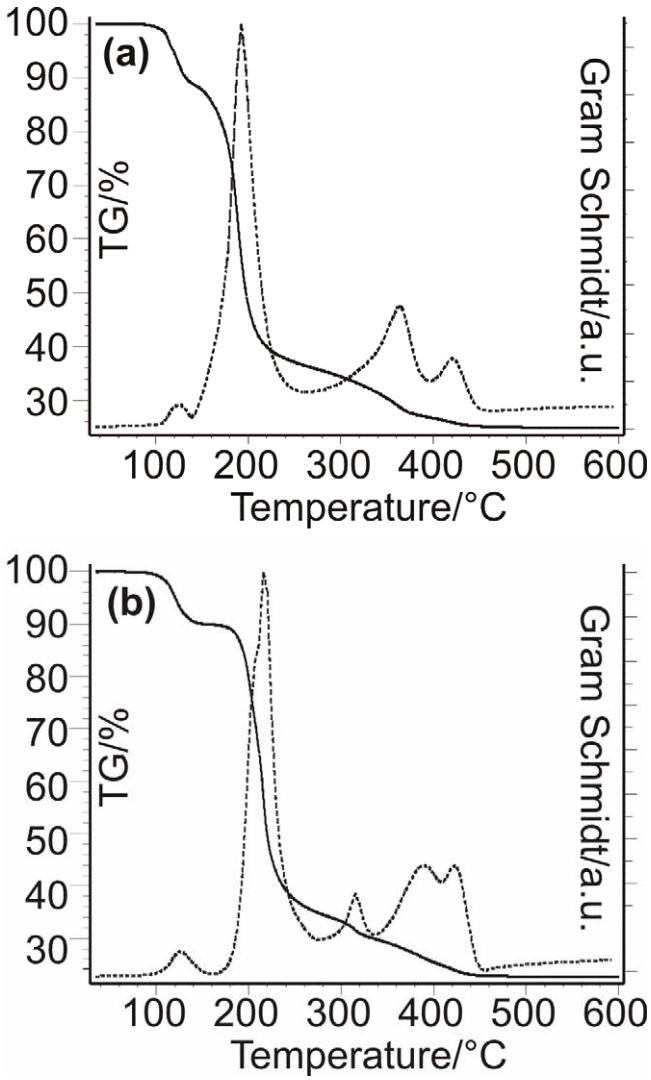


**Figure2:** TG with integrated FT-IR intensity (Gram-Schmidt signal) in oxygen of (a) bis(methoxyiminopropanoato)zinc and (b) bis(ethoxyiminopropanoato)zinc.

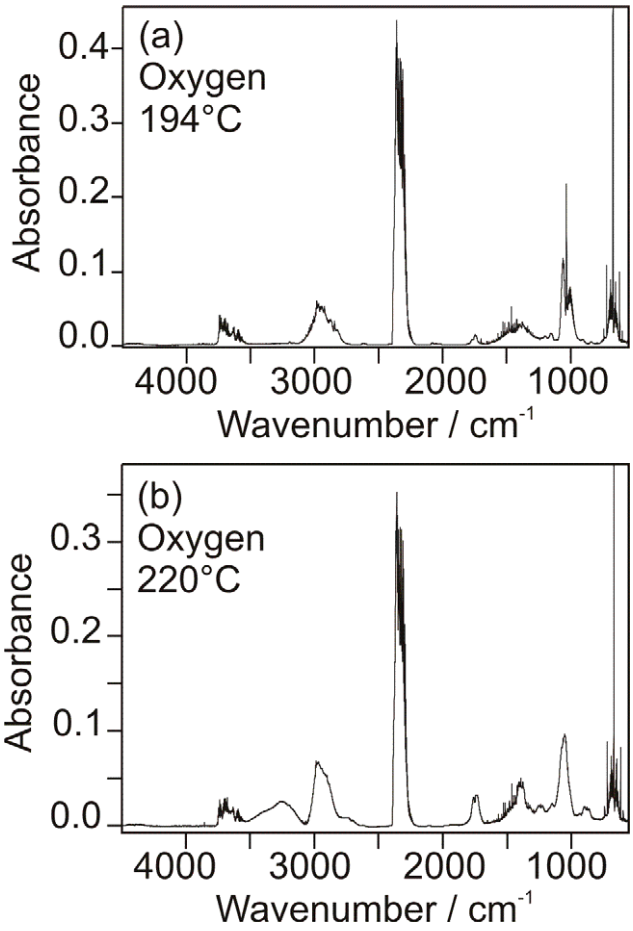


**Figure3:** FT-IR spectra of gaseous products by decomposition of precursor in oxygen. (a) bis(methoxyiminopropanoato)zinc and (b) bis(ethoxyiminopropanoato)zinc.

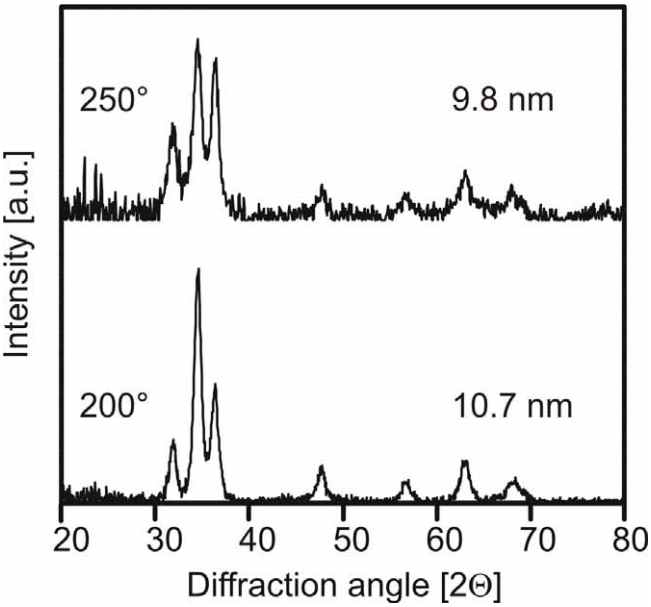


**Figure4:** XRD diagrams and corresponding crystallite sizes of films from decomposition of bis(ethoxyiminopropanoato)zinc (12 layers by spincoating on 2x2 $cm^2$ substrates) processed at different reaction temperatures.

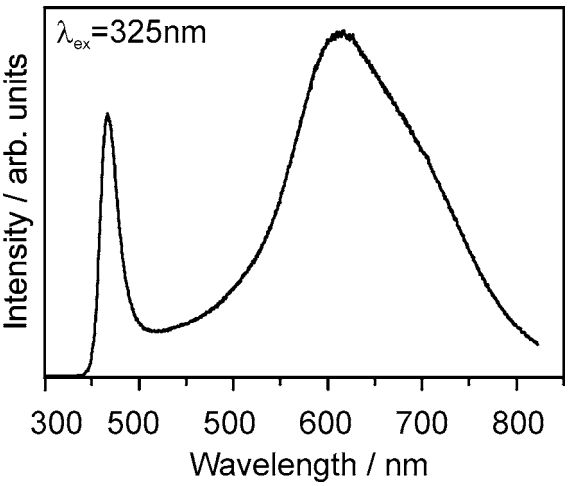


**Figure5:** Low temperature (10 K) photoluminescence spectrum of ZnO films from decomposition of bis(methoxyiminopropanoato)zinc (25 layers by spincoating on 1.5x1.5 $cm^2$ silicon substrates) processed at 150°C.