

Supplementary material

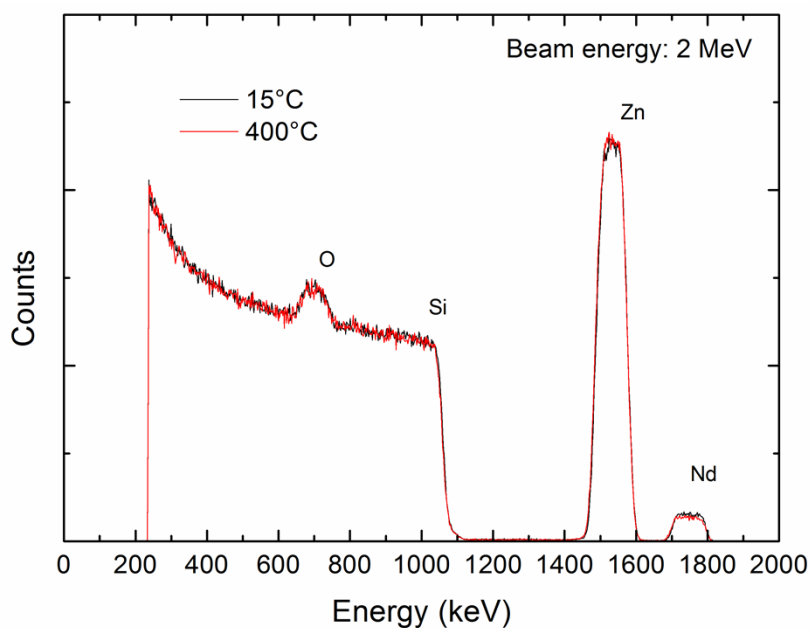


Fig. S1 – Selected RBS spectra of ZnO:Nd (1.6 %) films deposited at different temperatures. The flat Nd profile indicate a uniform distribution along the growth direction.

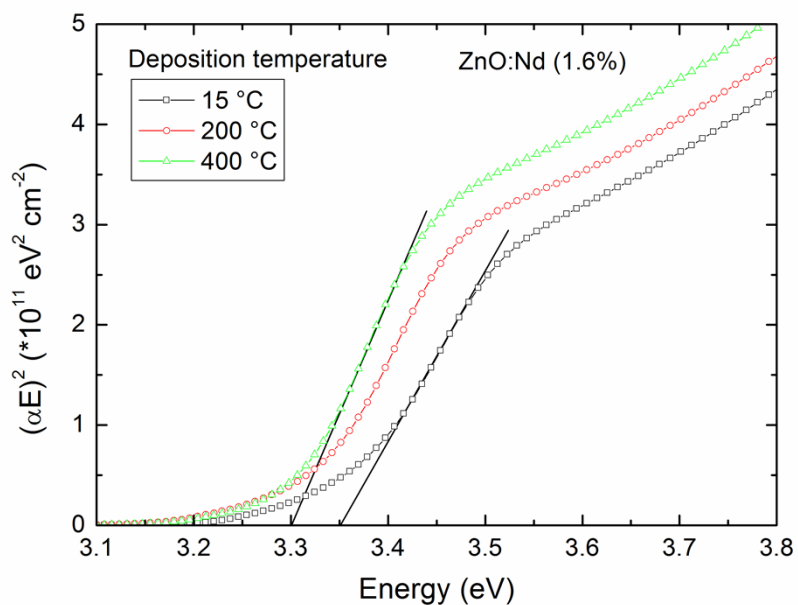


Fig. S2 – Tauc plot of the ZnO absorption coefficient of films grown at different temperatures. The values of α have been calculated from the extinction coefficient obtained by ellipsometric measurements.

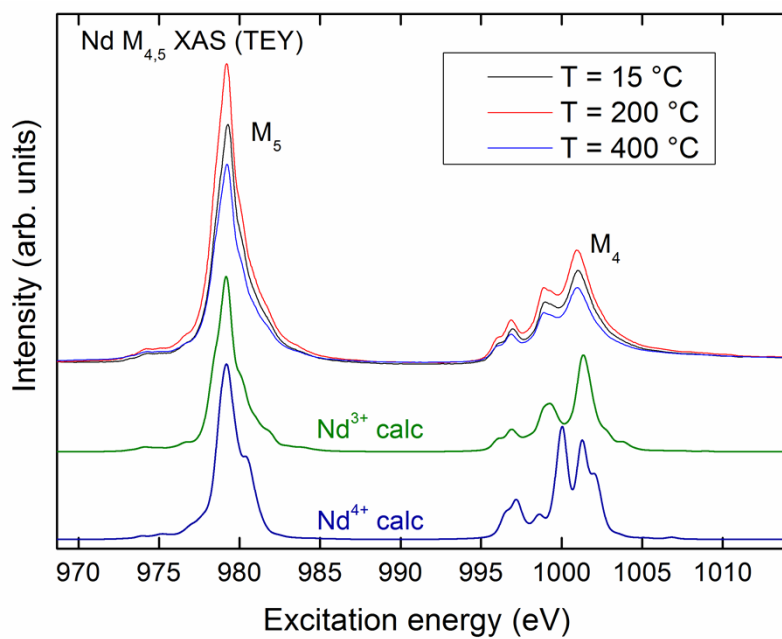


Fig. S3 - Nd $M_{4,5}$ XAS (TEY) measurement of samples deposited at different temperatures. *Ab initio* edge calculations for Nd^{3+} and Nd^{4+} are reported for comparison. TEY signal only sounds the first few nanometers of material.