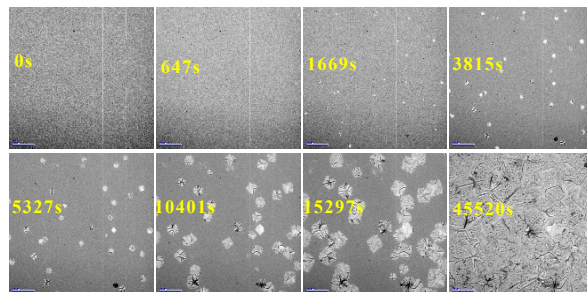


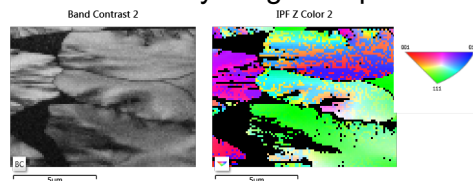
In-situ TEM Study of Kinetic Behaviors of ZITO30 Thin Films During Amorphous-to-Crystalline Transition

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The difference in short-range and medium-range order of a-ZITO30 thin films grown by Pulsed Laser Deposition (PLD) at different temperatures underscores the need to unravel the nucleation and growth processes of a-ZITO thin films and the role of dopants in this process. In order to monitor this process down to micro scale, *in-situ* heating TEM experiments have been carried out for observation of nucleation and growth process in amorphous thin films. Combined with corresponding simulations, the kinetic behaviors of ZITO30 thin films, like crystal growth geometry and the energy of interface between amorphous phase and crystal phase are identified.



Nucleation and crystal growth process



Grain orientations distribution

