Electronic Supplementary Material (ESI) for Nanoscale.

From Nanograins to Atoms: a Multiscale in situ High Temperature High Resolution Transmission Electron Microscopy Study of Thorium Dioxide Sintering

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Supplementary file S6: As the images that were recorded are HRTEM images, FFT patterns were calculated on limited areas of the images in order to determine the crystallographic orientation of the crystallites in each grain, according to the image processing described in the Methods section. The FFT patterns obtained for each grain, on the image recorded at T=25°C is reported on Figure S6a. Using a planar transformation of the FFT patterns (red circle on Figure S6a), a new representation of the diffraction pattern is obtained (Figure S6b) where a line corresponds to a family of diffraction spots (red dot line). From this figure, a graph representing the intensities along the diffraction direction (Figure S6c) is built. It can be extended into a diagram showing the positions and the intensities of the 200 diffraction spots as a function of temperature (Figure S6d).