

Fig. 1. Overview bright-field (BF)-STEM micrographs showing the evolution of the InGaAs/InAlAS SL as the substrate temperature is sequentially reduced from 450  $^{\circ}$ C to 250  $^{\circ}$ C.



Fig. 2. There is already a change in the microstructure after reducing  $T_s$  from 450° to 400°C, the resulting periods are characterized by a high density of in-plane microtwins and stacking-faults, as shown in these lattice-fringes high-resolution (HR)TEM images.