**Supplementary materials**

**Local-stress-induced detwinning in nanotwinned Al without shear stress on twin boundaries**

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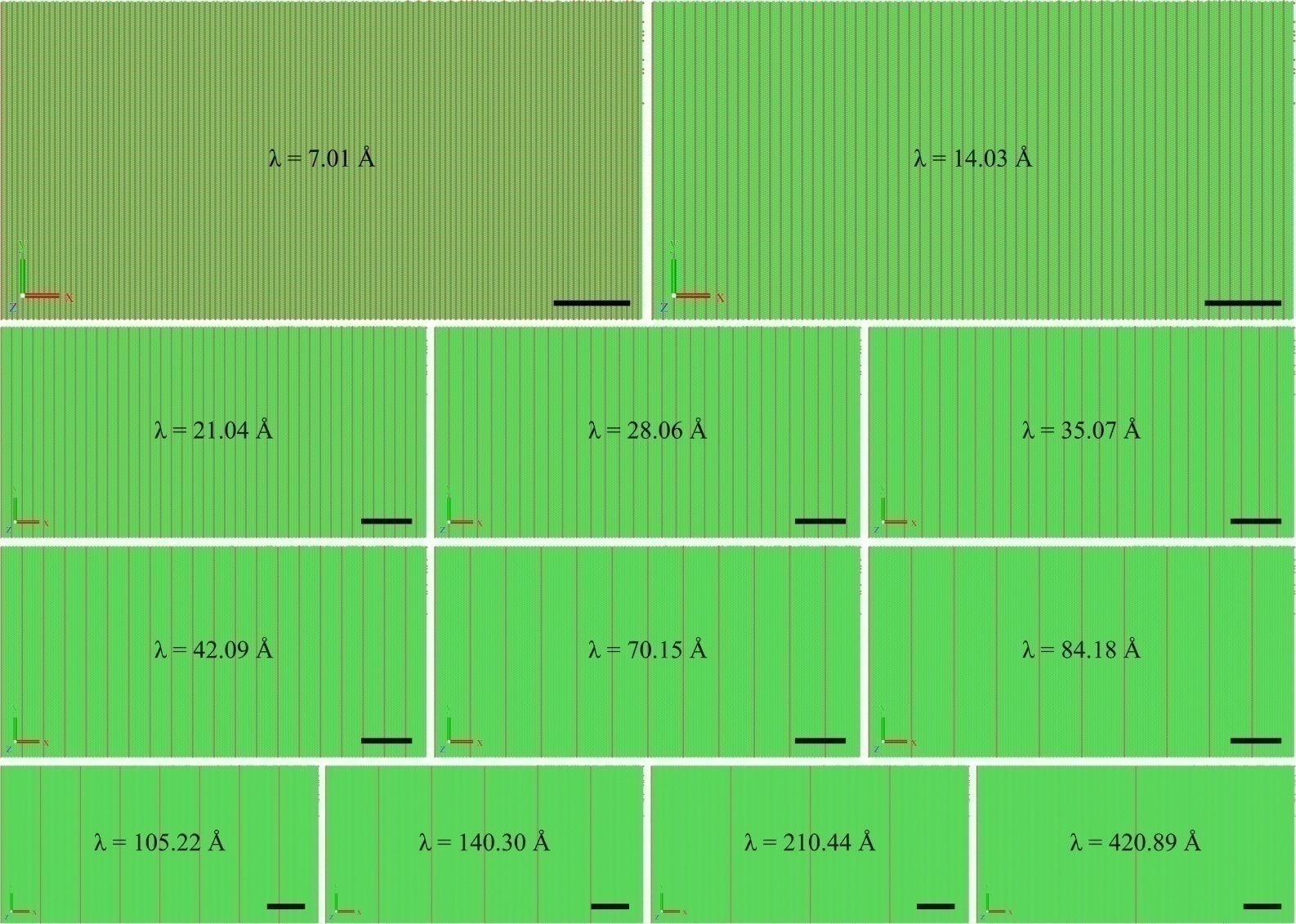
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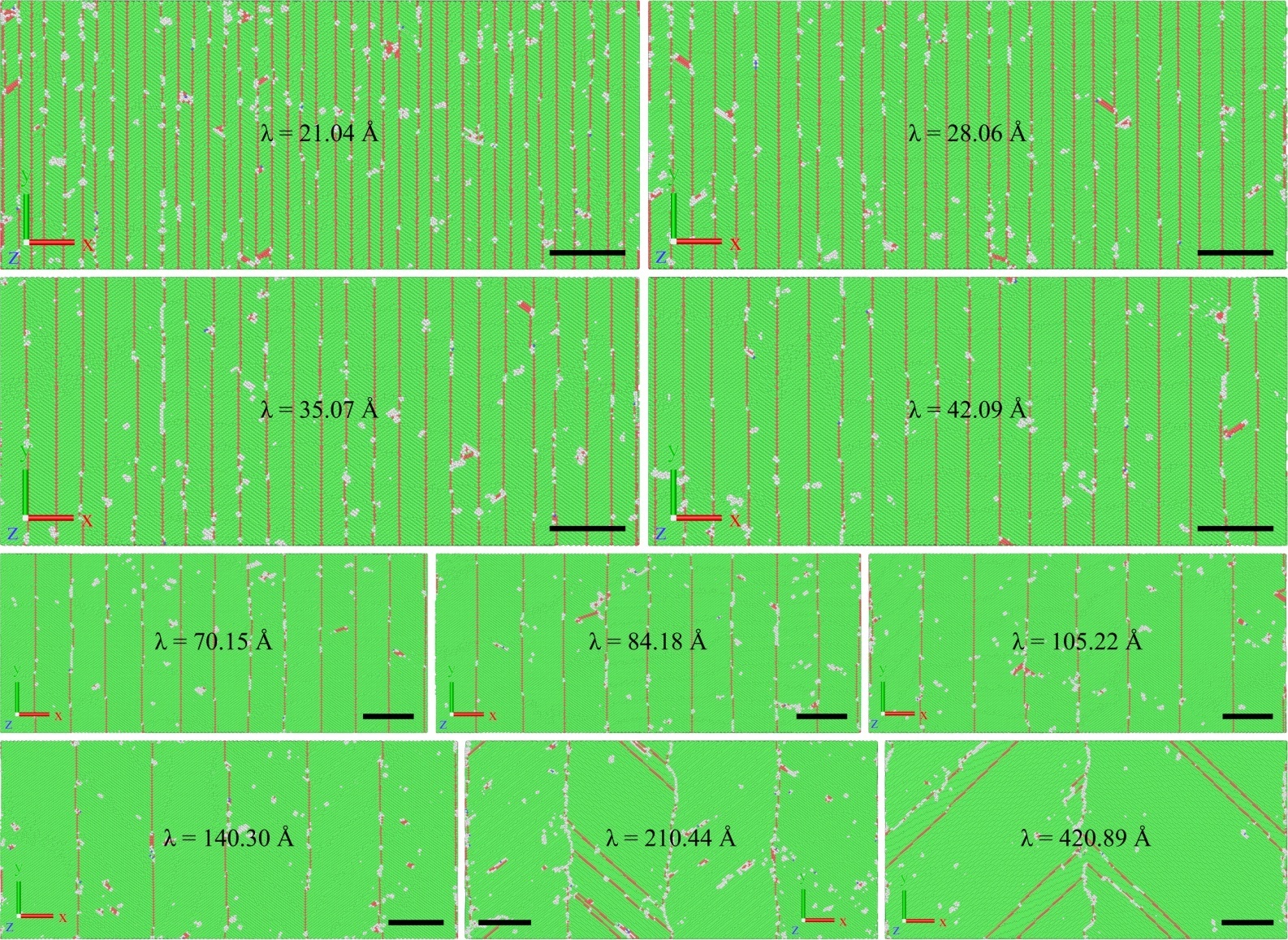
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Supplementary figures:



**Figure S1:** Top views of initial models identified by CNA. Atom coloring is consistent with Fig. 1. Scale bars are 10 nm.



**Figure S2:** Microstructure of the deformed models at a strain of 0.2, identified by CNA. Atom coloring is consistent with Fig. 1. Scale bars are 10 nm.