

# **Growth mechanism of titanium monoxide $\text{TiO}_x$ on a reduced calcium titanate $\text{CaTi}_2\text{O}_4$ surface**

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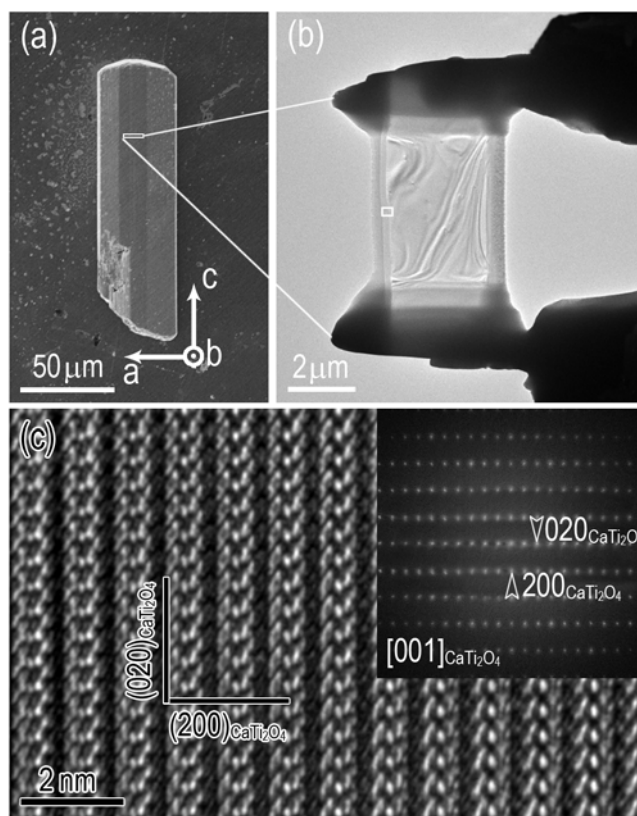
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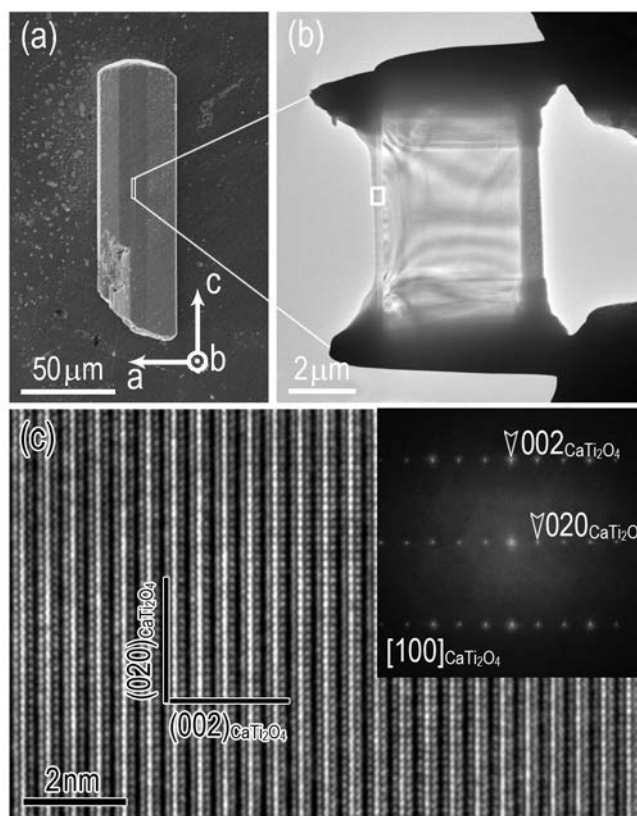
Supplementary Information

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**Figure S1.** (a) The SE SEM image of a typical crystalline needle of  $\text{CaTi}_2\text{O}_4$ . Cross-section sample which perpendicular to  $c$  direction was prepared by cutting a trench (indicated by the rectangular region) from sample surface. (b) Low-magnification TEM image of the FIB cutting sample. (c) HRTEM image viewed along the  $[001]_{\text{CaTi}_2\text{O}_4}$  direction taken from the square region of (b). Corresponding FFT pattern is shown in the inset.



**Figure S2.** (a) The SE SEM image of a typical crystalline needle of  $\text{CaTi}_2\text{O}_4$ . Cross-section sample which parallel to c direction was prepared by cutting a trench (indicated by the rectangular region) from sample surface. (b) Low-magnification TEM image of the FIB cutting sample. (c) HRTEM image viewed along the  $[001]_{\text{CaTi}_2\text{O}_4}$  direction taken from the square region of (b). Corresponding FFT pattern is shown in the inset.