

## Supporting Materials

### Multiple deformation mechanisms in the stone of sea urchin tooth

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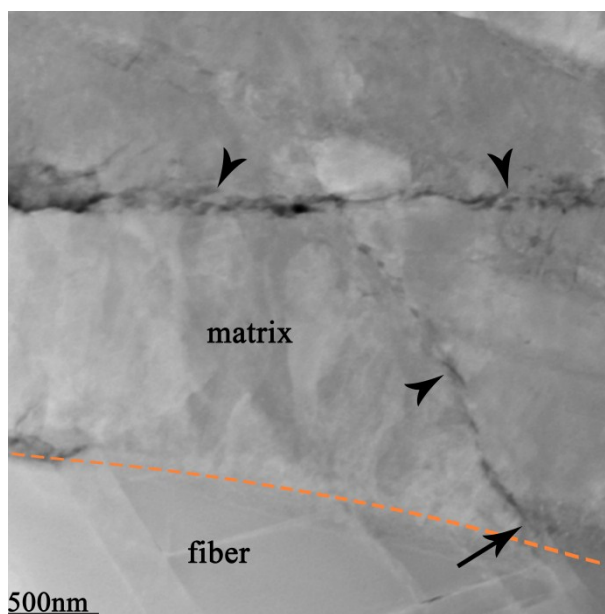
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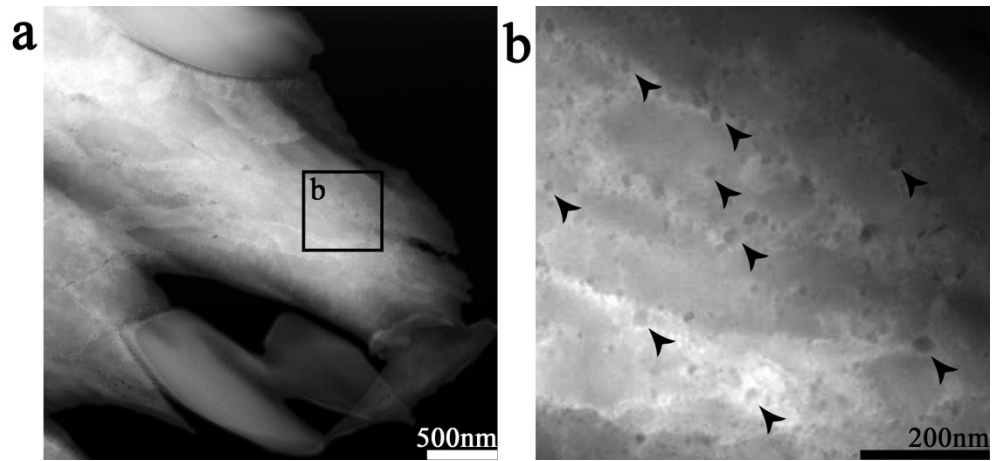
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**Fig. S1** HAADF image of deformed matrix in the stone of urchin tooth. Arrowheads indicate crack locations; the black arrow indicates the interruption of a crack at the organic sheath.



**Fig. S2** Nanostructure of the matrix in the stone of urchin tooth. (a) HAADF image showing the fine-grained characteristics of the matrix. (b) Magnified image of the area enclosed by a box in (a). Black arrowheads indicate the dim maculae, which are the loci of organic inclusions.