

Supporting Information

Facile *In-vitro* Hydroxyapatite Remineralization of Human Enamel with Remarkable Hardness

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1. SEM images of remineralization at different time period

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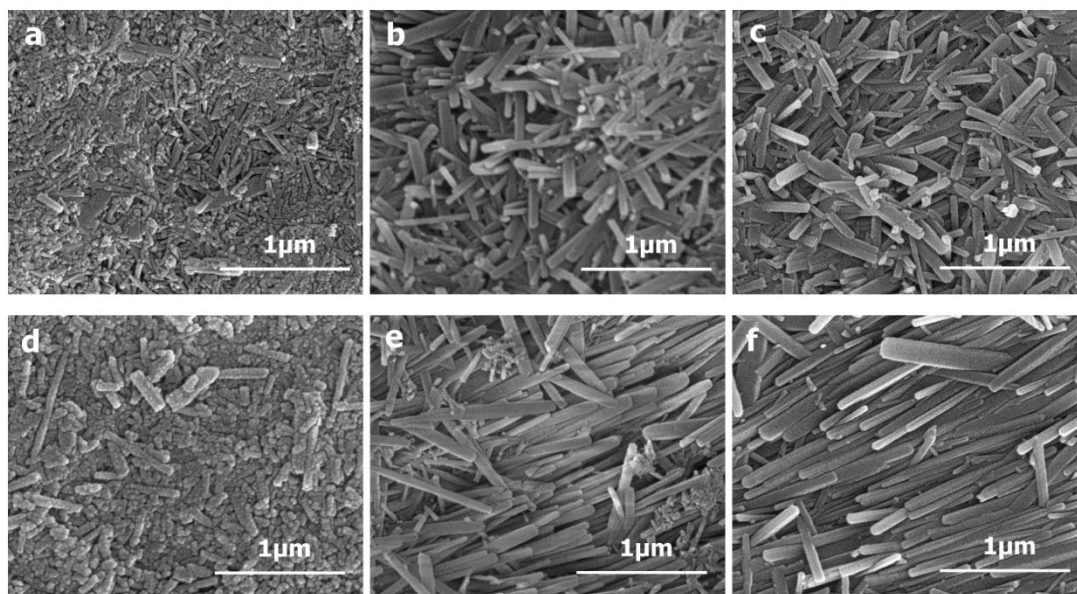


Fig.S1 SEM images of the surface of enamel samples enamel remineralized in the absence (upper) and presence of WSM (lower) for 24h (a, d), 48h (b, e) and 72h (c, f).

SEM images of remineralized surface in absence and presence of WSM for 24, 48 and 72h were shown in Fig. S1. As shown in Fig. S1a and S1d, the remineral HAP was

still tiny nanoparticles at 24 h, which might be the initial step of remineralization. At 48 h, they grew up to prism-like rods both in absence and presence of WSM (Fig. S1b and S1e). Without the regulation of WSM, the crystals were found to be randomly dispersed with loose and disordered structure (Fig. S1b). While, prism-like HAP were well-aligned in presence of WSM, as shown in Fig.S1e. And then, they were denser and better aligned at 72 h (Fig. S1f), consistent with the results of hardness. It indicated that the remineralization changed significantly within 48h, and the remineral surface showed just a little difference from 48h to 72 h. And after 72 h, we found that there is no significant difference. And it has already reached an ideal state at 72 h that the remineral surface was relative smooth and with higher hardness. As it is a fast remineralization method, it is sufficient to gain the ideal results at 72 h.