

## *Escherichia coli* Templated Iron Oxide Biomineralization under Oscillation

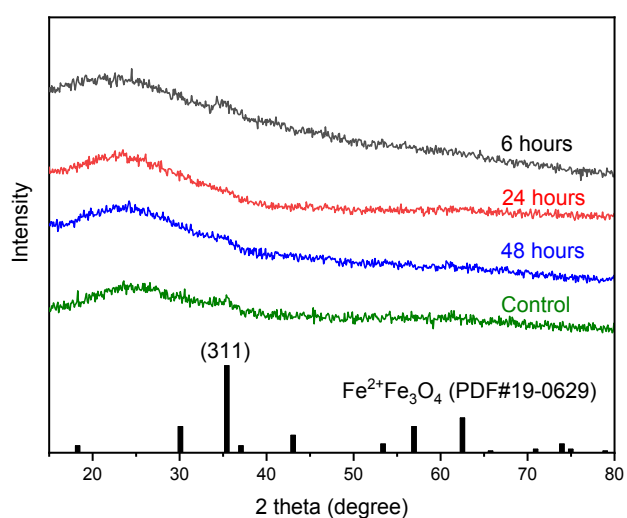
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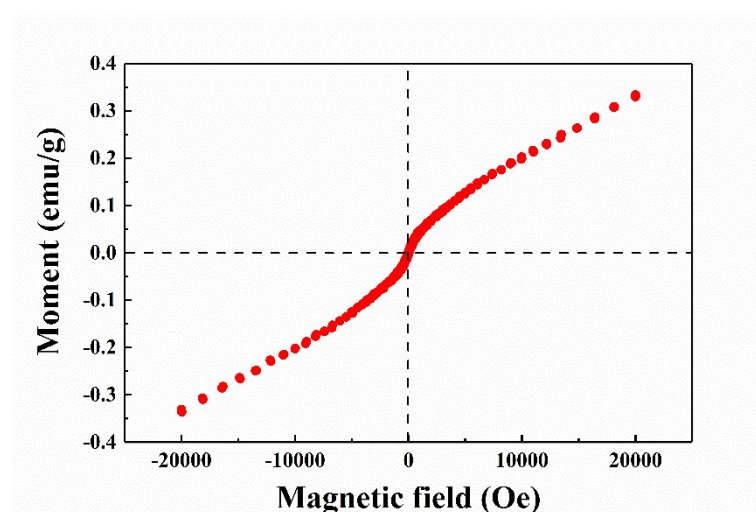
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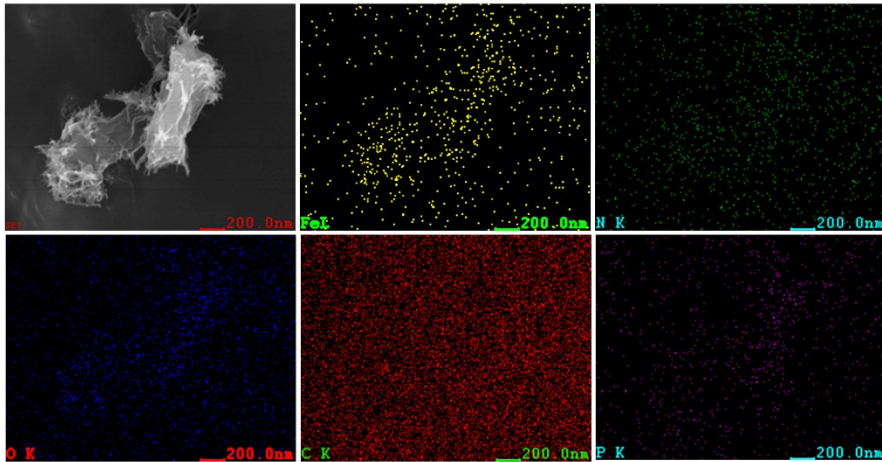
### Supporting Information



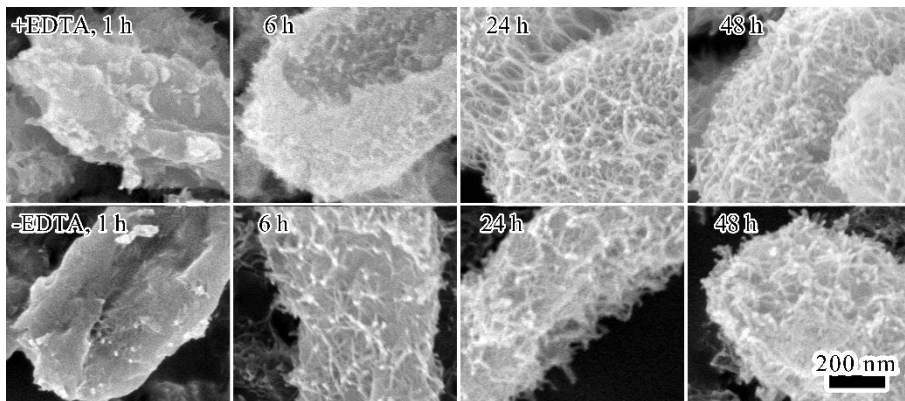
**Figure S1** XRD spectra of iron biominerals after mineralization for 6, 24, 48 hours. The control sample is biominerals acquired after 48 hours of mineralization without bacteria.



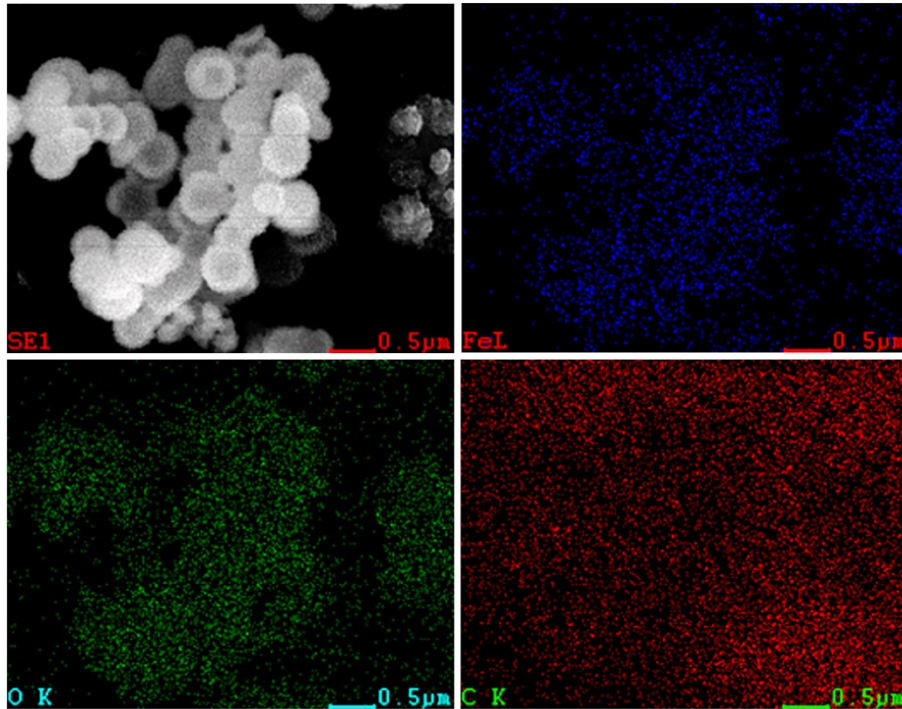
**Figure S2** Vibrating sample magnetometry of iron biominerals.



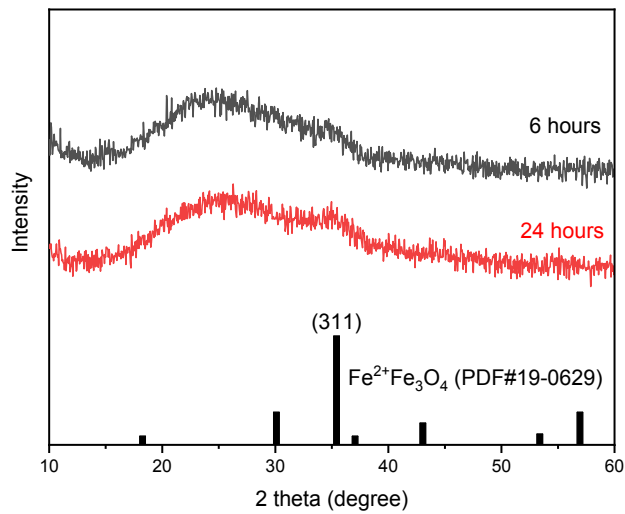
**Figure S3** Elemental analysis of minerals on bacterial surface. It shows HAADF-STEM image and corresponding EDX elemental maps of a *Bacillus subtilis* cell covering with biominerals.



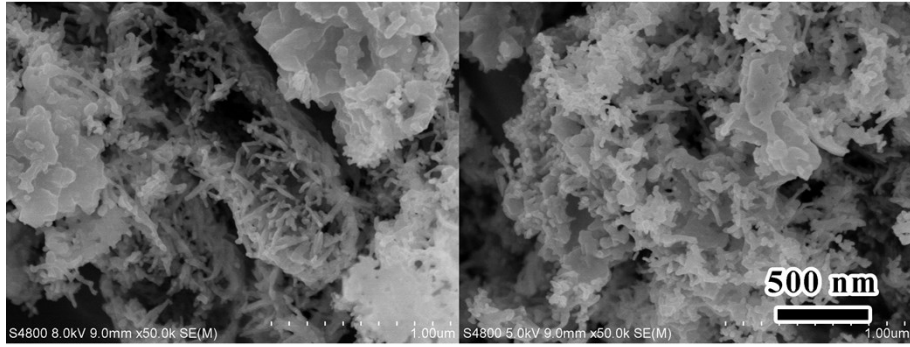
**Figure S4** SEM images of cells pretreating with lysozyme with or without EDTA after subjecting to mineralization for 1 hour, 6 hours, 24 hours, and 48 hours.



**Figure S5** Elemental analysis of minerals on liposomes. It shows HAADF-STEM image and corresponding EDX elemental maps of liposomes covering with minerals.



**Figure S6** Elemental analysis of minerals on liposomes. It shows HAADF-STEM image and corresponding EDX elemental maps of liposomes covering with minerals.



**Figure S7** SEM images of iron biomaterials after calcination at 700 °C for 4 hours.