

Correction



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Correction to 'Complex photonic response reveals three-dimensional self-organization of structural coloured bacterial colonies'

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In our work 'Complex photonic response reveals three-dimensional self-organization of structural coloured bacterial colonies' [1], we study the optical response and organization of bacterial colonies using several techniques including electron microscopy. After publication, we have been notified by the facilities of the transmission electron system used for imaging of bacterial colony cross-sections that the calibration of the images reported in figure 1f, electronic supplementary material, figures S2d and S4a contained an error. The image calibration has changed from an original 0.001971 $\mu\text{m}/\text{pixel}$, to the correct value of 0.004067 $\mu\text{m}/\text{pixel}$. Therefore, the length of the scale bar in figure 1f changes to 2.06 μm .

Please note that this changes the lattice constant obtained from these TEM images to a value comparable to the cryogenic SEM images (figure 1d). However, the large gaps between the cells indicate that there is still a significant amount of shrinkage inside the sample. Therefore, our conclusions on the reliability of using imaging techniques for size determination remain unaltered.

The correct version of figure 1 and the correct captions for electronic supplementary material, figures S2 and S4 are provided below.

Figure S2. Electron Microscopy of bacteria colonies: (a) Cryo-SEM of a less ordered section of a WT IR1 colony from top view. Scale bar: 5 μm , (b) Cryo-SEM of a very ordered section of a WT colony from top view. Scale bar: 10 μm , (c) Sketch of the in plane rotation of the bacterial colonies from top view. (d) Three different regions of a TEM cross-section of a WT colony showing the change of orientation in-plane. Black dashed line indicates the boundary between two bacterial orientations. Scale bar: 1.06 μm . (e) Cryo-SEM cross-section showing the overall film thickness. Scale bar: 10 μm .

Figure S4. Structure factor analysis: (a) TEM cross-section image of Flavobacterium strain IR1: scale bar 1.06 μm (b) Extracted bacteria positions from a using ImageJ Software. (c) K-space representation of b.

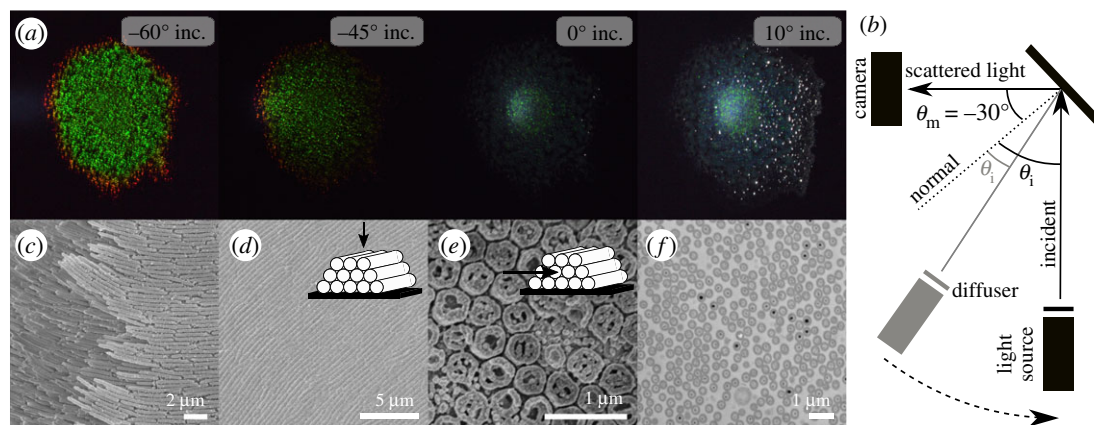


Figure 1. Bacterial film imaging and appearance. (a) Images of a bacteria colony for constant angle of observation ($\theta_m = -30^\circ$) but varying angle of incidence. Left to right: $\theta_i = -60^\circ, -45^\circ, 0^\circ, 10^\circ$. (b) Sketch of the scattering geometry for taking images with a camera. (c) Scanning electron microscopy image (SEM), (d) cryogenic SEM top-view (inset: sketch of the geometry), (e) cryogenic SEM cross-section (inset: sketch of the geometry), (f) cross-section in transmission electron microscopy (TEM).

Reference

1. Schertel L, van de Kerkhof GT, Jacucci G, Catón L, Ogawa Y, Wilts BD, Ingham CJ, Vignolini S, Johansen VE. 2020 Complex photonic response reveals three-dimensional self-organization of structural coloured bacterial colonies. *J. R. Soc. Interface* **17**, 20200196. (doi:10.1098/rsif.2020.0196)