

# Honeycomb Biosilica in Sponges: from Understanding Principles of Unique Hierarchical Organization to Assessing Biomimetic Potential

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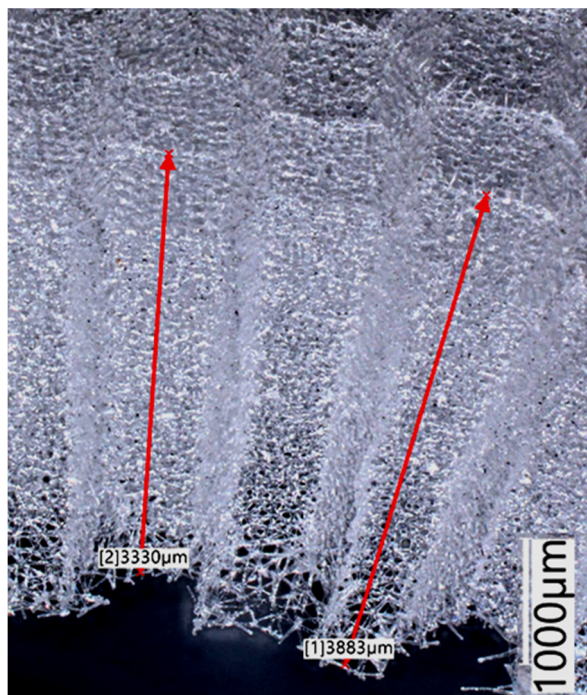
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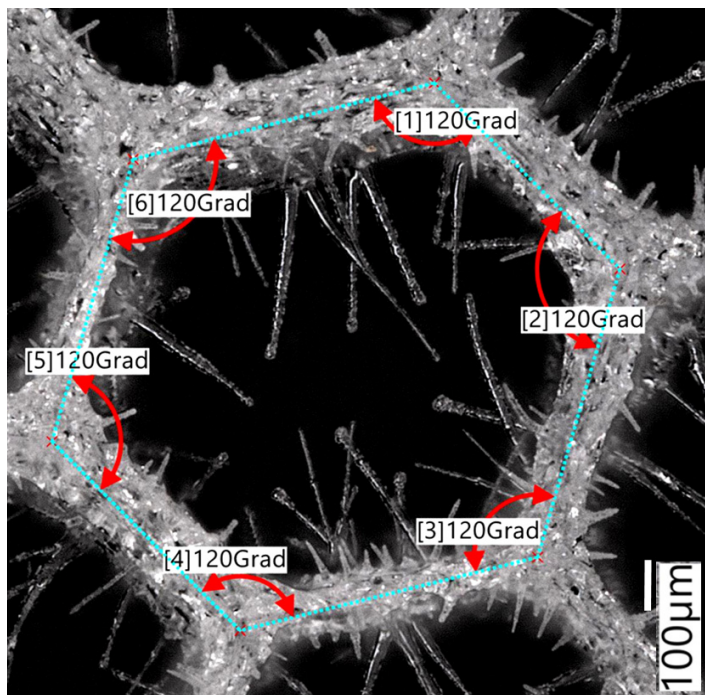
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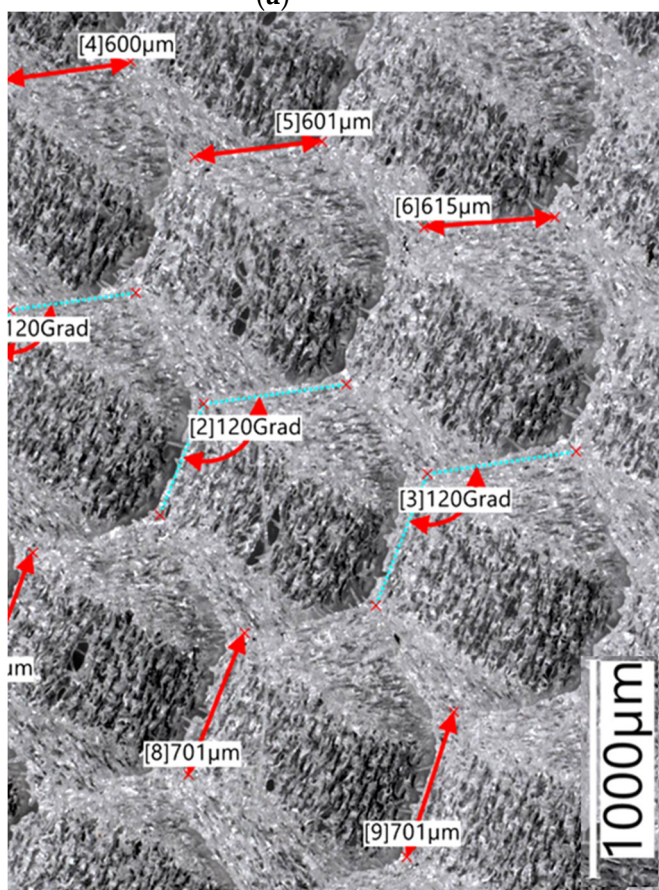
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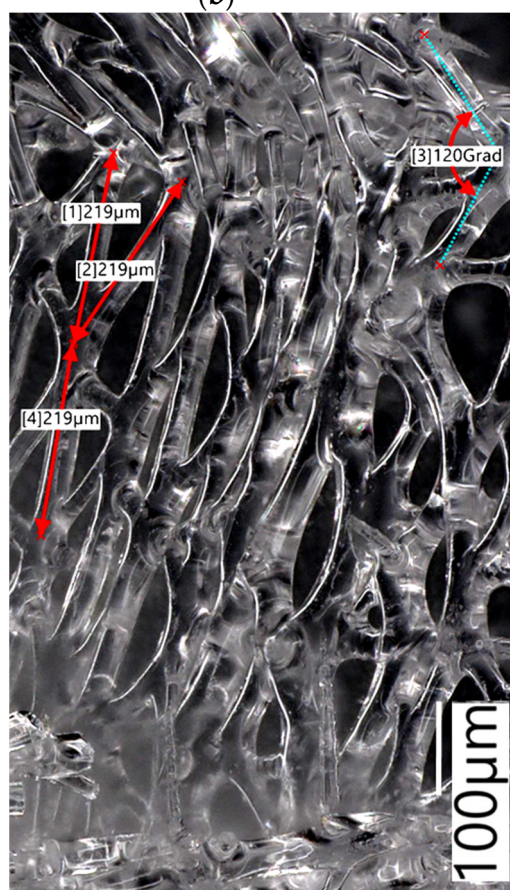
(a)



(b)



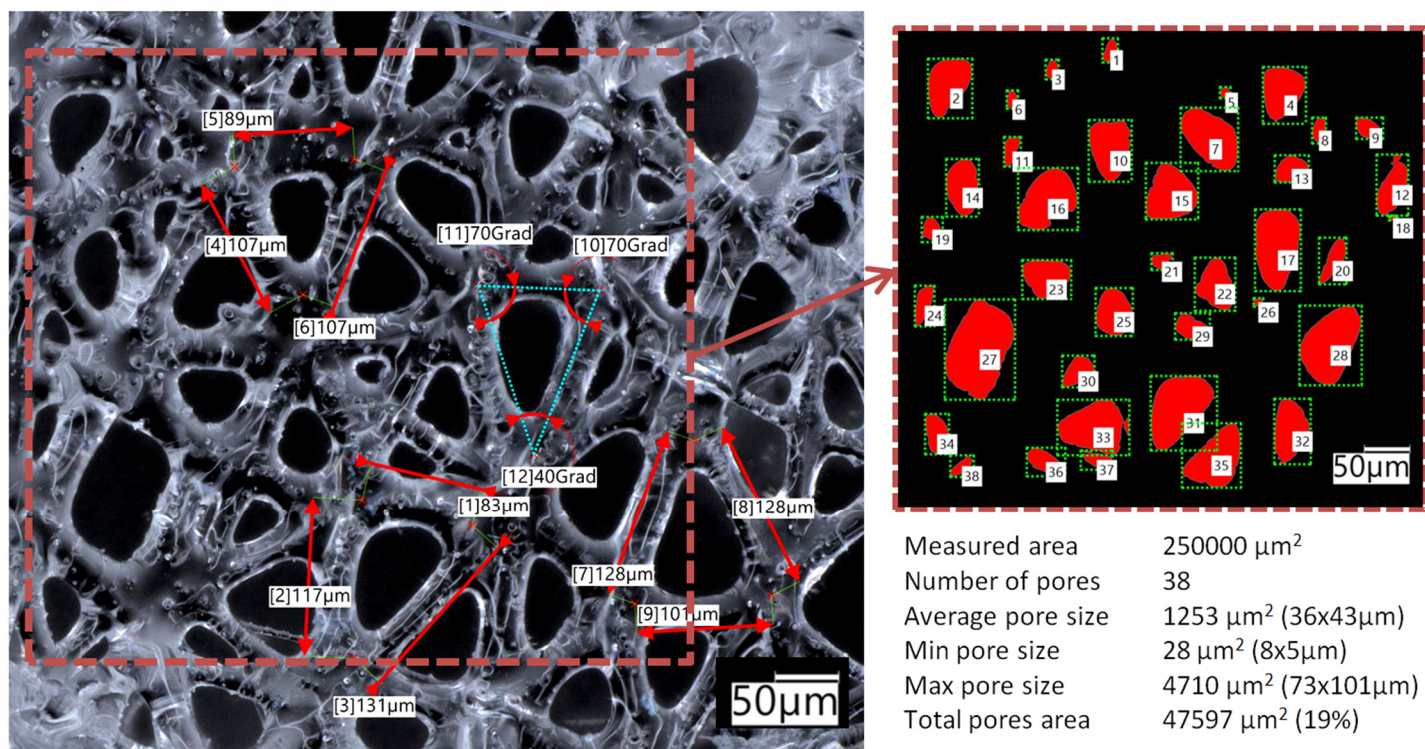
(c)



(d)

**Figure S1.** Digital microscopy imagery of selected fragments of purified siliceous skeleton of *A. beatrix* glass sponge. The skeleton wall is made of cylindrical honeycombs (a,c) with clear visible 120° angle motif (b,c). However, the walls of such cylinders possess triangular microarchitecture (side view, d). See also Figure S2.





**Figure S2.** Digital microscopy image of the siliceous wall fragment (see **Figure S1, d**) that was selected for calculations of the pore size distribution. In contrast to regular, honeycomb-like structural motif of *A. beatrix* sponge skeleton (see **Figure S1 a-c**) in this case, there is both a large scatter in the pore sizes, and in the thickness, length and the angles of the glassy bridges. The calculations have been carried out using original software of Keyence VHX 7000 digital microscopy system.