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Natures 3D Printing: Self-Assembly of Coral Skeletons

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Corals reef ecosystems are extremely diverse, beautiful, and threatened by climate change. Learning how corals form their skeletons may be useful to save them from global warming, and to develop new synthesis strategies. Coral skeletons, in fact, are Natures 3D printing. Recent synchrotron spectromicroscopy data reveal that all reef-building coral build their skeletons by two concomitant mechanisms: 1. Particle attachment, with nanoparticles of amorphous precursors nucleated in the tissue; 2. Ion attachment, at the surface of the growing skeleton, from the calcifying fluid. A new model for coral skeleton formation shows both mechanisms. See Sun et al. PNAS 2020.