CBI ERLANGEN

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# Designing complex microstructures

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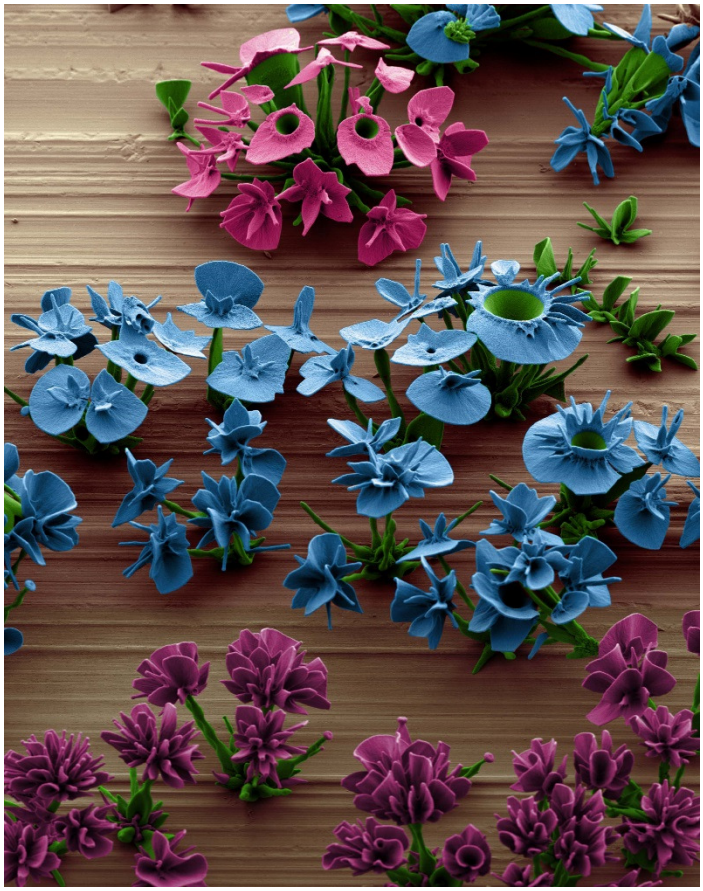

Harnessing the basic principles that guide such self-organizing processes is of fundamental scientific interest, but also promises a paradigm shift in the manufacturing of nano- and micromaterials. We recently demonstrated that the subtle balance between the diffusion of reactants and their reaction rates could lead to a wide range of microscopic shapes that could be further sculpted and hierarchically organized by rationally modulating the environmental conditions. Based on fundamental insights in the underlying mechanism, we now present new ways to steer the nucleation and growth of mineralizing microstructures. These results contribute to our understanding of biomineralization processes and outline a new nano-fabrication strategy for functional self-organizing materials.

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