

## **Algorithmic Self-Assembly and Self-Similar Structures**

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Recursive processes and self-similarity of form and function can be seen in many natural phenomena. Controlled algorithmic self-assembly, in particular DNA self-assembly has shown grand progress in recent years. Advances have been made to control the assembly process such that structural recursive growth with self-similar functionality of the components is becoming feasible. We describe a model, and experimental results supporting it, where the building blocks of the assembly process are capable of transmitting and receiving binding site activation signals thereby accomplishing assembly in stages. Within this model, it can be shown that a recursive assembly of archetypal self-similar aperiodic structures can be realized.