

Good!

7.349 Abstract
3.2.2005

Molecular Computation of Boolean Functions

The idea of assembling molecular tiles to perform computations has recently become a real possibility. We propose a system capable of evaluating Boolean functions using a model circuit that computes the parity of the input elements. We can construct a self-assembling template of programmable pawns with triple-crossover (TX) DNA molecules that are rotated out of the plane. These pawns will have appropriate "sticky ends" such that a specific set of tiles can be designed to carry out the Boolean computation. Four types of basic tiles--input, computational, transmitter, and void--will self-assemble when put in solution containing template, provided there is a double site available to bind them. This novel approach separates the *program* from the *data* because the program is designed into the network of pawns and the data (both input and output) is entirely in the second layer of tiles. Although this system is essentially two dimensional, it seems possible to generalize a similar computational network to three dimensions.

Be a bit clearer on layer distinctions program vs. computation.
This address my concern should be moved higher up.

are proposed to
too much detail for the abstract.

Abstract
Molecular Computation of Boolean Functions
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Optimal encoding and
for the