

# Designing With DNA Made Easy



ACS Nano

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This tail-flipping dolphin, made of DNA, was designed with origami software.

DNA is more than just the basic building block of life. It has also become a basic building block of nanostructures, winding its way into nanoscale cubes, cages, and tetrahedra. In 2006, scientists developed "DNA origami" as a method for creating complex two-dimensional DNA nanostructures such as maps and snowflakes ([C&EN, March 20, 2006, page 10](#)). The technique, in which hundreds of short oligonucleotides fold and fasten a long single strand of DNA into a predetermined shape, requires some complex chemical design strategies. Now, [Jørgen Kjems](#) of Denmark's University of Aarhus and colleagues have developed a user-friendly software package ([www.cdna.dk/origami](http://www.cdna.dk/origami)) that makes designing DNA origami structures easier ([ACS Nano 2008, 2, 1213](#)). To demonstrate the program, Kjems's team designed and built a DNA dolphin that measures roughly 150 nm nose to tail. The researchers created the dolphin with a flexible tail that can be bent (shown) with the tip of an atomic force microscope. Such flexibility, they note, might be exploited in future DNA origami structures for use as nanorobotic arms or nanocantilevers.