DNA origami

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Researchers from Brigham Young University took DNA strands of customized length and spelled "BYU." Their advances in the field of DNA origami put them one critical step closer to making nanoscale electronic circuits. Credit: American Chemical Society

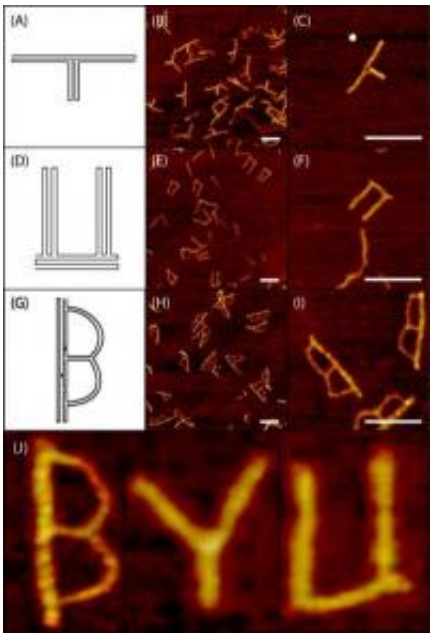
Researchers from Brigham Young University found how to shape customized segments of DNA into tiny letters that spell "BYU." This new method of DNA origami will appear in the aptly titled journal *Nano Letters*.

The letters are about 100 nanometers in size. That's roughly a billion times smaller than the block Y on the mountain overlooking BYU's campus and 1/1000 the width of a human hair.

The team's larger pursuit is to design nanoscale shapes for electrical circuitry and make tiny - yet inexpensive - computer chips.

DNA origami came on the scene a few years ago when a computer scientist at Caltech wove strands of DNA into smiley faces and other shapes. But until now scientists had to hunt for viruses and microbes whose DNA strands were the right length for the particular task. That's like building a log cabin without a saw: Instead of cutting the trees down to size, you have to size your cabin to the trees available.

The BYU researchers instead replicate DNA to make strands precisely as long or as short as they need.



In an advance toward developing nanoelectronic devices, scientists in Utah arranged segments of DNA into tiny letters that spell "BYU." Credit: The American Chemical Society

BYU chemistry professor Adam Woolley authored the paper with three of his students, Elisabeth Pound, Jeffrey Ashton and Hector Becerril. Ashton is an undergraduate.

"I was blown away when the students were able to make B's," Woolley said. "Right angle shapes, that's one thing. But to make something with curves and multiple intersections, I thought 'Wow, that is really cool.'"

The work is funded by a $1 million grant from the National Science Foundation.

"This very quickly went from the initial design of a simple rectangle shape to more sophisticated branching," Woolley said. "It's a testament to the quality of graduate students and undergraduates we have here in our department and at BYU in general."

Source: Brigham Young University (news : web)