Inside: Energy Quarterly EQ

MRS Bulletin

December 2017 Vol. 42 No. 12
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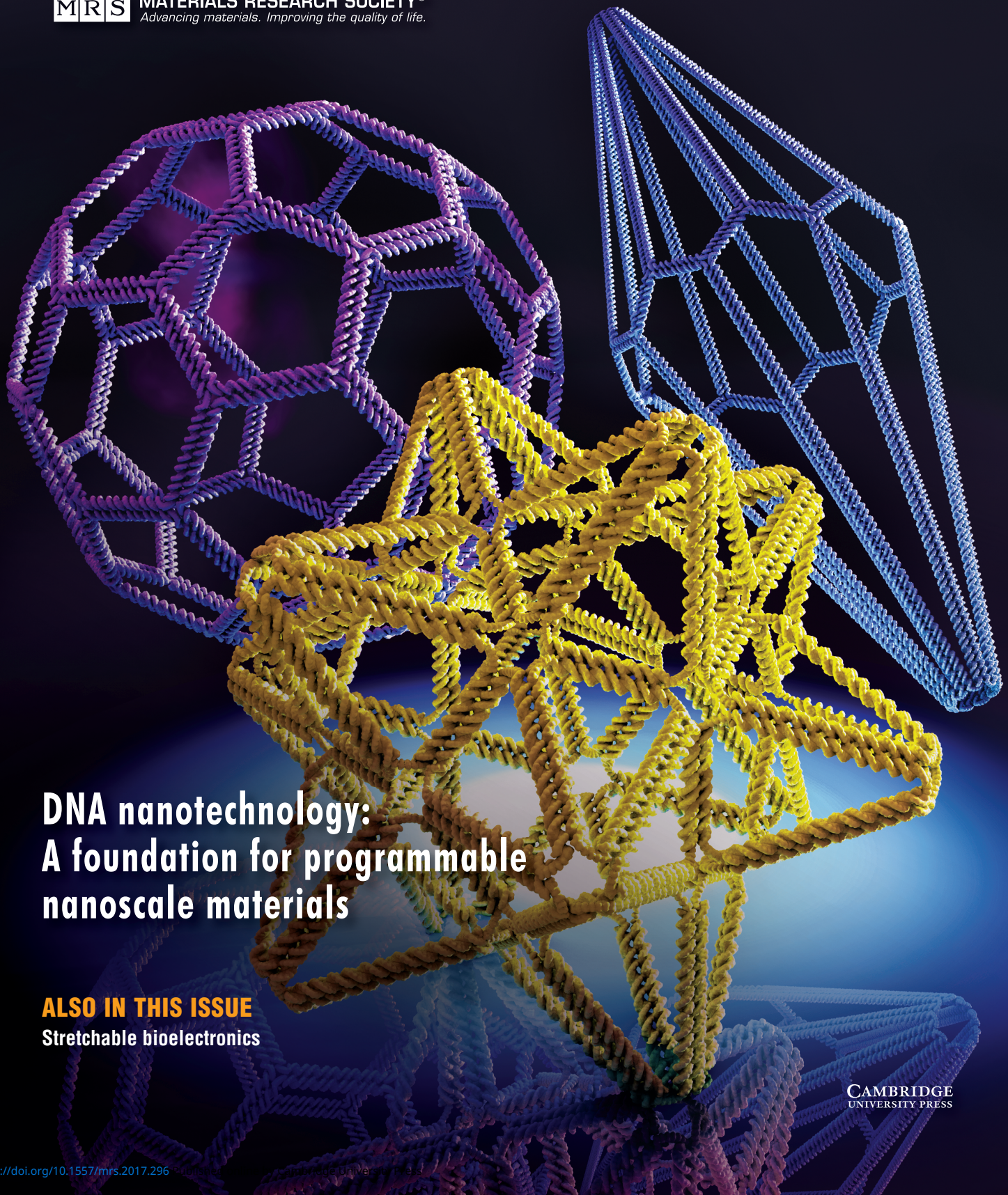

DNA nanotechnology: A foundation for programmable nanoscale materials

ALSO IN THIS ISSUE

Stretchable bioelectronics

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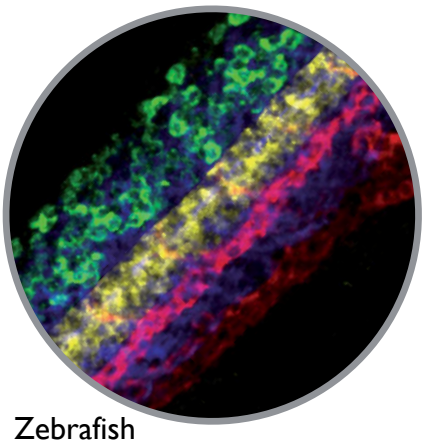

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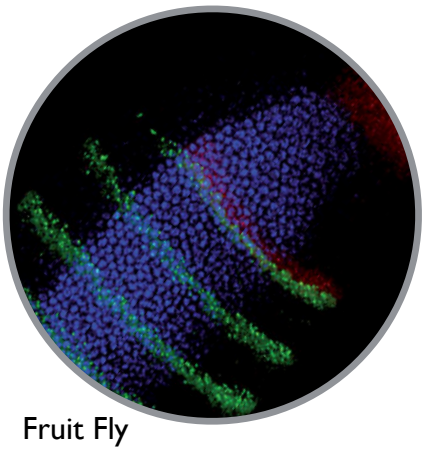
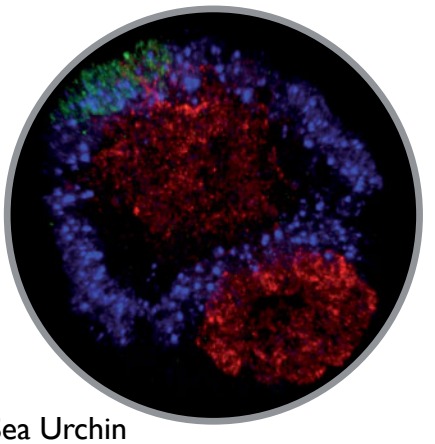
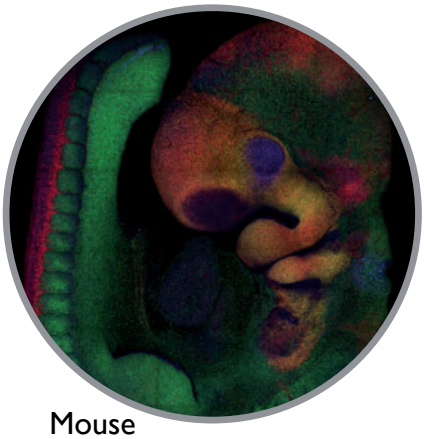


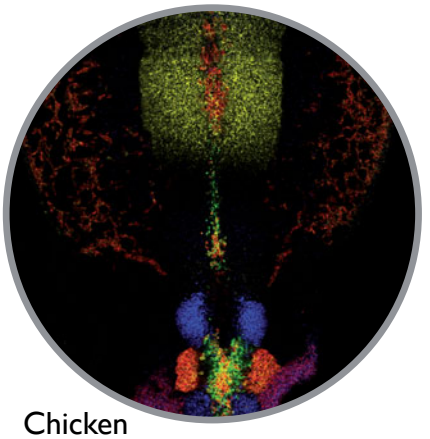
Fruit Fly



Sea Urchin



Mouse



Chicken

Worm

Applying principles from molecular programming and dynamic nucleic acid nanotechnology to develop and support programmable molecular technologies for reading out and regulating the state of endogenous biological circuitry

Caltech

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DNA NANOTECHNOLOGY: A FOUNDATION FOR PROGRAMMABLE NANOSCALE MATERIALS

TECHNICAL FEATURE

Energy Quarterly

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DEPARTMENTS

NEWS & ANALYSIS

ON THE COVER

DNA nanotechnology: A foundation for programmable nanoscale materials. This issue of *MRS Bulletin* overviews the unique capabilities of DNA nanotechnology, with the aim of promoting the integration of DNA nanotechnology into materials science. The focus is on the use of artificial DNA systems to organize and reconfigure functional nanomaterials. The articles in the issue highlight a wide range of applications, from new DNA-based lithographies and plasmonic optical devices to DNA boxes that control the activity of enzymes. The cover illustrates the power and versatility of DNA self-assembly to program nanoscale geometry. Three polyhedra highlight the field's progress toward fully automated design. Each DNA double helix has a diameter of 2 nm, and the maximum dimension of the star is 100 nm. Image courtesy Ella Maru Studio, rendered using atomic models from Sakul Ratanalert, Massachusetts Institute of Technology. See the technical theme that begins on page **882**.

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FEATURES

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About the Materials Research Society

The Materials Research Society (MRS), a not-for-profit scientific association founded in 1973 and headquartered in Warrendale, Pennsylvania, USA, promotes interdisciplinary materials research. Today, MRS is a growing, vibrant, member-driven organization of over 16,000 materials researchers spanning over 80 countries, from academia, industry, and government, and a recognized leader in the advancement of interdisciplinary materials research.

The Society's interdisciplinary approach differs from that of single-discipline professional societies because it promotes information exchange across many scientific and technical fields touching materials development. MRS conducts three major international annual meetings and also sponsors numerous single-topic scientific meetings. The Society recognizes professional and technical excellence and fosters technical interaction through University Chapters. In the international arena, MRS implements bilateral projects with partner organizations to benefit the worldwide materials community. The Materials Research Society Foundation helps the Society advance its mission by supporting various projects and initiatives.

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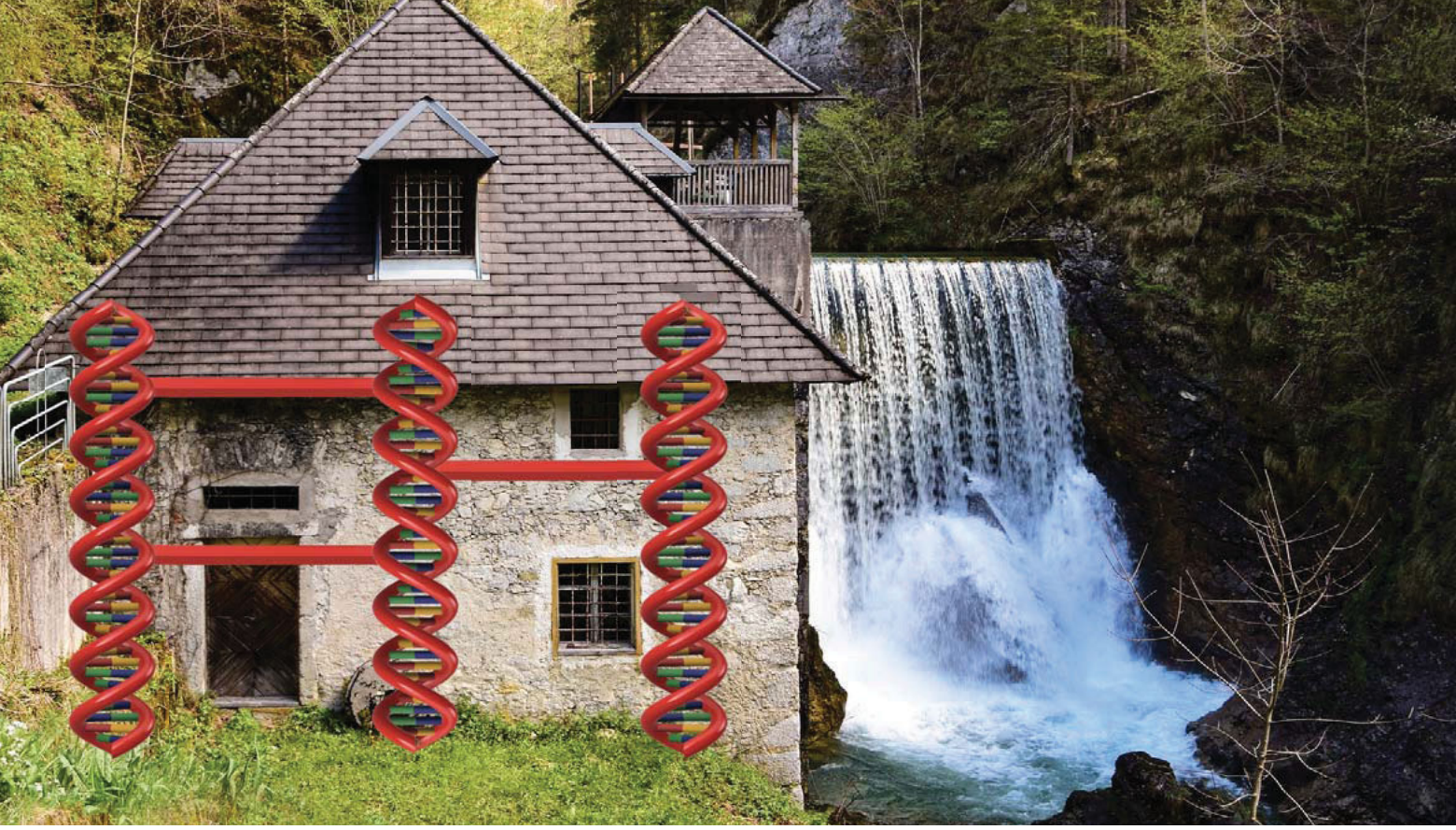
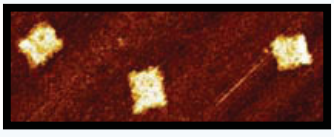


Are all ssDNA scaffolds created equal?

The short answer: No.

Whether you make or buy your ssDNA scaffold, the quality of the input will be a major factor on your finished nanostructure product. Please visit Guild BioSciences' website to view our study comparing Guild BioSciences' FOUNDATION™ ssDNA Scaffold to other scaffolds on the market.

Guild BioSciences offers quality, low cost FOUNDATION™ ssDNA Scaffold for the DNA origami research community. Current scaffolds include: 7249 (M13mp18), 7308, and 8064. Follow us on LinkedIn® to be informed of new scaffolds and related products.



AFM image of rectangles produced using FOUNDATION ssDNA Scaffold.

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