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Upon heating, a strain-programmable fiber-based artificial muscle composed of thermoplastic and elastomer layers actuates a miniature printed arm and lifts a dumbbell 650 times its own weight.

These fiber-based muscles, fabricated at lengths of hundreds of meters, are highly tunable in terms of power and lateral dimensions and thus may offer opportunities in robotics and prosthetics. See pages 125, 145, 150, and 155.

Photo: *Ken Richardson*

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SCIENCE (ISSN 0036-8075) is published weekly on Friday, except last week in December, by the American Association for the Advancement of Science, 1200 New York Avenue, NW, Washington, DC 20005. Periodicals mail postage (publication No. 48446D) paid at Washington, DC, and additional mailing offices. Copyright © 2019 by the American Association for the Advancement of Science. The title SCIENCE is a registered trademark of the AAAS. Domestic individual membership, including subscription (12 months): \$165 (\$74 allocated to subscription). Domestic institutional subscription (51 issues): \$1971. Foreign postage extra: Mexico, Caribbean (surface mail) \$55; other countries (air assist delivery): \$98. First class, airmail, student, and emeritus rates on request. Canadian rates with GST available upon request. GST #R123488122. Publications Mail Agreement Number 1069624. Printed in the U.S.A. Change of address: Allow 4 weeks, giving old and new addresses and 8-digit account number. Postmaster: Send change of address to AAAS, P.O. Box 96178, Washington, DC 20090-6178. Single-copy sales: \$15 each plus shipping and handling; bulk rate on request. Authorization to reproduce material for internal or personal use under circumstances not falling within the fair use provisions of the Copyright Act can be obtained through the Copyright Clearance Center (CCC), www.copyright.com. The identification code for Science is 0036-8075. Science is indexed in the Reader's Guide to Periodical Literature and in several specialized indexes.

# Science

**365 (6449)**

*Science* **365** (6449), 101-194.

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