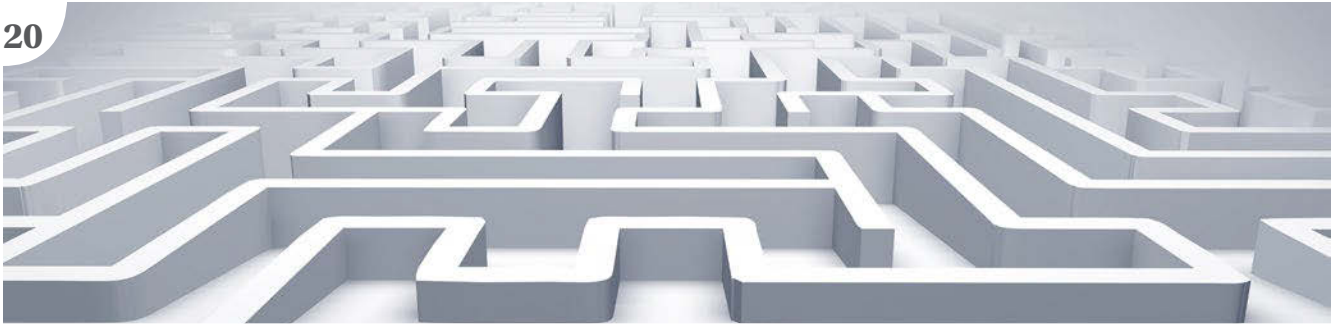
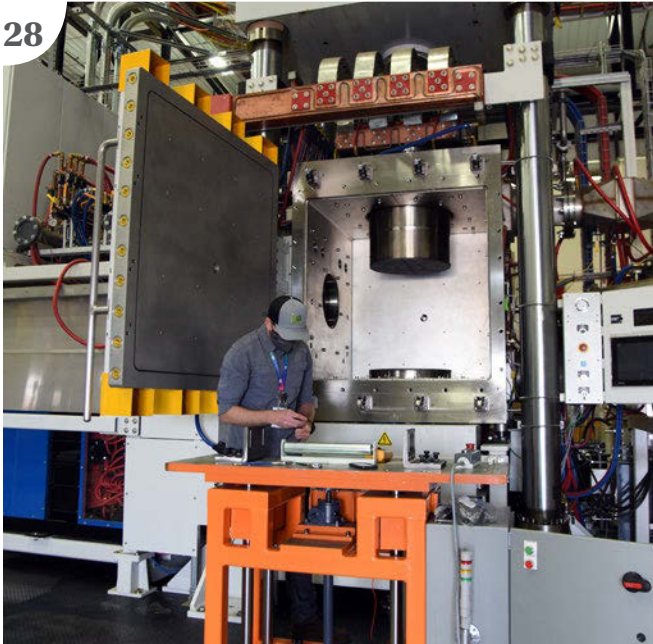


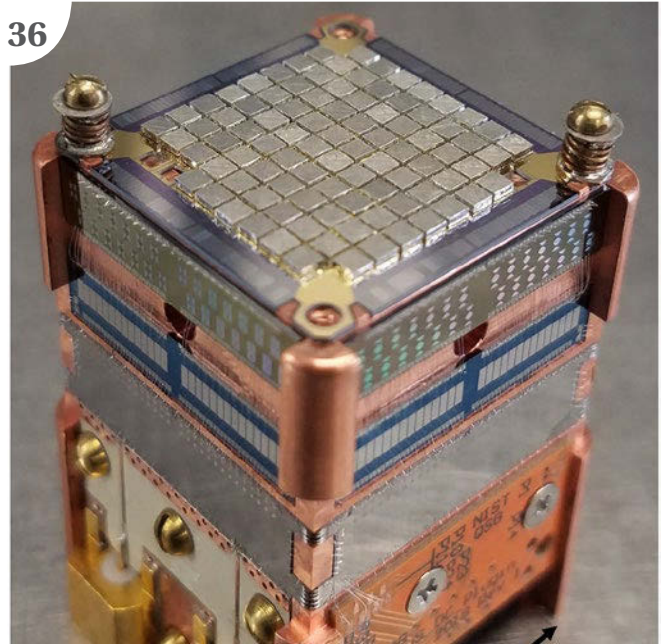
20



28



36



Feature Articles

20 The U.S. nuclear fuel Gordian knot: The uncertain path forward

28 From lab to reactor: Scaling up advanced manufacturing for fuels and more

36 Jumping hurdles: ARPA-E and the path to advanced reactor deployment

42



49



59



61



Insight & Opinion

- | | |
|---|---|
| <p>4 Nuclear Notes
The need for fuel</p> <p>6 Readers Write
Advanced reactors and the future</p> <p>8 Letters</p> <p>10 Atoms
Get more from your fuel</p> | <p>14 Leaders
Advancing fuel production and performance for the next generation of reactors</p> <p>84 Opinion
50 minerals critical to our society</p> <p>96 Nuclear News Asks
What inspired you to work in the nuclear fuel cycle?</p> |
|---|---|

Headlines

- 16 Nuclear Trending
- 42 Power & Operations
- 49 Research & Applications
- 56 Waste Management
- 61 Education
- 66 History
- 70 ANS News

Community Updates

- 76 Industry
- 82 Standards
- 83 Index to Advertisers
- 88 People
- 92 Calendar
- 94 Recently Published
- 95 ANS Journals

Editorial

Director of Publications John Fabian
Publisher/Editor-in-Chief Rick Michal
Staff Writers
 Susan Gallier, Tim Gregoire, Michael McQueen
Contributor A. J. Smuskiewicz
Copy Editors David Strutz, Mary Tong
Graphic Design Specialist Chris Salvato
Contributing Designers Jay Bogardus, Lisa Dagley

Advertising & Circulation

Director of Sales Jeff Mosses
Advertising Production Specialist Erica McGowan

Editorial Advisory Committee

Jess C. Gehin, John G. Gilligan,
 Lawrence E. (Larry) Boing, Dale Vines

ANS Officers

President Kenneth Petersen
Vice President/President-Elect Lisa Marshall
Treasurer Harsh Desai
Chairman, ANS Publications Steering Committee
 Xiaodong Sun

Administrative

Executive Director/Chief Executive Officer
 Craig Piercy

ANS Headquarters

General Information
 askanything@ans.org
 708/352-6611 | Fax 708/579-8314 | ans.org

Nuclear News Advertising
 708/579-8225 | 708/579-8226
 ans.org/advertise | advertising@ans.org

Nuclear News Editorial
 708/579-8216 | nucnews@ans.org | ans.org/nn

Nuclear News (ISSN: 0029-5574), Volume 66, Number 10. Published monthly (except during the month of April when issued twice monthly) by the American Nuclear Society, Incorporated, with business, executive, and editorial offices at 5200 Thatcher Road, Downers Grove, Illinois 60515; telephone 708/352-6611. Subscription rate for 2023 is \$725, which includes complimentary electronic access, 1959 to current issue; for subscriptions outside North America, add \$80 for shipping and handling. Alternatively, subscription rate is \$635 for Electronic Access Only, 1959 to current issue. Single copy price (regular monthly issues) is \$52; add \$12 for postage and handling if being shipped to address outside North America. Single copy price for annual mid-April Buyers Guide is \$125; add \$15 for postage and handling if being shipped to address outside North America. Individual ANS members receive *Nuclear News* as part of membership. Replacement copies may be obtained at the single copy price, as long as copies are available. Inquiries about the distribution and delivery of *Nuclear News* and requests for changes of address should be directed to the American Nuclear Society. Allow six weeks for a change to become effective. POSTMASTER: Send change of address orders to *Nuclear News*, American Nuclear Society, 5200 Thatcher Road, Downers Grove, Illinois 60515, or nucnews@ans.org.

Nuclear News is printed in New Richmond, Wis. 54017, by St. Croix Press, Inc. Nonprofit periodicals postage paid at La Grange, Illinois, and at additional mailing offices. Copyright © 2023 by the American Nuclear Society, Inc. Trademark registered in USA and Canada. Opinions expressed in this publication by the authors are their own and do not necessarily reflect the opinions of the editors, the American Nuclear Society, or the organizations with which the authors are affiliated, nor should publication of author viewpoints or identification of materials or products be construed as endorsement by this publication or by the Society.

Texts of most *Nuclear News* articles are available on the LexisNexis database, from Mead Data Corporation.