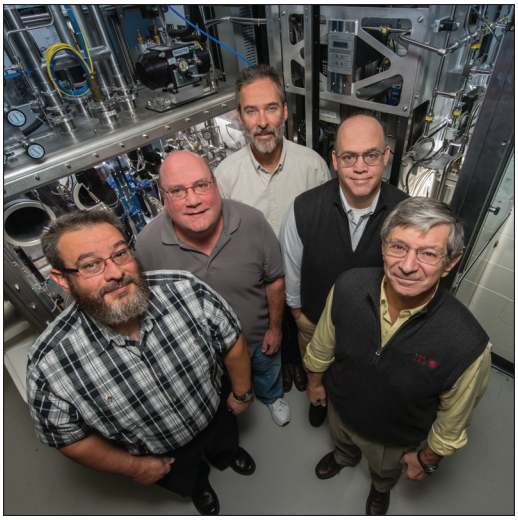
About the Cover:

The upper image on the cover features the Laboratory for Laser Energetics' (LLE's) scientists, engineers, and technicians responsible for commissioning the hydrogen Isotope Separation System (ISS). The design and testing of the Core System was carried out in collaboration with the Savannah River National Laboratory. The Core System (shown in the lower image on the cover) contains two coiled columns—palladium on kieselguhr and a cold molecular sieve—separated by a low-volume diaphragm valve. The ISS uses these two coiled columns in a complementary manner to separate the hydrogen species by mass. The ISS yields tritium purities exceeding 99.9%. LLE uses deuterium–tritium (DT) fuel to study inertial confinement fusion. Over time the isotopic ratio of LLE's fuel supply degrades from the preferred 50:50 ratio. The ISS is used to keep the supply of DT at the 50:50 ratio.



Listed counterclockwise, starting in the lower right, are W. T. Shmayda, R. F. Earley, N. P. Redden, M. D. Wittman, and J. L. Reid standing in front of the operational ISS. They report on the design and operational principle of the ISS in the featured article of this issue.

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