

PREFACE

SEVENTEENTH TARGET FABRICATION SPECIALISTS' MEETING

JOE KILKENNY

General Atomics

The Seventeenth Target Fabrication Specialists' Meeting, convened in October 2006 in San Diego, California, brought together international experts in the design and fabrication of targets for high-energy-density experiments on large laser and pulsed-power facilities throughout the world. The record number of attendees included scientists and engineers from national laboratories and academic institutions in Japan, Russia, France, and the United Kingdom as well as the United States. More than 130 talks and posters presented state-of-the-art advances in design, materials development, and fabrication techniques for the many diverse and intricate targets for this exciting field of research. As in the past, a major motivation for the work presented is the prospect of achieving laboratory-scale thermonuclear fusion yield from inertial confinement fusion (ICF). With the approaching completion of the U.S. Department of Energy's National Ignition Facility (NIF), as well as rapid progress toward the construction of the French Laser Megajoule (LMJ), development of ICF capsules, hohlraums, cryogenic fuel layers, and cryogenic support systems had a high visibility and emphasis. Key papers representing this important work are included in this special issue of *Fusion Science and Technology*. As well, many developments of novel low-density materials, materials composites, and precision fabrication techniques for ongoing experiments to study the properties and behavior of matter under extreme temperatures and densities are presented. As with ICF, these developments will enable new realms of research results on the NIF.

An important event during this meeting was the awarding of the Larry Foreman Award for innovation and excellence in target fabrication. It was my pleasure to present this year's award to Dr. Masaru Takagi of Lawrence Livermore National Laboratory. Dr. Takagi received the award for his many contributions to our field. In particular, he invented and perfected microencapsulation applied to the formation of ICF capsules, a technique that is now the universal basis for capsule fabrication. Dr. Takagi extended this technique to the manufacture of low-density capsules from a variety of materials. More recently, he has made seminal contributions to the development of microfill tubes required for ignition targets. A paper describing his work is part of these proceedings.

I wish to acknowledge and express thanks to Dr. David Harding of the University of Rochester Laboratory for Laser Energetics (URLLE) for organizing the agenda for the meeting; to Ms. Jean Steve, also of URLLE, assisted by Ms. C. Isherwood and Ms. B. Koz of General Atomics, for doing most of the work of planning the meeting logistics; and to Dr. Bob Cook for serving as guest editor for this issue.