

PREFACE

DAVID HARDING

*University of Rochester Laboratory for Laser Energetics
Rochester, New York 14623-1299*

The Nineteenth Target Fabrication Meeting held in Orlando, Florida, from February 21–26, 2010, was attended by more than 100 scientists, engineers, and technicians from the United States, United Kingdom, France, and Japan to discuss the development of targets for inertial confinement fusion experiments. The program included 2 invited papers, 50 contributed papers, and 81 posters, a selection of which are presented in this dedicated issue of *Fusion Science and Technology (FS&T)*.

The main topic at the conference was the readiness of the target development effort of the National Ignition Campaign (NIC) to support a series of experiments begun at the end of 2009 at the National Ignition Facility (NIF) at Lawrence Livermore National Laboratory. These experiments are expected to culminate with the demonstration of ignition in 2011 or 2012. The presentations covered all aspects of building the capsules, assembling them into targets, filling them with the requisite fuel to exacting specifications, and delivering them to the target chamber to be imploded. All the design specifications were demonstrated to be manufacturable, which is a remarkable accomplishment that bodes well for the success of the NIC. The outstanding challenge is to achieve all the design specifications in each and every target, and there is an ongoing endeavor to achieve the needed high yield in a timely manner.

While the immediacy of the demands of the NIC was the primary topic at the conference, approximately half of the agenda was devoted to the development of targets and associated technologies that are needed to enable nonignition laser-based experiments (such as high-energy-density and laboratory-based astrophysics experiments). Additionally, ideas and new technologies that could be used in the future to mass-produce ignition-quality targets for inertial fusion energy applications were also presented.

A tradition of the conference is to present the Larry Foreman Award to an individual who has made a substantive contribution toward innovation and excellence in target fabrication. The recipient this year is Diana Schroen of General Atomics. She is based at Sandia National Laboratories (SNL) and coordinates SNL's target production and development efforts. This award recognizes Diana's technical contribution as a part of the team that developed resorcinol-formaldehyde foam capsules, as well as her managerial and technical skills producing the complex wire-array targets that are used by the Z Pulsed Power Facility at SNL.

Special appreciation and recognition are due the conference organizer, Jean Steve, of the University of Rochester Laboratory for Laser Energetics, for her tireless efforts in making the conference the enjoyable and productive meeting that it was. We also thank Bob Cook for his services as the guest editor for this issue. The target fabrication community is extremely fortunate to continue to have both Ms. Steve and Dr. Cook involved with these critical aspects of the conference; their high standards provide an outstanding forum for us to share our research and development progress, as recorded in this dedicated issue of *FS&T*.