

Preface

The first conference on inertial fusion energy (CIFE 2012) was held on April 26th and 27th, 2012 at the Conference Center of Pacifico Yokohama, as one of 6 specialists' meetings of the Optics and Photonics International 2012. The purpose of CIFE was to provide a forum to present and discuss physics and engineering aspects of the development of fusion power plants. More than 50 abstracts were submitted, and more than 70 persons from 11 countries attended the conference. This proceeding book contains 16 papers which passed the peer review process of the Plasma and Fusion Research of the Japan Society of Plasma Science and Nuclear Fusion Research.

Ignition and burn by inertial fusion at laboratory scale is the immediate-term goal of inertial fusion researchers. The central ignition scheme is anticipated to be demonstrated within the next few years at the National Ignition Facility in the USA and Laser Mégajoule in France. Extensive studies on this approach and complementary approaches such as fast ignition, impact ignition and shock ignition are continued all over the world. Success with ignition will usher in a new era of inertial fusion energy, in which fusion power plants are developed to produce and utilize clean, safe energy in abundance for the society of the future. To clarify the critical issue toward fusion power plant delivery, the latest advances on drivers, targets, core plasma physics, chamber system, safety and economics are collected in this book.

Finally, we would like to thank all of the participants for fruitful discussions and the IFE Forum for financial support.

Conference Co-Chairs

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