

## Editorial

This issue contains papers from the proceedings of symposium on  
*Physics of Target Implosion and Pulsed Power Techniques*  
held in Yokohama, September–October 1987

At the present stage of fusion research, a large gap exists between our present position and the ultimate goal of establishing a plasma, from which a practical amount of fusion energy can be extracted. The Inertially Confined Fusion (ICF) method is surely one of the most promising ways. However, ICF research is less active worldwide than is work on magnetically confined fusion. Experiments using large Nd glass lasers to study laser-target interactions result in strong neutron release from the target. The maximum number of observed neutrons, however, is of order of  $10^{13}$ . This is much less than that for the ultimate goal, of  $\sim 10^{21}$ . Further, the physics in present experiments involving a tiny test-target will differ from that in a larger practical target in a power reactor. Thus it is very important at present to identify the phenomena expected in a practical target and to clarify the physics of target implosion.

At the same time, the match, i.e., the energy driver, used to ignite the fusion fuel must not be expensive. This is apparent from the view of economics since fusion reactors will not be simpler to build and operate than fast breeder reactors which are not themselves, very economical unless improvements are achieved. The development of pulsed power techniques is one of the key issues related to the achievement of fusion, both technologically and economically. This becomes clear in view of experiences in construction of PBFA-II, at the Sandia Laboratories in the U.S.A.

On September 30th and October 1st, 1987, the symposium on “Physics of Target Implosion and Pulsed Power Techniques” was held in Yokohama. This symposium was attended by twenty-four Japanese scientists as well as three professors from Spain, where the theoretical and numerical studies for ICF research are being performed most intensely. Prof. L. Drska, one of the organizers of the 18th ECLIM, of Tech. Univ. of Prague, could not attend the symposium due to the delay of his arrival at Japan. However he has submitted kindly a manuscript for this proceedings. The selected papers, published here should be useful in ICF and a variety of related fields.

Keishiro Niu, *Guest Editor*