

Preface

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This volume contains the contributed papers presented at the International Workshop on Dense Magnetized Plasmas (IWDMP-2000), which was held at Kudowa Zdrój, Poland, on October 12–14, 2000.

There were 63 registered participants from 10 different countries. The most numerous were delegations from Poland (22 participants, mainly from IFPiLM and IPJ), Russia (12 participants), and the Czech Republic (11 participants), Germany (4 participants) and Rumania (also 4 participants). During 3 working days of the workshop there were held 6 plenary sessions, at which the invited speakers gave 10 topical or review talks. During those sessions, the participants listened also to 39 short oral presentations.

All the invited and contributed papers were classified in 6 topical groups:

1. Theoretical analysis of Z-pinch discharges,
2. Theoretical analysis of various phases of PF-type discharges,
3. Experimental facilities for Z-pinch and/or PF-type studies,
4. Development of diagnostic methods for Z-pinch and PF experiments,
5. Results of recent Z-pinch and PF experiments,
6. Applications of Z-pinch and/or PF devices.

The most important results of the described workshop can be summarized as follows:

- In the field of plasma theory – a new description of the anomalous resistivity of plasma as well as new models of

self-organization and filamentation have been proposed.

- In the field of plasma experiments – new results of the recent studies of plasma discharges in micro-capillary systems, as well as those from PF-type facilities, were presented. For the first time there were presented results obtained with the large PF-1000 facility operated at IFPiLM at an energy level of the order of 1 MJ. Also presented were preliminary results from the PF-360 facility operated at IPJ with the application of special cryogenic and gas-puffed targets.
- In the field of plasma applications – there was reported the use of X-ray pulses from plasma discharges for the investigation of internal structure of different solid objects. Also reported was the development of an X-ray tomography system based on a PF-type device, and the application of fast neutron pulses from PF devices for the activation analysis of different materials, e.g. ores containing gold.

Abstracts of all the papers presented at IWDMP-2000 were published in the proceedings distributed to all the participants and institutions interested in this subject. Full papers, which were delivered to the Organizing Committee during the workshop, were submitted for publication in *Nukleonika*. The invited papers have already been published in *Nukleonika* (2001) vol. 46, no. 1. All the contributed papers, reviewed and accepted for publication, are presented in this issue.

It should be noted that all detailed questions connected with particular presentations should be sent directly to the indicated authors or co-authors.