

TCM/RUSFD - Technical Committee Meeting on Research Using Small Fusion Devices

FOREWORD

Small fusion devices are still significantly contributing towards the worldwide effort to attain the controlled thermonuclear fusion. The main advantages of using these machines for investigating magnetic confined plasmas are: relative low cost; flexibility for testing innovative concepts and new regimes of operation; elasticity for investigating basic physics, processes, and theories; and capability of helping the improvement and development of new plasma diagnostic systems. Due to these overall qualifications, many small fusion devices are still in operation, both in developing and developed countries, presenting rich opportunities for international collaboration.

The series of *Technical Committee Meetings on Research Using Small Fusion Devices TCM/RUSFD*, under the main sponsorship of IAEA – *International Atomic Energy Agency*, has started with the 1st meeting held in Budapest, in 1985, with the name of *TCM on Research Using Small Tokamaks*, and continued until the 14th one, which was held in the Campus of the University of São Paulo, São Paulo - Brazil, from June 25 to June 27, 2001. The local organizing institution was the *Laboratório de Física de Plasmas, Instituto de Física - Universidade de São Paulo (LFP-IFUSP)*.

The major objectives of the RUSFD meetings, since the beginning, were to provide a forum for discussion of research performed using small and medium scale fusion devices, theoretical developments, plasma applications and, also, to stimulate international collaborations. Although the meetings have focused mainly on results obtained with small and middle-size devices, in many opportunities researchers from larger laboratories have attended the meetings to inform the plasma community about recent progresses achieved on large-scale experiments, and also to exchange scientific experiences in different laboratories and in different countries.

The scientific program of the 14th TCM/RUSFD, held in São Paulo, was very extensive and included Invited Talks, Oral Presentations and Poster Presentations, given by plasma scientists from 12 different countries. The topics that were discussed included: *Toroidal Magnetic Systems; Non-Toroidal Systems; Plasma Focus; Inertial Confinement; Innovative Concepts; Theory and Simulations; Diagnostics and Data Acquisition Systems; and Plasma Applications*. The level of the contributions was quite high and the event was a success.

The Guest Editors of this *BJP Special Issue* wish to take this opportunity to thank all the 14TH TCM-RUSFD participants and, in special, express their acknowledgment to Prof. Silvio Salinas, Editor of the *Brazilian Journal of Physics*, for his valuable help and for making this publication possible, and also to all the funding agencies that contributed for the realization of the meeting: IAEA – *International Atomic Energy Agency*, USP - *University of São Paulo*, FAPESP – *Fundação de Amparo à Pesquisa do Estado de São Paulo*, CNPq – *Conselho Nacional de Pesquisas*, and IFUSP - *Physics Institute of the University of São Paulo*. Finally we thank Ms. Neusa Martin for her efficient and hard work in compiling all the papers for the present BJP edition.

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Guest Editors:

Prof. Alvaro Vannucci (*Scientific Secretary*)

Prof. Ivan C. Nascimento (*Chairman*)

Prof. Ricardo M.O. Galvão

Dr. Wanderley P. de Sá

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