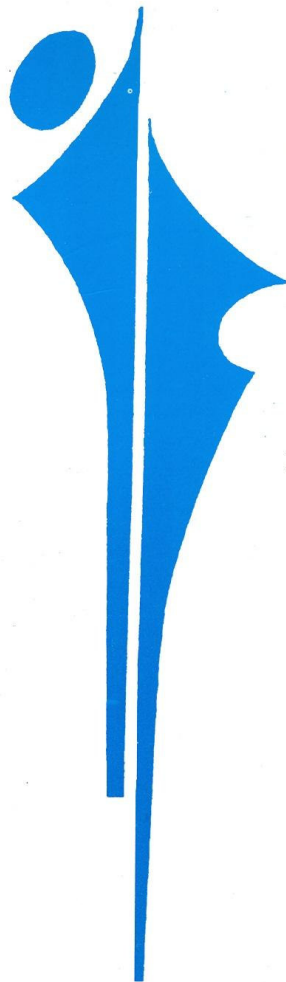


ИНСТИТУТ ЗА ФИЗИКУ – БЕОГРАД 1996 – 2000



1996 – 2000

ИНСТИТУТ ЗА ФИЗИКУ
Београд

**АКТИВНОСТИ И
АПСТРАКТИ
РАДОВА**

**ACTIVITIES AND
ABSTRACTS OF
PAPERS**

INSTITUTE OF PHYSICS
Belgrade

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This is the seventh volume in the series “*Activities and Abstracts of Papers*” of members of the Institute of Physics (IP), Belgrade. It contains the abstracts of articles and invited lectures given at conferences as well as the titles of contributions published within five years period 1996 – 2000. Only the publications with a clear statement that at least one of the authors is affiliated to the IP were included.

The text of the book is divided into chapters according to the titles of scientific projects from the basic researches that started in 1996 and were financed by the Ministry of Science and Technology of Republic of Serbia. Research activities were interrupted during bombardment of Federal Republic of Yugoslavia from March till June 1999. Although intended to last five years, projects were finished by Final Reports written in March 2000. A detailed presentation of other activities of IP staff members is given in the Institute’s monograph written in March 2001 after democratic changes in country in October 2000.

Members of IP were participated in 12 projects of basic research within three fields (01 – Physics, 02 – Chemistry and chemical technologies and 10 – Electrical engineering and electronics). The projects are divided as experimental – E, and mixed theoretical – experimental – M:

01M01 Fundamental and methodological problems in physics

Head of project: Academician Zvonko Marić (IP) and academician Fedor Herbut (SANU – Serbian Academy of Sciences and Arts)

Classical and quantum mechanics

Head of subproject: academician Zvonko Marić (IP) and academician Fedor Herbut (SANU)

Particles and fields

Head of subproject: Dr. Milutin D. Blagojević (IP)

01E02 Atomic and molecular physics

Head of project: Dr. Tasko Grozdanov (IP)

a) Theoretical atomic and molecular physics

Head of subproject: Dr. Tasko Grozdanov (IP)

b) Experimental physics of atomic particle collisions

Head of subproject: Dr. Bratislav Marinković (IP)

01E03 Low temperature plasma

Head of project: Prof. Dr. Zoran Lj. Petrović (IP)

a) Gaseous electronics

Head of subproject: Prof. Dr. Zoran Lj. Petrović (IP)

b) Radiation and transport phenomena in low temperature plasma

Head of subproject: Dr. Anatolij Mihajlov (IP)

01E05 Processes in deuterium plasma focus, capillary fusion and rare nuclear reactions

Head of project: Dr. Radovan Antanasijević (IP)

01E06 Experimental high energy physics

Head of project: Prof. Dr. Dragan Krpić (Phys.Fac.)

01M07 Nonlinear optics and plasma dynamics

Head of project: Dr. Milivoje Belić (IP)

01E09 Physics of materials

Head of project: Prof. Dr. Zoran V. Popović (IP)

01E10M1 Optical materials

Head of project: Dr. Milan J. Konstantinović (IP)

01E15 Physics of condensed state and new materials

Head of project: Prof. Dr. Sava Milošević (Phys. Fac.)

a) Cooperative phenomena in condensed systems

Head of subproject: Dr. Ljiljana Dobrosavljević-Grujić (IP)

b) Physical properties and phase transitions in condensed matter

Theme: Luminescence processes in condensed matter and its properties under high pressure

Leading scientist: Dr. Branislav Jovanić (IP)

02M14 Modeling, control and protection of environment

Head of project: Dr. Zorka Vukmirović and Dr. Marko M. Popović (IP)

a) Physics of atmosphere

b) Integral monitoring of human environment

02E16 Synthesis, design of microstructure and properties of monolithic and composite materials

Leading scientist: Dr. Slobodanka Nikolić (IP)

10E05 Microelectronics, optoelectronics and microsystem technologies

Head of project: Dr. Zoran Djurić (IHTM – Institute for Chemistry, Technology and Metalurgy)

Microelectronic technologies in applications in the sensor and optoelectronic components

Leading scientist: Dr. Milan Jevtić (IP)

The conception of this book is the same as in the previous book (*“Activities and Abstracts of Papers 1990 – 1995”* eds. Markušev and Mudrinić) and each chapter of this book is further split into three sections:

- **PUBLICATIONS:** Books, monographs and articles in international and national journals;
- **CONFERENCES:** Invited talks and progress reports (with abstracts) and contributions;
- **THESES:** PhD, M.S. and diploma works.

All contributions are given in chronological order. Author index is given at the end of the book. Members of the IP are listed in italic.

The IP organization at the end of year 2000 was given as follows:

- **Center for Theoretical Physics** (Center I), director: Prof. Dr. Djordje Šijački, at research projects in year 1998 the following number of participants was involved: 01M01*a* (5), 01M01*̄* (9); 01E02*a* (11); 01M07 (8); 01E15*a* (7).
- **Center for Experimental Physics** (Center II), director: Prof. Dr. Zoran Petrović, at research projects in year 1998 the following number of participants was involved: 01E02*̄* (3), 01E03*a* (10), 01E03*̄* (8), 01E05 (1), 01E10M1 (2), 01E15*̄* (2), 02M14 (5), 02M14*̄* (6).
- **Center for Atomic and Subatomic Physics** (Center III), director: Dr. Bratislav Marinković, at research projects in year 1998 the following number of participants was involved: 01E02*̄* (14), 01E03*a* (3), 01E03*̄* (1), 01E06 (6), 01M07 (3), 01E10M1 (5), 02M14 (1).
- **Center for Applied and Technical Physics** (Center IV), director: Dr. Radovan Antanasijević, at research projects in year 1998 the following number of participants was involved: 01E05 (5), 10E05 (1).
- **Center for Solid State Physics and New Materials** (Center V), director: Prof. Dr. Zoran Popović, at research projects in year 1998 the following number of participants was involved: 01E09 (20), 01E10M1 (9), 02E16 (2).

At the end of year 2000, among 181 employees at the IP there were 64 with the PhD degree and 38 with the M.S. degree. Number of employees within Centers was as following: 30 at Center I (24 PhDs and 5 MSs), 34 at Center II (17 PhDs and 9 MSs), 30 at Center III (10 PhDs and 7 MSs), 8 at Center IV (2 PhDs and 5 MSs), 34 at Center V (11 PhDs and 12 MSs) and 45 at Administration and Workshop. Director of the IP was Prof. Dr. Dragan Popović.

Editor

Belgrade, October 2003