



"PETRU PONI" INSTITUTE OF MACROMOLECULAR CHEMISTRY
INSTITUTE OF EXCELLENCE OF THE ROMANIAN ACADEMY

Director: Prof. Bogdan C. Simionescu

Mail address: Aleea Grigore Ghica Voda 41A, 6600 Iasi, Romania

Tel. +40 232 217454. Fax +40 232 211299

E-mail: bcsimion@icmpp.tuiasi.ro

Scientific output (2000-2002): 318 published papers, 215 papers in proceeding volumes, 120 lectures/seminars

Technical and managerial experience (2000-2002): 60 patents, 55 internal grants and projects, 6 international grants

International cooperation: France, Germany, USA, Canada, Japan, Finland, Russia, Italy, Greece,

Great Britain, Switzerland, Belgium, Slovenia, Czech Republic, Kazakhstan, Turkey, Poland



RESEARCH TOPICS

• NEW SYNTHETIC POLYMERS

New monomers and intermediates

New synthesis techniques of macromolecular compounds

Polymers with special properties and applications

• CHEMICAL MODIFICATION OF NATURAL POLYMERS. BIOACTIVE AND BIO-COMPATIBLE POLYMERS

New techniques of chemical modification of natural polymers

Vegetable biomass uses

Bioactive polymers and copolymers, polymer-drug conjugates, blends and composites from natural and synthetic polymers

• POLYMER CHARACTERIZATION. SOLUTION AND SOLID STATE PROPERTIES. COMPATIBILITY

Polymer solutions, functional (co)polymers, polymers in solvent mixtures, ultrahigh molecular weight polymers, flexible/hard polymers

Monomer and polymer structure, (co)polymer morphology, polymeric materials: mechanical, electrical, thermal properties

• ENVIRONMENT PROTECTION AND ENERGY CONSERVATION

Clean energy sources

Soil protection and increase of agricultural output

Water purification, reducing of eutrophication

Reuse of polymer wastes by destructive and non-destructive methods

Control of the "life time" of polymeric materials

European priorities

Highest national level

SCIENTIFIC OUTPUT (2000-2002)

• Published papers:

273 in international journals

45 in national journals

• Books: 3 (Marcel Dekker Inc., New York; Editura Academiei, RAPRA London)

• Papers in proceedings volumes:

15 at international meetings

200 at national meetings

• Lectures/seminars:

40 abroad

80 at national meetings

• Contributions at scientific meetings:

150 at international meetings

220 at national meetings

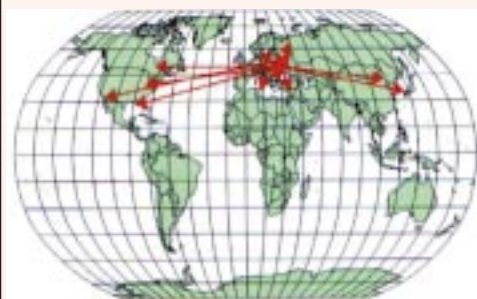
• Doctoral Theses: 18 (3 in co-operation)

INTERNATIONAL CONNECTIONS

□ European countries: France, Germany, Great Britain, Finland, Russia, Italy, Greece, Switzerland, Belgium, Slovenia, Czech Republic, Poland

□ United States of America, Canada

□ Japan, China



FELLOWSHIPS FROM:

French Foreign Affairs Ministry, French Education and Research Ministry, Deutsche Akademische Austauschdienst, Humboldt Foundation, National Science Foundation, Royal Society, Japanese Agency for Industrial Science and Technology, a.s.o.

TECHNICAL AND MANAGERIAL EXPERIENCE (2000-2002)

• PATENTIS and patent applications: 60

• PROJECTS/GRANTS:

- International: 6 (GROWTH, INTAS, NSF, DFG)

- National: 55 (CERES, MATNATECH, BIOTECH, ORIZONT, GAR, ANSTI, CNC-SIS)

• SMALL SCALE PRODUCTION:

- value: 6 billions lei

- number of main products: 12

- customers: 50 (ELECTROPUTERE CRAIOVA, PETROMAR CONSTANTA, IASSY-FARM, "CANTACUZINO" INSTITUTE, ARTROM SLATINA, FORADEX BUCURESTI, OLTCHIM RM. VALCEA, DACIA PITESTI a.s.o.)

FP6 INTENTIONS

□ Polymers for nanoapplications: preparation of biocompatible and biodegradable synthetic polymers; preparation of fluorophore functionalized biopolymers and fluorescence studies of the self-organization in solution; photo- and pH-responsive amphiphilic ionic/nonionic copolymers, prospect in the formation of nanostructures

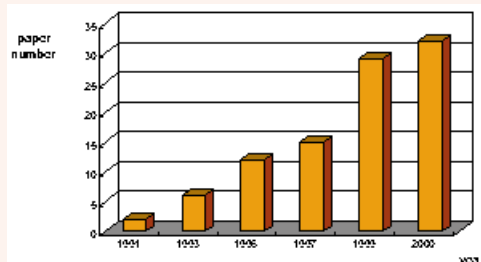
□ Nanosystems based on synthetic and natural polymers or complexes: nanoparticles, nanocapsules, nanospheres, nanolayers for controlled drug delivery or enzyme/cells immobilization

□ Analysis and characterization of nanoparticles: size and size distribution (gels, afm, xps), charge (capillary electrophoresis, zeta-potential measurements), surface (sem, esca), stability, biocompatibility

□ Interactions of biopolymers or biopolyelectrolytes at nanoscale level

□ Development of uv-laser ablation polymers, photochromic elastomers, novel 1c ionic polymer architectures, alignment properties of some polymeric layers

COMMON PUBLICATIONS WITH FOREIGN PARTNERS - GENERAL TREND



TRADITIONAL PARTNER: FRANCE - Growth, COST-BECCO, Socrates, Brancusi - six proposals in September 2002, five "co-tutelle" doctoral theses

OTHER PREFERRED PARTNERS:

GERMANY, RUSSIA, TURKEY