

CONFERENCE 2011

Dynamics of Complex Fluids



**"Petru Poni" Institute of Macromolecular Chemistry
of Romanian Academy
Iași, ROMANIA
May 5-7, 2011**



Conference Chair Persons: Acad. Bogdan C. Simionescu
Prof. Maria Lungu
Dr. Magdalena Aflori

Organizing Committee: Dr. Maria Bercea
Dr. Simona Morariu
Dr. Diana Ciolacu
Dr. Raluca-Nicoleta Darie
Dr. Loredana-Elena Niță
Dr. Mariana Cristea
Dr. Mihaela-Adriana Olaru
Drd. Cristina-Eliza Brunchi

Organized by

ROMANIAN SOCIETY OF RHEOLOGY

<http://reologie.ro>

European Social Fund – "CRISTOFOR I. SIMIONESCU" Postdoctoral Fellowship Programme (POSDRU/89/1.5/S/55216), Sectoral Operational Programme Human Resources Development 2007–2013

<http://www.postdoc-icmpp.ro/index.html>

"PETRU PONI" Institute of Macromolecular Chemistry

<http://www.icmpp.ro/>

ROMANIAN CHEMICAL SOCIETY

<http://www.schr.org.ro>

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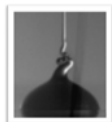


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**„Cristofor I. Simionescu” Postdoctoral Fellowship Programme**

Project co-financed by **European Social Fund**, Sectoral Operational Programme Human Resources Development 2007 – 2013

Priority Axis 1: Educational and professional training to support economical growth and development of the knowledge-based society

Major domain 1.5: Doctoral and Postdoctoral Fellowship Programmes intended to support research

Contract: **POSDRU/89/1.5/S/55216**

Beneficiary: **“Petru Poni” Institute of Macromolecular Chemistry of Romanian Academy, Iași**

Consortium

- ✓ "Gh. Asachi" Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection; contact: Prof. Nicolae Hurduc
- ✓ “Nicolae Simionescu” Institute of Cell Biology and Pathology, Bucharest; contact: Acad. Maya Simionescu
- ✓ Fundamental and Advanced Technical Research Centre of the Romanian Academy, Timisoara; contact: Dr. Ladislau Vekas
- ✓ Institut Européen des Membranes (CNRS / École Nationale Supérieure de Chimie Montpellier Université Montpellier-II), Montpellier, France; contact: Dr. Mihail Barboiu
- ✓ Centre of Polymer and Carbon Materials, Zabrze, Poland; contact: Dr. Andrzej Dvorak

Objectives and activities

Research in biomaterials represents a national and European priority (hot area), whose approach requires an interdisciplinary cooperation between chemistry, biology, physics, (bio)materials science, medicine, informatics and an exceptional and expensive research infrastructure, as well as a critical mass of highly trained researchers. The main objective of the project is to train, for three years, 40 young researchers having obtained the PhD degree in the preparation, investigation (structure – properties – application), characterization and use of biomaterials. A second objective consists in increasing the attractiveness of research/innovation career for young PhD researchers through the facilities offered by the project (post-doctoral fellowships, free access to an outstanding research infrastructure, training courses, short trainings in specialized European laboratories, financial support for attending international symposia/congresses). Last but not least, the project will increase – through publications in highly specialized journals – the visibility of Romanian research on the international scientific scene.

The proposed objectives will be attended through a clear set of activities:

- ✓ Project management
- ✓ Preparation of postdoctoral program and of the scientific curricula
- ✓ Selection of postdoctoral fellows
- ✓ Scientific coordination
- ✓ Research, development and innovation activities stated in the postdoctoral projects
- ✓ Interdisciplinary specialization through national and international stages
- ✓ Participation to national and international scientific events
- ✓ Organization of the scientific/technical training sessions of the postdoctoral fellows
- ✓ Organization of (research) management and entrepreneurial culture courses for the researchers

Contact: Acad. Bogdan C. Simionescu, project coordinator (bsimion@icmpp.ro)



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Deputy directors:

Dr. Anton Airinei, E-mail: airinea@icmpp.ro

Dr. Valeria Harabagiu, E-mail: hvaleria@icmpp.ro

The "Petru Poni" Institute of Macromolecular Chemistry, founded in 1949, is an institute of excellence of the Romanian Academy and concentrates on basic and applied research in polymer chemistry and physics.

The main **research interests** of the Institute are directed to:

- (i) New synthetic polymers (silicon-based monomers and polymers; functional polymers; heteroatomic monomers and polymers, thermally stable and flame resistant polymers; linear and non-linear polyelectrolytes; polyurethanes);
- (ii) Chemical modification of natural polymers (cellulose and lignin modification; high added value polymeric materials issued from biomass);
- (iii) Bioactive and biocompatible polymers;
- (iv) Solution and solid state properties of multicomponent systems;
- (v) Environment protection and energy conservation.

Periodically, the main topics are updated according to the emerging research trends connected to the "hot" scientific areas.

Last years, new research topics – inspired mainly from the third priority of 6th FP – were introduced in the research programmes of the Institute. They focused on

- (i) multicomponent and multifunctional polymeric systems based on natural and synthetic polymers, with targeted application as drug delivery systems, bioseparators and biosensors or bioactive compounds,
- (ii) thin films and nano-sized materials directed toward UV/laser ablation, optoelectronic and electro-optic devices, lithography or thermally resistant membranes,
- (iii) multiresponsive polymeric materials that are either obtained by or used for eco-friendly processes.

The Institute employs 284 people including about 110 researchers and 55 PhD students. The Institute portfolio contains more than 1500 scientific papers published the last ten years (most of them in international journals) and over 100 projects achieved in cooperation with partners from abroad.

Main equipments: Elemental analyser (C, H, N, S), NMR 400 MHz, FTIR, UV-VIS, fluorescence spectrometer, GPC, wide angle X-ray diffractometer, optical, electronic (TEM, SEM) and atomic force (AFM) microscopes, thermal and thermomechanical analysers (TGA, DSC, DMA), rheometers, automatic viscometers, nanosizer, mastersizer, LC-Q tof, dielectric spectrometer.





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The conference *Dynamics of Complex Fluids* represents the 4th event within the series of meetings organized by Romanian Society of Rheology (SRR). The aim of this conference is to get-together specialists interested in Flow and Design of Complex Fluids from Romania and abroad. Also, the conference is an opportunity for Romanian post-doctoral students who are interested to develop scientific research in the area of complex fluids design and rheology.

Romanian Society of Rheology is a scientific society founded on 9th April 2009 by a Romanian group promoting excellence in the field of rheology. The Society of Rheology counts 65 members – chemists, engineers, physicists, mathematicians and biologists – interested in advancing and applying **rheology**, which is defined as the science of deformation and flow of matter. The goal of this society is to promote the research in the field of rheology by supplying information and offering opportunities for cooperation among scientists and engineers with any interest in rheology.

SRR is integrated in the European Society of Rheology (<http://www.rheology-esr.org>).



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Romanian Chemical Society (RCS) was established on January 27, 1919. The envisaged mission of the Society is to gather and concentrate the efforts of all those involved in one way or another in chemistry in order to organise and carry out national and international conferences, seminars and various debates on fundamental and applied chemistry and also to represent the interests of this outstanding professional “guild”.

Starting from 1998, The Romanian Chemical Society has been involved successfully in a series of International Conferences of South-Eastern European Chemical Societies (ICOSECS), which take place every two years in one of the above member countries. RCS has organised the third conference in 2002 in Bucharest, more than 650 participants attending it, being appreciated as a leader in imposing superior standards in organising these series of conferences. Later on, RCS has organised and sponsored the participation of Romanian scientists, members of the Society to ICOSECS-4 (Belgrad-2004), ICOSECS-5 (Ohrid-2006), ICOSECS-6 (Sofia-2008).

In 1996, the RCS was accepted as a full rights member by the Federation of the European Chemical Societies (FECS) and since 2001 has participated regularly to its activity.





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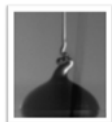


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CONFERENCE SCHEDULE

Thursday, 5 May 2011

- 8.00 – 9.00 Registration
9.00 – 9.30 Opening Ceremony
9.30 – 10.15 Plenary Conference (CP 1)
10.15 – 11.00 Plenary Conference (CP 2)
11.00 – 11.30 Coffee Break
11.30 – 13.00 Visit of “Petru Poni” Institute of Macromolecular Chemistry of
Romanian Academy

13.00 – 14.00 Lunch

14.00 – 14.45 Plenary Conference (CP 3)
14.45 – 15.30 Plenary Conference (CP 4)
15.30 – 16.00 Coffee Break
16.00 – 17.20 Oral Presentations (OP 1 – OP 4)
17.20 – 18.50 Posters Session

19.00 Conference Dinner

Friday, 6 May 2011

- 9.00 – 9.45 Plenary Conference (CP 5)
9.45 – 10.30 Plenary Conference (CP 6)
10.30 – 11.00 Coffee Break
11.00 – 13.00 Oral Presentations (OP 5 – OP 10)

13.00 – 14.00 Lunch

14.00 – 18.00 Round Table

Saturday, 7 May 2011

- 9.00 – 10.00 Closing Remarks
10.00 – 18.00 Round Table

The profile of the Conference includes:

- Plenary Conferences (45 minutes)
- Lectures (20 minutes)
- Poster Communications

Conference Language is **English**.



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Thursday, 5 May 2011

9.00 – 9.30 Opening Ceremony

Prof. Maria Lungu - President of the Romanian Society of Rheology
Dr. Magdalena Aflori - Dissemination Responsible of „Cristofor I. Simionescu”
Postdoctoral Fellowship Programme

9.30 – 11.00 Chairs: **Dr. Tatiana Budtova, Prof. Corneliu Balan**

CP 1. *Intrinsic viscosities of polyelectrolytes in the absence and in the presence of salt*
Bernhard A. Wolf

Institut für Physikalische Chemie der Johannes Gutenberg-Universität Mainz and
Materialwissenschaftliches Forschungszentrum der Universität Mainz, Germany

CP 2. *Elasticity of hydroxypropylcellulose solutions*

Patrick Navard¹, Maria Bercea²

¹ Mines ParisTech, Centre de Mise en Forme des Matériaux UMR CNRS/Ecole des Mines de
Paris, Sophia-Antipolis, France

² "Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania

11.00 – 11.30 Coffee Break

11.30 – 13.00 Visit of “Petru Poni” Institute of Macromolecular Chemistry

13.00 – 14.00 Lunch

14.00 – 15.30 Chairs: **Prof. Bernhard A. Wolf, Dr. Ladislau Vekas**

CP 3. *New trends in magnetic field-responsive complex fluids*

Alain Ponton

Laboratoire Matière et Systèmes Complexes (MSC), UMR 7057 CNRS et Université Paris
Diderot-Paris7, France

CP 4. *Role of water in cellulose-ionic liquid solutions: a rheological study*

Kim Anh Le, Romain Sescousse, **Tatiana Budtova**

Mines ParisTech, Centre de Mise en Forme des Matériaux UMR CNRS/Ecole des Mines de
Paris, Sophia-Antipolis, France

15.30 – 16.00 Coffee Break



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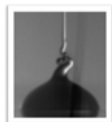
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16.00 – 17.20 Chairs: **Dr. Patrick Navard, Prof. Diana Broboana**

OP 1. *Magnetizable complex fluids: Design of magnetic and magnetorheological properties through composition*

Daniela Susan-Resiga^{1,3}, Oana Marinica², **Ladislau Vékás**³

¹Faculty of Physics, West University of Timisoara, Timisoara, Romania

²National Center for Engineering of Systems with Complex Fluids, Politehnica University of Timisoara, Timisoara, Romania

³Center for Fundamental and Advanced Technical Research, Romanian Academy-Timisoara Branch, Timisoara, Romania

OP 2. *Non-linear behaviour of complex fluids studied by Large Amplitude Oscillatory Shear (LAOS)*

Loredana Mirela Pop, Heiko Stettin, Jörg Läuger

Anton Paar Germany GmbH, Ostfildern / Germany

OP 3. *Complex fluids with yield surface*

Sanda Cleja Tigoiu, Victor Tigoiu

Faculty of Mathematics and Computer Science, University of Bucharest, Romania

OP 4. *Viscometric and rheological behavior of progressively quaternized poly(dimethylaminoethyl methacrylate) as a function of charge density*

Ionel Adrian Dinu¹, Maricel Danu¹, Constanța Ibănescu^{1,2}, Ecaterina Stela Drăgan¹

¹“Petru Poni” Institute of Macromolecular Chemistry, Iasi, Romania

²Faculty of Chemical Engineering and Environmental Protection, “Gh. Asachi” Technical University, Iasi, Romania

17.20 – 18.50 Posters Session

19.00 Conference Dinner

Friday, 6 May 2011

9.00 – 10.30 Chairs: **Prof. Alain Ponton, Dr. Ecaterina Stela Dragan**

CP 5. *New rheology of complex fluids characterized by non-monotonous flow curve*

Diana Broboana, Daniela Coblas, **Corneliu Balan**

Polytechnica University, REOROM Laboratory - BIOINGTEH, Bucharest, Romania

CP 6. *Further consideration of dynamic mechanical analysis applied to soybean oil-based polyurethane*

Mariana Cristea¹, Daniela Ionita¹, Stefan Oprea¹, Bogdan C. Simionescu^{1,2}

¹“Petru Poni” Institute of Macromolecular Chemistry, Iasi, Romania

²“Gh. Asachi” Technical University, Department of Natural and Synthetic Polymers, Iasi, Romania

10.30 – 11.00 Coffee Break



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11.00 – 13.00 Chairs: **Prof. Maria Lungu, Dr. Loredana Pop**

OP 5. *The influence of the surfactant layer thickness on the rheological properties of magnetic nanofluids*

V. Socoliuc^{1,2}, A. Taculescu^{2,3}, D. Susan-Resiga^{2,4}, O. Marinica⁵, C. Daia², L. Vekas²

¹“Petru Poni” Institute of Macromolecular Chemistry, Iasi, Romania,

²Center for Fundamental and Advanced Technical Research, Romanian Academy-Timisoara Branch, Timisoara, Romania

³Faculty of Industrial Chemistry and Environmental Engineering, „Politehnica” University of Timisoara, Romania

⁴Faculty of Physics, West University of Timisoara, Romania

⁵National Center for Engineering of Systems with Complex Fluids, „Politehnica” University of Timisoara, Romania

OP 6. *Rheological properties of hydrogels based on cellulose allomorphs*

Diana Ciolacu¹, Stelian Sergiu Maier²

¹“Petru Poni” Institute of Macromolecular Chemistry, Iasi, Romania

²“Gh. Asachi” Technical University, Iasi, Romania

OP 7. *Hydrodynamic properties of some cationic amphiphilic polysaccharides in dilute and semi-dilute aqueous solutions*

Magdalena Cristina Stanciu, Marieta Nichifor, Luminita Ghimici

“Petru Poni” Institute of Macromolecular Chemistry, Iasi, Romania

OP 8. *Novel multi-stimuli responsive sodium alginate-grafted-poly(N-isopropylacrylamide) copolymers II. Dilute solution properties*

Cornelia Vasile, **Loredana Elena Nita**

“Petru Poni” Institute of Macromolecular Chemistry, Iasi, Romania

OP 9. *Stretching flow for a subclass of Oldroyd's type fluids*

Corina Cipu¹, **Carmen Pricina**², Victor Tigoiu³

¹Polytechnic University of Bucharest, Bucharest, Romania

²Romanian American University, Bucharest, Romania

³Faculty of Mathematics and Computer Science, University of Bucharest, Romania

OP 10. *Simulation of electrokinetic phenomena in nano-channel with complex fluid*

Mehdi Mostofi¹, Davood D. Ganji², Mofid Gorji-Bandpy³

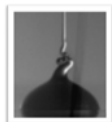
¹Islamic Azad University, East Tehran Branch, Tehran, Iran

²Babol Noshiravani University of Technology, Babol, Iran

³Babol Noshiravani University of Technology, Babol, Iran

13.00 – 14.00 Lunch

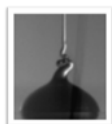
14.00 – 18.00 Round Table

**POSTERS SESSION**

- PP 1. *The rheological behavior of freeze-thawed hydrogels based on polyacrylamide and dextran sulfate*
Maria Valentina Dinu¹, Maria Marinela Perju¹, Ecaterina Stela Drăgan¹, Mandy Mende², Simona Schwarz²
¹"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
²Leibniz Institute of Polymer Research Dresden e. V., Dresden, Germany
- PP 2. *Viscoelastic behavior of the aged and non-aged LDPE/feather composites*
Raluca Nicoleta Darie, Iuliana Spiridon
"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
- PP 3. *Polyethylene/ softwood kraft pulp fibres composites*
Raluca Nicoleta Darie, Anamaria Sdrobiș, Marian Totolin, Georgeta Cazacu, Cornelia Vasile
"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
- PP 4. *Synthesis and characterization of new hydrogels based on green polymers*
Diana Ciolacu, Georgeta Cazacu, Maria Cazacu
"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
- PP 5. *Plasma treatments influence on polyester films surfaces for collagen immobilization*
M. Drobotă¹, I. Stoica¹, D. Dimitriu², **M. Aflori**¹
¹"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
²Faculty of Physics, "Al. I. Cuza" University of Iasi, Romania
- PP 6. *The magnetic field effect upon the preparation of an interpenetrated structure based on poly(aspartic acid), poly(ethylene glycol) and collagen*
Loredana Elena Nita, Aurica P. Chiriac, Maria Bercea, Iordana Neamtu
„Petru Poni” Institute of Macromolecular Chemistry, Iasi Romania
- PP 7. *Possibilities for the preparation of a network based on 2 - hydroxyethyl methacrylate and a comonomer with spiroacetal moiety*
Aurica P.Chiriac, **Loredana Elena Nita**, Manuela T. Nistor
"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
- PP 8. *Comparative analysis of relaxation phenomena of PMMA using tension and bending mode*
Daniela Ionita, Mihaela Sillion, Mariana Cristea, Bogdan C. Simionescu
"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
- PP 9. *Gelation of laponite dispersions in presence of poly(ethylene oxide)*
Simona Morariu
"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
- PP 10. *Rheology of some hydrolysed starch-g-PAN copolymers as a function of the synthesis conditions*
Diana Felicia Apopei, Marcela Mihai, Ecaterina Stela Dragan
"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
- PP 11. *The rheological behavior of some thermoreversible hydrogels based on polyurethane*
Luiza Madalina Gradinaru¹, Constantin Ciobanu¹, Stelian Vlad¹, Maria Bercea¹, Marcel Popa²
¹"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
²"Gh. Asachi" Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection, Iasi, Romania



- PP 12. *Polyurethanes for sustained release of drug*
Mihaela Mandru¹, **Luiza Gradinaru**², Maurusa-Elena Ignat², Marcel Popa¹, Constantin Ciobanu²
¹"Gh. Asachi" Technical University of Iasi, Faculty of Chemical Engineering and Environmental Protection, Iasi, Romania,
²"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
- PP 13. *Rheological behaviour of some adhesive dispersion based on modified polychloropren*
Laurenția Alexandrescu¹, Mihut Marian², Minodora Leca²
¹Research Development National Institute for Textile and Leather –Division Leather and Footwear Research Institute, Bucharest, Romania
²University of Bucharest, Faculty of Chemistry, Bucharest, Romania
- PP 14. *Novel procedure to measure viscosity and surface tension of pure viscous and weakly elastic viscous fluids*
Raluca Isvanca, Cristina Zota, Catalin Mihai Balan, Corneliu Balan
Polytechnica University, REOROM Laboratory - BIOINGTEH, Bucharest, Romania
- PP 15. *Interrelation between thermodynamic and rheological parameters of polyelectrolytes/mixed solvents systems*
Anca Filimon, Ecaterina Avram, Silvia Ioan
"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
- PP 16. *Numerical investigation into heat transfer enhancement of non-Newtonian nanofluid in a microchannel considering variable thermal properties*
Ali Esmailnejad, Habib Aminfar
Department of Mechanical engineering, University of Tabriz, Tabriz, Iran
- PP 17. *Rheological behavior of refined rapeseed oil*
Ioana Stanciu
University of Bucharest, Bucharest, Romania
- PP 18. *Hydrogen bonding contribution on the transition from the unentangled-entangled regime in semidilute solution of cellulose acetate phthalate*
Adina-Maria Dobos, Mihaela Onofrei, Nicolae Olaru, Liliana Olaru, Silvia Ioan
"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
- PP 19. *Effect of dianhydride flexibility on viscous-elastic transition of some polyimide blends*
Simona-Luminta Nica, Camelia Hulubei, **Andreea Irina Cosutchi**, Silvia Ioan
"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
- PP 20. *Rheology of shear thinning quaternized polysulfone solutions*
Raluca Marinica Albu, Ecaterina Avram, Iuliana Stoica, Silvia Ioan
"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
- PP 21. *Solution properties of polysulfones with triphenylphosphonium chloride pendant groups*
Luminita-Ioana Buruiana¹, Ecaterina Avram¹, Adriana Popa², Silvia Ioan¹
¹"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania
²Chemistry Institute of Romanian Academy, Timisoara, Romania



- PP 22. *Rheological properties of copolyester aqueous dispersions based on chemical recycled pet bottle wastes for coating applications*
Cornelia Ilie¹, Stela Iancu², Monica Duldner², Dan F. Anghel¹, Teodora Staicu³, Marian Micutz³
¹Department of Colloids, “Ilie Murgulescu” Institute of Physical Chemistry, Bucharest, Romania
²National Institute of Chemical and Petrochemical Research and Development - ICECHIM, Bucharest, Romania
³Department of Macromolecules, Faculty of Chemistry, Bucharest University, Bucharest, Romania
- PP 23. *The influence of drug–polymer interactions on solubility of non-steroidal anti-inflammatory drugs: microstructure and rheology correlation*
Cornelia Ilie¹, Monica E. Maxim¹, Teodora Staicu², Dan F. Anghel¹, Marian Micutz²
¹Department of Colloids, “Ilie Murgulescu” Institute of Physical Chemistry of the Romanian Academy, Bucharest, Romania
²Department of Molecules, Faculty of Chemistry, Bucharest University, Bucharest, Romania
- PP 24. *Viscoelastic properties of Prunus sp. gums in aqueous systems*
Gina Amarioarei¹, Iuliana Spiridon², Maria Lungu¹, Maria Bercea²
¹“Gheorghe Asachi” Technical University, Faculty of Chemical Engineering and Environmental Protection, Natural and Synthetic Polymers Department, Iasi, Romania
²“Petru Poni” Institute of Macromolecular Chemistry, Iasi, Romania
- PP 25. *Synthesis of new cationic pullulan derivatives and its aqueous solution behaviour*
M. Constantin, I. Oanea, G. Fundueanu, V. Harabagiu
“Petru Poni” Institute of Macromolecular Chemistry, Iasi, Romania
- PP 26. *Influence of the β -cyclodextrin content on the rheological properties of the poly(vinyl alcohol) hydrogels*
Oana-Maria Păduraru, Cornelia Vasile, Cătălina Cheaburu
“Petru Poni” Institute of Macromolecular Chemistry, Iasi, Romania
- PP 27. *Evaluation of the viscosity of polymer solutions by using classical and new approaches*
Cristina-Eliza Brunchi
“Petru Poni” Institute of Macromolecular Chemistry, Iasi, Romania
- PP 28. *A compared study between polyurethanes and polyurethane-ureas with dibenzyl structures*
Elena Scortanu, **Cristina Prisacariu**
“Petru Poni” Institute of Macromolecular Chemistry, Iasi, Romania
- PP 29. *Rheological characteristics of some polymer systems used as vehicles for cosmetic and household actives*
Andrei Rosu¹, Constanta Ibanescu¹, Maricel Danu², Maria Lungu¹
¹„Gheorghe Asachi” Technical University, Iasi, Romania,
²“Petru Poni” Institute of Macromolecular Chemistry, Iasi, Romania
- PP 30. *Propagation of strong spherical converging detonation waves in self-gravitating gas*
P.K.Gangwar, Neeraj Rathore
Department of Physics, Bareilly College, Bareilly, India