The 14th International Symposium on Cellulose Chemistry and Technology
September, 8-10, Iasi, Romania

The 14th International Symposium on Cellulose Chemistry and Technology, held on September 8-10, 2010, in Iasi, Romania, has been dedicated to the memory of Cristofor I. Simionescu, founder of the Romanian school of pulp, paper and fibers, on the occasion of his 90th birthday celebration.

The first symposium was organized by Cristofor I. Simionescu in 1961, being followed by other 13 events, gathering along the years numerous scientists from Romania and abroad. At the same time, professor Cristofor I. Simionescu, together with famous scientists working in this field, founded the international journal *Cellulose Chemistry and Technology*.

Particularly in recent years, the studies devoted to natural resources have been approached within a larger frame, as due to the possibilities they provide to sustainable development. Under these conditions, the pulp and paper industry can be considered as the only branch meeting this criterion. At present, there is an increased interest to integrate this field in the concept of biorefining. In this way, the complex processing of biomass, including pulp and paper industry can be assured, along with environmental compatibility. On the other hand, the global climatic changes we are now witnessing require special measures for forest protection and for exploiting other renewable resources, such as annual plants or fast growing tree species, apart from increasing the degree of waste paper recycling. Scientists are especially concerned with developing different other applications for the main and secondary compounds of biomass, along with opening up new research directions for obtaining biofuels, biopower, biobased chemicals and high-tech materials based on natural raw products. The concepts of Green Chemistry and White Biotechnology were developed as teaching and research activities – at present, they also involve our field. Some results obtained in the last years are ready to be developed and applied at pilot or industrial scale.

All these aspects were debated in the papers presented at this symposium (see the attached program). The Proceedings of the Symposium are available at: thmalu@tuisi.ro.

Valentin I. Popa
Chairman of the Organizing Committee
THE 14th INTERNATIONAL SYMPOSIUM ON CELLULOSE CHEMISTRY AND TECHNOLOGY

In memoriam Academician Cristofor I. Simionescu

PROGRAMME

IAŞI – ROMANIA, September 8-10, 2010

Bioresources. Biocomposites
Chairman Prof. Valentin I. Popa

1. Study of plant biomasses used for production of biofuel
   M. Ioelovich

2. Novel Aspects of Nano-Cellulose
   Kay Hettrich, Bert Volkert

3. Destruction of cellulose derivatives in solution in the presence of ascorbic acid
   Juris Zoldners, Tatiana Kiseleva

4. Effect of two fungal strains of Coprinellus disseminatus SH-1 NTCC-1163 and SH-2NTCC-1164 on pulp refining and mechanical strength properties of wheat straw soda-AQ pulp
   C. H. Tyagi, Shalini Singh and Dharm Dutt

5. Characterization of grape seeds aqueous extract and possible application in biological systems
   Ioana Ignat, Alina Stingu, Irina Volf and Valentin I.Pop

6. Morphological and thermal study on wood decay by Chaetomium globosum
   Carmen-Mihaela Popescu, Cornelia Vasile

7. Theoretical study of the inclusion process of 5-flucytosine with β-cyclodextrin by semi-empirical method PM3
   Adrian Fifere, Narcisa Marangoci, Nicusor Fifere, Mariana Pinteala

Natural and synthetic polymers
Chairman: Dr. Irina Volf

8. Comparative study on the adsorption of copper(II) from aqueous solutions using different types of non-wood lignins
   Tatiana Todorciuc, Laura Bulgariu and Valentin I. Popa
9. Novel cellulose-xanthan hydrogels for biomedical applications
Diana Ciolacu

10. Lignin grafting with fatty acids during cold plasma conditions
Oana Chirila, Marian I. Totolin, Cornelia Vasile and Georgeta Cazacu

11. Synthesis and characterization of novel semi-interpenetrating polymer network hydrogels based on polyacrylamide and dextran
Maria Valentina Dinu, Maria Marinela Perju, Maria Cazacu, Ecaterina Stela Dragan

12. The effect of enzymatic degradation on the thermo-mechanical behavior of lignin-polyurethane polymer systems
Leonard Ignat, Maurusa Ignat, Elena Stoica, Constantin Ciobanu, Valentin I. Popa

**Paper recycling**
Chairman: Prof. Elena Bobu

13. Use of novel NIR hyperspectral imaging sensor system for sorting of recovered paper
Daniel Sandu

14. Impact of recovered paper quality on recycled pulp properties
Alina Iosip, Raluca Nicu, Florin Ciolacu, Elena Bobu

15. A new concept including the direct coupling between flotation of recovered paper and biorefinery process for packaging paper production
Constanze Seidemann, Tobias Brenner, Adrian Manoiu

16. Impact of unusable materials content from recovered paper on recycling process effectiveness.
Elena Bobu, Cristian Banarie, Paul P. Obrocea, Florin Ciolacu, Dan Gavrilescu

17. Comparative environmental impact assessment of different types of corrugated base papers
Alina Iosip, Mercedes Hortal Ramos, Antonio Dobón, Elena Bobu

18. Evaluation of potential source of raw materials/ secondary materials (recovered paper) of the paper sector in Romania and analysis of legislative frame
Constantin Chiriac, Boris Andronic, Eva Cristian, Gheorghe Cazan, Cristian Mormocea, Valentina Scarlet

**Innovative processes and materials in pulp and paper making**
Chairman: Prof. Dan Gavrilescu

19. Effect of residual enzyme on effluent load during biobleaching of kraft-AQ pulp of A. Cadamba by crude xylanases from *Coprinellus disseminatus* MLK-03
Dharm Dutt, Mohan Lal and C. H. Tyagi

20. The improvement of delignification ratio and yield in alkaline sulfite pulping
Esat Gumuskaya and Emir Erisir

21. Properties of *Brassica napus* fibers
Bogdan Marian Tofanica, Elisa Cappelletto, Klaus Mueller, Dan Gavrilescu

22. Kraft pulping of softwood using phosphonates as additives
Gheorghe Dutuc, Alexandru Botar, Dan Gavrilescu, Grigore Craciun, Adrian Catalin Puitel

23. Cellulosic fiber specialty packaging – a viable alternative for food protection and safety
Daniela Manea, Dan Gavrilescu, Mariana Ionescu, Gabriel Mustățea

24. Automatic line for producing mini-Jumbo and industrial rolls
Oriță Doru, Vlase Roxana, Dan Gavrilescu
25. Water based magnetic nano-colloids with controlled structure for applications in separation processes
Vlad Socoliuc, D.Bica, L.Vekas

26. Evaluation of mechanical and morphology modifications after artificial weathering of some LDPE/eucalyptus sawdust composites
Raluca Nicoleta Darie, Iuliana Spiridon

**Innovative processes and materials in pulp and paper making**
Chairman: Dr. Florin Ciolacu

27. New possibilities for recycled paper bleaching
Ivo Valchev, Petya Tseko, Ventsislav Blyahovski and Petar Bikov

28. Reduction of pollutants in paper mill effluent by aquatic plants
Ajit K. Vidyarthi, Dham Dutt and Jugmendra S. Upadhyaya

29. The efficiencies of water soluble cross-linked cationic polymers in papermaking
Mustafa Usta and Sedat Ondaral

30. Microparticle flocculation system with cationic polyacrylamide and bentonite for PCC retention and dewatering
Sedat Ondaral, Orçun Çağlar Kurtuluş and Mustafa Usta

31. The improvement of the strength and water repellency properties of different paper by using silica/wax mixture
Meryem Ondaral, Mustafa Usta and Sedat Ondaral

32. A new coating ground calcium carbonate for enhanced paper properties
Nicușor Chiriloae

33. Synthesis and characterization of n-alkyl chitosan for papermaking application
Raluc Nicu, Mihail Lupei, Florin Ciolacu, Elena Bobu, Jacques Desbriers

34. Assessing the compatibility of composite structures based on lignocellulosic fibers with the development process of plant seedlings
Petronela Nechita, Elena Dobrin, Florin Ciolacu, Elena Bobu, Maricica Burlacu

35. Preliminary tests regarding the endogenous and exogenous factors that induce books and documents degradation
Cătălina Mihaela Talasman, Constantin Stanciu, Daniela Manea, Valentin I Moise

**Innovative processes and materials in pulp and paper making**
Chairman: Dr. Petronela Nechita

36. Applications of nanoparticles in the wet-end chemistry
Dan Butaică

37. Increase of paper security rate in order to prevent counterfeit and forgery
Ion Zăpodeanu, Maricica Burlacu, Gavrîlă Ionel, Argentina Radu, Constantin Stanciu, Geta Cârâc, Rodica Dinică, Petrică Dumitru, Gherghina Aniculăseii

38. Securing element with ferromagnetic microwires
M. M. Codescu, E. Manta, E. A. Patroi, W. Kappel, F. Radulescu, Ion Zăpodeanu, Maricica Burlacu, Petronela Nechita, V. Midoni

39. Study concerning the use of compost based on primary sludge from paper making
40. General aspects concerning soil and underground water pollution at pulp and paper making

Negreanu Violeta, Ieremie Rachila, Cantea Maria, Vasile Negreanu

41. Sustainable development of the pulp and paper sector by reducing energy consumptions and rising the contribution of energy from renewable resources

Florin Scarlet, Cornel Enuș-Răduca

**Natural and synthetic polymers**
Chairman: Dr. Diana Ciolacu

42. Hyperaccumulation of cadmium in maize plant (Zea mays)

Alina Stingu, Irina Stanescu, Irina Volf and Valentin I. Popa

43. Cellulose/chondroitin sulfate hydrogels as matrices for drug delivery applications

Ana-Maria Oprea, Diana Ciolacu, Lenuta Profire, Cornelia Vasile

44. FT-IR and 2D IR Correlation Spectroscopy, Carbon-13 CP/MAS solid state NMR and X-ray diffraction spectroscopy studies on wood decay by Chaetomium globosum

Carmen-Mihaela Popescu, Maria-Cristina Popescu, Cornelia Vasile

45. Single polyelectrolyte multilayers deposited onto silica microparticles

Florin Bucatariu, Ecaterina Stela Dragan, Gheorghe Fundueanu

46. Study regarding in vitro indomethacin release from a synthetic polymeric network

Loredana Elena Nita, Aurica P. Chiriac, M. T. Pintilie, Liliana Verestiuc

47. Recovery of keratin waste by thermal treatment

Mihai Brebu, Iuliana Spiridon

**Posters**

P1. Removal of Cu(II) ions from aqueous solutions by adsorption on chitosan

Doina Asandei, Laura Bulgariu, Elena Bobu

P2. Progress in post pulp bleaching for highest brightness

Petya Tsekova, Ivo Valchev and Ventsislav Blyahovski

P3. Comparative study of flow behaviour of starch and casein adhesives in dependence of their composition

M. Karseva, V. Lasheva, G. Jeliazkova

P4. Insulating papers – theoretical, technical and technological aspects

Maria Gavriliă, Dan Gavrilescu

P5. A new concept of complex reevaluation of leather and paper wastes

Constantin Stanciu, Gabriel Zainescu

P6. Evaluation methods for the quality of electrical energy to increase energetic efficiency

Florin Scarlet, Cornel Enuș-Răduca

P7. Characteristics of tissue paper obtained in Romanian paper mills

Mihaela - Daniela Dumitran, Dan Buteică, Dan Gavrilescu

P8. Influence of some consolidation parameters on the rheological properties of graphical documents

Puiu Petrea, Florin Ciolacu, Sorin Clorică
P9. Cationic starch in papermaking
Constantin Stanciu, Petronela Nechita

P10. Bean husk used for Erythrosine B removal
Laura Carmen Apostol, Maria Gavrilescu

P11. Prognostic tools for assessment of alternative waste management scenarios
Cristina Ghinea, Maria Gavrilescu

P12. Estimating the environmental benefits of pollution prevention practices
Mădălina Petraru, Maria Gavrilescu

P13. Airlift bioreactors for treatment and management of pulp and paper mill effluents
Petronela Cozma, Maria Gavrilescu

P14. Equilibrium, thermodynamic and kinetic studies for the biosorption of aqueous cadmium(II) ions by Saccharomyces cerevisiae
Raluca Maria Hlihor, Mariana Diaconu, Maria Gavrilescu

P15. I. Synthesis and characterization in solution and in solid phase of chitosan-dextran system
Carmen Rosca, Ovidiu Novac, Gabriela Lisa, Marcel Ionel Popa

P16. II. In vitro controlled release of ciprofloxacin from dextran-chitosan based nanoparticles
Carmen Rosca, Ovidiu Novac, Gabriela Lisa, Marcel Ionel Popa

P17. The environmental behavior of pentachlorophenol in Iasi area soil
Camelia Smaranda, Adrian Puițel, Theodor Măluțan, Maria Gavrilescu

P18. Low – cost resources such as maize bran for Cu(II) ions removal
Lavinia Tofan, Carmen Paduraru, Irina Volf

P19. The modification of cellulose properties by crosslinking with siloxanes
George Stiubianu, Maria Cazacu, Carmen Racles, Alina Nicolescu, Bogdan C. Simionescu, Stelian Vlad

P20. Agents for wood bioprotection based by natural aromatic compounds and their complexes with copper and zinc
Iulian-Andrei Gîlcă, Adina-Mirela Câpraru, Silvia Grama, Valentin I. Popa

P21. Transformation of polyphenolic products from biomass by some yeast species
Anca-Roxana Hainal, Ioana Ignat, Irina Volf and Valentin I. Popa

P22. Kinetic studies of interaction between copper and lignin
Tatiana Todoricuc, Laura Bulgaru and Valentin I. Popa

P23. Kraft pulp bleaching with polioxometalates. Laboratory trials
Crăciun Grigore, Duțuc Gheorghe, Botar Alexandru, Puițel Adrian Cătălin, Dan Gavrilescu

P24. Equilibrium and kinetics study of lead (II) adsorption on algae waste
Marius Lupea, Laura Bulgaru, Dumitru Bulgaru, Matei Macoveanu

P25. Natural polymeric materials used for the removal of metal ions from aqueous solutions
Laura Bulgaru, Marius Lupea, Catalin Balan, Dumitru Bulgaru, Matei Macoveanu

P26. New geopolymers – possible models for the technology of inorganic polymers
Dumitru Bulgaru, Laura Bulgaru, Constantin Rusu

P27. „In situ” generation of biocompatible copolymers - application in environmental protection
Dumitru Bulgaru, Laura Bulgaru, Nicolae Buzgar, Feodor Filipov
P28. Functionalization of celulosic textile materials dyed with reactive dyes by treatment with AgNO₃ salts
Angela Cerempei, Emil I. Muresan, Corina Malutan, Simona Dunca, Augustin Muresan

P29. Biodegradation behaviour of some poly(vinyl alcohol) systems containing biomass derivative
Raluca Nicoleta Darie, Georgeta Cazacu, Cornelia Vasile

P30. Passive biomonitoring of atmospheric pollution with heavy metals using epigeic lichens
Ionela Mezdrea Cojocareanu Pata, Catalin Balan, Matei Macoveanu

P31. Studies upon the decontamination of polluted soils with Cd and Zn in field conditions by phytoremediation method
Paula Caraiman (Cojocaru), Matei Macoveanu, Ioan Cojocaru

P32. Evaluation of pollution by using low-cost natural sorbent
Iulian Sandu, Ionela Mezdrea Cojocareanu Pata, Matei Macoveanu

P33. Study regarding the influence of some polyphenolic compounds on UV irradiated Saccharomyces ellipsoideus cultures
Ioana Petronela Bocancea, Irina Volf, Valentin I. Popa

P34. Chemically modified guar gum as a biomaterial
Gianina Dodi, Doina Hritcu, Marcel Ionel Popa

P35. Nanoparticles based on modified lignins with biocide properties
Valentin I. Popa, Adina-Mirela Căpraru, Silvia Grama, Teodor Măluțan

P36. Application of chitosan derivatives as consolidation material in the restoration and conservation of paper documents
Elena Ardelean, Raluca Nicu, Elena Bobu

P37. Novel materials based on natural polymer with medical applications
Diana Ciolacu, Georgeta Cazacu

P38. The influence of natural polyphenolic extract in plant copper bioaccumulation
Alina Stingu, Irina Volf, Valentin I. Popa

P39. Synthesis and characterization of new catalyts for lignin oxidation
Aurel Pui, Teodor Malutan, Lucia Tataru, Corina Malutan, Doina Humelnicu, Rodica Postolachi, Gabriela Carja

P40. Electrostrictive actuation on the paper material
M. Ignat, G. Hristea, G. Zarnescu, Ion Zapodeanu, Petronela Nechita

P41. Energy storage devices based nanocomposite paper
G. Hristea, M. Ignat, Petronela Nechita, Ion Zapodeanu

P42. Inclusion compounds of monochlorotriazinyl-β-cyclodextrin grafted on paper supports
Constantin Luca, Ana-Maria Grigoriu, Narcisa Vrinceanu

P43. A comparative study concerning the adsorption of gallic acid onto polymeric adsorbents with amine functional groups
Ioana Ignat, Violeta Neagu, Ion Bunia, Carmen Paduraru, Irina Volf and Valentin I. Popa