

Scientific report of 6th International conference on Polysaccharides-Glycoscience 2010

Summary

The 6th International conference on Polysaccharides-Glycoscience 2010 was held from the 29th to 13th November, this time with the support of ESF „EuroGlycoScience Forum“. The conference became one of the activities of the new grouping, Euroglycoscience Forum and the organization Euchems. The organizers of the conference were the Czech Chemical Society and the Department of Carbohydrate Chemistry and Technology of the Institute of Chemical Technology, Prague. The Euroglycoscience Forum activities were presented with the poster, during the opening speech of Prof. Čopíková and each participant obtained leaflets describing activities and importance of this organization.

Oral presentations were divided into the following categories (sections):

1. Physiological effects of natural polysaccharides I (chairperson - Prof. Krzysztof Surówka)
2. Physiological effects of natural polysaccharides II (chairperson - Prof. Werner Praznik)
3. Isolation, characterization and analyses of polysaccharides I (chairperson - Dr. Ján Hirsch)
4. Isolation, characterization and analyses of polysaccharides II (chairperson - Prof. Jay-Lin Jane)
5. Starch and Pectin: Chemistry and Technology (chairperson - Dr. Evzen Sarka)
6. Biodegradable films and nanoparticles based on polysaccharides (chairperson - Dr. Jiri Kotek)

Overall, 20 lectures in six sections and 54 posters in two sections were presented at the conference. Authors and participants (105) were from Italy, Poland, Austria, Slovakia, USA, Australia, Turkey, Brazil, Germany, Mexico, and Czech Republic, respectively.

During the conference the competition for young scientists was organized. The three first places in oral and poster sections were financially rewarded.

Rewarded presentations of the young scientists (name of the rewarded scientist is underlined):

Lectures:

R. Kovacova, M. Mihulova, M. Širmerova, J. Stetina (ICT Prague, Czech Republic):

Influence of sugar beet pectin on emulsifying properties of whey proteins (3000 CZK)

D. Smejkalova, G.H. Angeles, R. Buffa, V. Velebny (Contipro C, Dolni Dobrouc, Czech

Republic): A novel approach for preparation of amide derivatives of hyaluronan (2000 CZK)

M. Brlejšova, M. Certik, E. Petrasikova (STU Bratislava, Slovak Republic): The study of antioxidant properties of yeast glycoproteins (1000 CZK)

Posters:

P. Liu, F. Xie, M. Li, L. Yu, P. J. Halley (University of Queensland, Melbourne, Australia): Phase transition of maize starches of different amylose/Amylopectin ratios in glycerol-water systems (3000 CZK)

T. Taubner, A. Synytsya, J. Copikova, P. Havelka (ICT Prague, Czech Republic): Hydrolysis and derivatization of oxidized cellulose (2000 CZK)

H. Kazak, Ö. Ates, F. Kucukasik, K. Y. Arga, E. T. Öner (University of Marmara, Istanbul, Turkey): Levan production by *Halomonas* sp. (1000 CZK)

All abstracts were published in Chemické listy No 9, p. 883-903 (2010); the full texts were published in the Proceedings (ISBN 978-80-86238-78-4). The letter with a request to include **Proceedings of the 6th International Conference on Polysaccharides-Glycoscience** in ISI scientific database was sent to Thomson Reuters in Philadelphia (PA 19130, USA) on 6th October 2010.

The scientific gathering was complemented by a cultural program - a concert of the Piccolo coro & Piccola orchestra in the St. Antonin church (compositions of Jan Dismas Zelenka and Johann Sebastian Bach).

The conference was included in the activity of EUCHEMS and supported by the Czech companies or the Czech branches of international companies Thermo Scientific (Nicolet CZ Ltd), Škrobárny Pelhřimov Ltd., Amylon Ltd., Maneko Ltd., SciTech Ltd., Noack CZ Ltd, ChromSpec Ltd., and Watrex Praha Ltd.; financial support from ESF EuroGlycoScience Forum is expected.

Description of the scientific content of and discussions at the event

The first key lecture in section 1 was delivered by Prof. Bezouska from the Academy of Science of the Czech Republic (AV CR) who concentrated on glycosylation alterations in the cell surface accompanying pathologic statuses such as inflammation, rheumatoid arthritis, and malignant transformations. He explained the role of recognition of highly branched *N*-linked oligosaccharides by NKR-P1 and NKG2D. These oligosaccharides are responsible for sensitivity to natural killing. On the other hand, clustered *O*-linked oligosaccharides cross-linking CD69 receptors are able to cause the apoptotic death of the activated killer lymphocytes.

Of particular interest in the 1st section of presentations was Prof. Vannucci's lecture (AV CR). The lecture touched on glycosylated structures of proteins and lipids which are functionally important in cell-cell interactions as well as in the immune recognition. Aberrant glycosylation products can be targeted by lectin-like receptors on natural immunity cells. He reported his experience with synthetic glycoconjugates and beta-glucans in the modulation of cancer recognition and anticancer responses.

The first key lecture in section 2 was delivered by Jay-Lin Jane (Iowa State University, USA). She presented health benefits of the resistant starch on glycemic and insulin responses of human subjects and reduction of colon-cancer precursor developments in animals.

In the 3rd section there were two invited lectures. Dr. Novak (ICT Prague, Czech Republic) devoted his lecture to the history of beta-glucan and his medicinal applications. According to his opinion due to a polymeric character and molecular size of beta-glucan as well as the tertiary structure inhomogeneities, frequent discrepancies were reported and accurate description of biological effects of beta-glucans is insufficient in certain details till now. Equally interesting was another plenary lecture delivered by Prof. Praznik from The University of Natural Sciences and Applied Biology in Vienna. Prof. Praznik primarily focussed on the size determination of water-soluble polysaccharide macromolecules originated from medicinal mushrooms and their structural characterization using relevant chromatographic techniques with different detection systems.

In the 4th section Dr. Kostalova (SAV, Slovak Republic) talked of properties of non-cellulosic polysaccharides in the pumpkin biomass. The fractions are rich in pectic

polysaccharides including partially esterified homogalacturonan and highly branched rhamnogalacturonan regions. Some fractions exhibit antitussive and antioxidant activities.

In the 5th section Prof. Svarovsky (FPS Institute, UK) had the chemical engineering lecture on boosting the performance of hydrocyclones by using series connections and recycles, with particular reference to wheat starch. He discussed different applications, alternative arrangements and applicable design rules with quotes of specific case studies encountered in the industry.

Prof. Spychaj (Westpomeranian University of Technology, Poland) had the last invited lecture in the 6th section. He spoke about two types of starch-based materials: extruded thermoplastic starch modified with montmorillonites (pristine and organophilized), and starch grafted acrylic copolymers synthesized *via* reactive extrusion. Physicochemical characterization of both obtained modified starches, mechanical properties of the first group of materials, as well as metal cation binding, flocculation or water sorption features of the second one, were presented.

Discussion

The first two part of the conference dealt with physico-biological effects of natural polysaccharides.

The lectures in this section were focused on the evaluation of tumor efficacy of carbohydrate oligomers and polymers, immunomodulating properties of beta-glucan, antioxidant and antitussive activity of polysaccharides together with the application of polysaccharides in the Ayuverda medicine. Results were supported by modern spectroscopic and chromatographic methods and *in-vivo* or clinic trials.

Prof. Bezouska (AV CR): Discussion concerned the selectivity of the lower and higher *N*-acetylglucosamine oligomers for their target receptors, and conditions of interaction of mouse NKR-PIC with both tumor cells and carbohydrate dimer.

Prof. Vannucci (AV CR): Discussion concerned the effects of living cells of oyster mushroom or purified beta-glucan in the simulated immune response.

Prof. Jay-Lin Jane (Ohio University): Discussion concerned the effects of amylase-fatty acid complexes both in crystalline and amorphous forms in bread on the plasma–glucose and plasma-insulin concentration.

Dr. Loeppert (BOKU): Discussion concerned the type of plant fructans which are responsible for insulin-tropic activity and hypoglycaemic effects.

Dr. Brlejova (SAV): Discussion concerned the differences between antioxidant properties of glycoproteins measured by ABTS and FRAP methods.

Dr. Leitnerova (ICT Prague): The lecture was accepted without any comments.

The third part and fourth parts of the conference dealt with isolation, characterisation and analyses of polysaccharides and beta-cyclodextrins derivatives.

The comprehensive lectures of Dr Novak and Prof. Praznik et al. were focused on development and application of analytical methods for molecular characterisation of beta-glucan from fungi.

Dr. Novak (ICT Prague): Discussion concerned the differences in the structure of fungal beta-glucan from high mushrooms and yeast and their immunomodulating properties.

Prof. Praznik (BOKU): Discussion concerned the size-exclusion chromatography of water non-soluble fractions of fungal beta-glucans.

Dr. Pupe (Federal University of Rio de Janeiro, Brazil): Discussion concerned the possibility of introduction of an inclusion complex of chlorhexidine and beta-cyclodextrin into market.

Dr. Kostalova (SAV): Discussion concerned the experience of Dr. Kostalova with ultrasound-mediated extraction of plant polysaccharides in common and her opinion if responsible for antitussive activity are polysaccharides from the pumpkin mass or contaminants as proteins and phenolic compounds.

Prof. Alamae (University of Tartu, Estonia): Discussion concerned the composition of fermentation medium, especially the content of raffinose.

Dr. Hermannova (Contipro C a.s.): Discussion concerned the degradation of hyaluronan during size-chromatography when three columns were connected in series.

Dr. Smejkalova (Contipro C a.s.): Discussion concerned the application of amide derivatives of hyaluronan as drug delivery system, which derivatives and which drugs are promising.

The fifth and sixth sections related to Starch and Pectin: Chemistry and Technology and Biodegradable films and nanoparticles based on Polysaccharides

Lectures presented in these sections were oriented technologically, with aspects of possible industrial application.

Prof. Svarovsky (FPS Institute, UK): Discussion concerned the separation efficiency of multi stages overflow series of hydrocyclones and separations centrifuges in the case of starch slurry.

Dr. Kovacova (ICT Prague): Discussion concerned explanation of reaction mechanisms between sugar beet pectin and whey proteins in dairy products.

Prof. Spychaj (Westpomeranian University of Technology, Poland): Discussion concerned the explanation of hydrogen bonds between plasticizer molecules and hydroxyl groups of polysaccharide chain on the basis of shifts of diffraction peaks.

Dr. Juszczak (University of Agriculture in Krakow, Poland): Discussion concerned the technological differences between acetylated cassava starch and wheat starch.

Dr. Da Silva (Federal University of Rio de Janeiro, Brazil): Discussion concerned anticoagulant properties of nanoparticles formed by reaction between sulphated polysaccharides and chitosan.

Prof. Duchek (University of West Bohemia, Plzen, Czech Republic): Discussion concerned the applications of nanocomposites from natural and cationized starch and hydrophilic sodium montmorillonite.

Dr. Hejlová (Czech University of Life Sciences Prague): The lecture was accepted without any comments.

Assessment of the results and impacts of the event on the future development

Carbohydrates, proteins and nucleic acids are the fundamental components of all living organisms. Glycoscience is the basic discipline and the leading idea of all Polysaccharides conferences. The 6th International conference on Polysaccharides-Glycoscience followed previous events whose aim was to gather experts and scientists working in this field. An important goal was to involve young researchers and promote an exchange of experience.

The conference was small in number of participants (about 100) which had several advantages. Firstly, the conference topics were limited and focused on the selection of scientific issues and therefore brought together people with similar research interest. Participants appreciated the possibility to discuss easily their scientific or more practical problems with deeply experienced researchers. Secondly, the participants fee 1600/2000 CZK (70/85 EUR) allowed students and young scientists to attend the conference. Finally, it was generally appreciated that time span of the three-day conference was convenient for hard working scientists. The success of the conference was reached thanks to sacrificial and voluntary activities of both scientific and organizing committees.

The participants of the conference were enabled to acquire new knowledge from glycoscience, biological properties of polysaccharides, up-to-date analytical methods, and new applications of physico-mechanical methods of polysaccharides characterisation.

Organizers of the next conference, the 7th International Conference on Polysaccharides-Glycoscience, are considering in-depth incorporation of areas such as biological and immunological properties of polysaccharides and diversification sections with topics concerning derivatives of polysaccharides with medicinal and ecological significance. The section "Polysaccharides with pharmaceutical application" is planned during the next conference in the year 2011.

Final program

**6th International Conference on
POLYSACCHARIDES-GLYCOSCIENCE**



29th September - 1st October, 2010

**Novotného lávka 5,
Prague, Czech Republic**



Czech Chemical Society



**INSTITUTE OF
CHEMICAL TECHNOLOGY
PRAGUE**



**ESF EuroGlycoSciences Forum
Research Network Programme**

29th September, 2010

16:00 – 18:00 Registration, Conference Opening (glass of wine)

VINOGRAPH - Enosfera s.r.o.
Míšeňská 68/8
118 00 PRAGUE 1 - Malá Strana

30th September, 2010

08:00 – 09:00 Registration

Novotného lávka 5
116 68 PRAGUE 1

Oral session

09:00 WELCOME
JANA ČOPIKOVÁ, *Institute of Chemical Technology, Prague, Czech Republic*

09:10 – 10:45 Oral session 1 “PHYSIOLOGICAL EFFECTS OF NATURAL POLYSACCHARIDES I”
chairman: Krzysztof Surowka

09:10 – 09:50 Keynote lecture: AVENUES OF THE CONTEMPORARY GLYCOSCIENCE: FROM GLYCOMIC TECHNOLOGIES TO DRUGS THAT ARE SWEET INSIDE AS WELL AS AT THE SURFACE
K. Bezouška
*Department of Biochemistry, Faculty of Science, Charles University Prague, Hlavova 8, 128 40 Praha 2, Czech Republic; Institute of Microbiology v.v.i., Academy of Sciences of Czech Republic, Videnska 1083, 142 20 Praha 4, Czech Republic
bezouska@biomed.cas.cz*

09:50 – 10:30 Keynote lecture: PERSPECTIVES IN CANCER TREATMENT BY A GLYCOBIOLOGICAL APPROACH: RESULTS IN EXPERIMENTAL TUMOR MODELS IN VIVO
L. Vannucci, A. Fiserova, P. Rossmann, V. Kren, P. Krist, K. Bezouska, M. Saieh, V. Ullmanova-Benson, K. Klimesova, V. Grobarova, J. Krizan, V. Sasek
*Institute of Microbiology, Academy of Sciences of the Czech Republic v.v.i., Videnska 1083, Prague 4
vannucci@biomed.cas.cz*

10:30 – 10:45 RELEVANCE OF POLYSACCHARIDES IN AYURVEDIC DRUGS
R. Loeppert, W. Praznik, M. Thakur
*RG of Plant Carbohydrates, Department of Chemistry, University of Natural Resources and Applied Life Sciences, Vienna, Austria, Zentralinstitut für Laboratoriumsmedizin und Pathobiochemie, Charité Universitätsmedizin Campus Benjamin Franklin, Hindenburgdamm, Berlin, Germany
renate.loepfert@boku.ac.at*

10:45 – 11:45 Coffee Break / Exhibition

**11:45 – 12:45 Oral session 2 “PHYSIOLOGICAL EFFECTS OF NATURAL POLYSACCHARIDES II”
chairman: Werner Praznik**

11:45 – 12:25 Keynote lecture: RESISTANT STARCH AND ITS HEALTH BENEFITS
J.-L. Jane, H. Jiang, J. Hasjim
*Department of Food Science and Human Nutrition, Iowa State University, Ames,
Iowa 50011, USA
jjane@iastate.edu*

12:25 – 12:40 RESISTANT STARCH INTAKE IN CZECH REPUBLIC
D. Leitnerová, J. Dostálová, A. Šafaříková
*Institute of Chemical Technology, Technická 5, 166 28 Prague 6, Czech Republic
dobromila.leitnerova@vscht.cz*

12:40 – 12:55 THE STUDY OF ANTIOXIDANT PROPERTIES OF YEAST GLYCOPROTEINS
M. Brlejšová, M. Čertík, E. Petrášiková
*Department of Biochemical Technology, Faculty of Chemical and Food Technology,
Slovak University of Technology, Radlinského 9, 812 37 Bratislava, Slovak Republic
marta.brlejova@gmail.com*

13:00 – 14:00 LUNCH

**14:00 – 15:15 Oral session 3 “ISOLATIONS, CHARACTERIZATION AND ANALYSES OF POLYSACCHARIDES I”
chairman: Ján Hirsch**

14:00 – 14:30 Keynote lecture: β -GLUCAN COMPOSITION AND STRUCTURE: AN EVOLUTION OF VIEWS
M. Novák
*Institute of Chemical Technology, Faculty of Food and Biochemical Technology,
Department of Carbohydrate Chemistry and Technology, Prague, Czech Republic
novaks@vscht.cz*

14:30 – 15:00 Keynote lecture: MOLECULAR MASS OF WATER/ALKALI SOLUBLE POLYSACCHARIDES FROM MUSHROOMS APPLIED IN TMC
W. Praznik, A. Huber, J. Copikova
*RG of Plant Carbohydrates, Department of Chemistry, University of Natural Resources and Applied Life Science, Vienna, Austria; CePoL/MC - Central Polymer Lab /Molecular Characteristics, IfC -Institut für Chemie, KFUniv Graz, Austria;
Department of Carbohydrate Chemistry and Technology, ICT Prague, Czech Republic
werner.praznik@boku.ac.at*

15:00 – 15:15 **PREPARATION AND CHARACTERIZATION OF INCLUSION COMPLEX FORMATION BETWEEN CHLORHEXIDINE AND β -CYCLODEXTRIN DERIVATIVES**
C. Pupe, L.C. Da Silva, A. Mattos Junior, L. Cabral
Federal University of Rio de Janeiro - UFRJ, Carlos Chagas Filho Avenue, University City, Rio de Janeiro, Brasil, 21941-902
carolinapupe@gmail.com

15:15 – 15:45 **Coffee Break**

15:45 – 17:10 **Oral session 4 “ISOLATIONS, CHARACTERIZATION AND ANALYSES OF POLYSACCHARIDES II”**
chairwoman: Jay-Lin Jane

15:45 – 16:25 **Keynote lecture: ISOLATION, STRUCTURE AND PROPERTIES OF PECTIC POLYSACCHARIDES FROM THE PUMPKIN (*Cucurbita Pepo L. var. Styriaca*)**
Z. Košťálová, Z. Hromádková, A. Ebringerová, G. Nosáľová, L. Prisenžňáková
Slovak Academy of Sciences, Institute of Chemistry, Center for glycomics, Dúbravská cesta 9, 845 38 Bratislava, Slovakia
Zuzana.Kostalova@savba.sk

16:25 – 16:40 **ISOLATION AND HIGH-THROUGHPUT SCREENING METHODS OF LEVANSUCRASE MUTANTS OF A PLANT PATHOGEN *Pseudomonas syringae* DC3000**
K. Mardo, T. Visnapuu, T. Alamäe
Institute of Molecular and Cell Biology, University of Tartu, Riia 23, 51010 Tartu, Estonia
talamae@ebc.ee

16:40 – 16:55 **AN ACCURATE DETERMINATION OF HYALURONAN MOLAR MASS AND POLYDISPERSITY**
M. Hermannova, T. Ehlova, V. Leierova, L. Trojtlerova, V. Velebny
Contipro C a.s., Dolní Dobrouč 401, 561 02 Dolní Dobrouč, Czech Republic
hermannova@contipro.cz

16:55 – 17:10 **A NOVEL APPROACH FOR PREPARATION OF AMIDE DERIVATES OF HYALURONAN**
D. Šmejkalová, G.H.Angeles, R. Buffa, V. Velebný
Contipro C a.s., Dolní Dobrouč 401, 561 02 Dolní Dobrouč, Czech Republic
smejkalova@contipro.cz

19:30 **Concert. Piccolo coro & Piccola orchestra, conductor Marek Valášek.**
Jan Dismas **Zelenka** (1679 - 1745) Te Deum.
Johann Sebastian **Bach** (1685 - 1750) Brandenburg Concerto No. 3 in G major, BWV 1048.
Johann Sebastian **Bach** (1685 - 1750) Magnificat in D.

St. Anthony Church
Strossmayerovo náměstí
170 00 PRAGUE 7

- 2.1. K. Buksa, H. Gambuś,
A. Chowaniec THE INFLUENCE OF ENZYMATIC HYDROLYSIS ON MOLECULAR MASS OF WATER SOLUBLE ARABINOXYLANS
- 2.2. K. Buksa, A. Nowotna,
M. Wierdak CHROMATOGRAPHIC ANALYSIS OF MODIFIED WATER SOLUBLE PENTOSANS
- 2.3. K. Buksa, A. Nowotna,
K. Wrońska THE INFLUENCE OF OXIDATION ON MOLECULAR MASS OF WATER SOLUBLE ARABINOXYLANS
- 2.4. M. Šutovská, S. Fraňová,
A. Togola, B. S. Paulsen,
P. Capek ANTITUSSIVE AND BRONCHODILATORY EFFECTS OF *OPILIA* POLYSACCHARIDE
- 2.5. D. Čožiková, M. Lázníček,
A. Lázníčková, V. Velebný BIODISTRIBUTION OF RADIOLABELED HIGH-MOLECULAR-WEIGHT HYALURONAN AFTER INTRAVENOUS AND ORAL ADMINISTRATION TO RATS
- 2.6. R. Dostálová, J. Horáček,
R. Trojan, I. Hasalová STUDY OF RESISTANT STARCH CONTENT IN PEAS AFTER HARVESTING TREATMENT
- 2.7. E. Klímová, P. I Macháň,
J. Ehrenbergerová,
S. Běláková, K. Vaculová VARIABILITY OF NON-STARCH POLYSACCHARIDE CONTENT IN GRAIN OF SPRING BARLEY
- 2.8. J. Hrabica, P. Kusý,
D. Šmejkalová, V. Velebný FORMATION AND ISOLATION OF ACCIDENTAL DEGRADATION PRODUCTS OF HYALURONAN ACID HYDROLYSIS
- 2.9. Z. Hromádková,
A. Ebringerová, J. Hirsch,
N. Vrchotová ISOLATION AND CHARACTERISATION OF POLYSACCHARIDES FROM THE SPELT GRAIN
- 2.10. I. Jablonský EXPERIMENTS WITH GROWING *Phellinus* spp.
- 2.11. H. Kazak, Ö. Ates,
F. Kucukasik, K. Y. Arga,
E. T. Öner LEVAN PRODUCTION BY *Halomonas* sp.
- 2.12. P. Kusý, J. Hrabica,
D. Šmejkalová, V. Velebný LC-MS CHARACTERIZATION AND IDENTIFICATION OF COMPOUNDS ORIGINATING IN AN ACID HYALURONAN HYDROLYSIS
- 2.13. E. Lhotáková, F. Kvasnička,
K. Vaculová, J. Čopíková,
A. Synytsya, M. Voldřich DISCRIMINATION OF BARLEY VARIETES BY SPECTROSCOPIC AND STATISTICAL METHODS
- 2.14. M. Marounek, Z. Volek,
E. Skřivanová, J. Tůma,
A. Synytsya EFFECT OF PALMITOYLCHITOSAN ON CHOLESTEROL HOMEOSTASIS IN RATS
- 2.15. J. Krejčová, Š. Matějková SOIL POLYSACCHARIDES AND THEIR RELATIONSHIP TO OTHER FORMS OF SOIL CARBON
- 2.16. G. Benmessaoud, B. Roge,
M. Mathlouthi EXTRACTION, PURIFICATION AND PHYSICOCHEMICAL CHARACTERIZATION OF POLYSACCHARIDES OF GREEN ALGAE (*ULVA* SP. AND *ENTEROMORPHA* SP.)
- 2.17. S. Mleko, W. Gustaw CARRAGEENAN – LOCUST BEAN GUM COMPOSITE GELS

- 2.18. *M. Tomczyńska-Mleko, S. Mleko* STRUCTURE REVERSIBILITY OF WHEY PROTEIN/I-CARRAGEENAN GELS
- 2.19. *P. Slavičková, A. Synytsya, G. K. Gomba, M. Novák, J. Čopíková* β-GLUCANS IN FOOD SUPPLEMENTS
- 2.20. *K. Surówka* THE ROLE OF CARBOHYDRATES IN THE STRUCTURE FORMATION OF THE SOY PROTEIN CONCENTRATE DURING THE EXTRUSION PROCESS
- 2.21. *T. Taubner, A. Synytsya, J. Čopíková, P. Havelka* HYDROLYSIS AND DERIVATIZATION OF OXIDIZED CELLULOSE
- 2.22. *J. Turjan, M. Drábik, P. Magdolen, J. Kozák, J. Švec, P. Capek* CHARACTERIZATION OF CELLULOSE AND ITS DERIVATIVES BY THERMAL ANALYSIS AND FT-IR
- 2.23. *K. Vaculová, M. Balounová, R. Mikulíková, K. Benešová, J. Ehrenbergerová* EFFECT OF GENOTYPE ON VARIABILITY IN THE CONTENT OF NON-STARCH POLYSACCHARIDES IN BARLEY GRAIN
- 2.24. *M. Wojtczak, A. Antczak* THE CONTENT OF DEXTRAN IN RAW CANE SUGAR AND ITS DECREASING DURING THE REFINING PROCESS
- 2.25. *I. Švec, M. Hrušková, J. Dvořáková* COMMERCIAL WHEAT ROLLS QUALITY MONITORING
- 2.26. *K. Miśkiewicz, E. Nebesny, A. Antczak, J. Gołabczak, J. Rosicka-Kaczmarek* THE EFFECT OF FLOUR SORT ON THE CARBOHYDRATE PROFILE OF FLOUR AND PASTRY
- 2.27. *M. Tsirigotis-Woloszczak, I. Pawlaczyk, W. Pilecki, R. Gancarz* POLYPHENOLIC-POLYSACCHARIDE CONJUGATES WITH ANTICOAGULANT ACTIVITY FROM *AGRIMONIA EUPATORIA* (L.): CHEMICAL CHARACTERIZATION OF THE COMPOUNDS SEPARATED WITH ANION-EXCHANGE CHROMATOGRAPHY

1st October, 2010

Novotného lávka 5
116 68 PRAGUE 1

Oral session

09:00 – 10:10	Oral session 5 “STARCH, PECTINE: CHEMISTRY AND TECHNOLOGY” chairman: Evžen Šárka
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09:00 – 09:40 **Keynote lecture: SEPARATION, THICKENING, CLASSIFICATION AND WASHING OF WHEAT STARCH WITH HYDROCYCLONES**
L. Svarovsky
FPS Institute, Bexhill-on-Sea, United Kingdom
LSvarovsky@aol.com

09:40 – 09:55 **INFLUENCE OF SUGAR BEET PECTIN ON EMULSIFYING PROPERTIES OF WHEY PROTEINS**
R. Kováčová, M. Mihulová, M. Širmerová, J. Štětina
Institute of Chemical Technology in Prague, Department of Dairy and Fat Technology, Technická 5, 166 28 Prague 6, Czech Republic
renata.kovacova@vscht.cz

09:55 – 10:10 **EFFECT OF ACETYLATION ON SOME PHYSICOCHEMICAL PROPERTIES OF CASSAVA STARCH**
L. Juszcak, T. Zięba, A. Gryszkin, S. Pietrzyk, T. Fortuna
Department of Analysis and Evaluation of Food Quality, University of Agriculture, Krakow, Poland, Department of Food Storage and Technology, Wrocław University of Environmental and Life Sciences, Poland
rrjuszcz@cyf-kr.edu.pl

10:10 – 11:10	Coffee Break / Exhibition
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11:10 – 12:35	Oral session 6 “BIODEGRADABLE FILMS AND NANOPARTICLES BASED ON POLYSACCHARIDES” chairman: Jiří Kotek
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11:10 – 11:50 **Keynote lecture: EXTRUDED THERMOPLASTIC STARCH-BASED (NANO)MATERIALS FOR TECHNICAL PURPOSES**
T. Szychaj
Polymer Institute, Westpomeranian University of Technology, 70-322 Szczecin, ul. Pulaskiego 10, Poland
Tadeusz.Szychaj@zut.edu.pl

11:50 – 12:05 **POLYSACCHARIDES BASED NANOPARTICLES: DEVELOPMENT AND CHARACTERIZATION**
L. C. Da Silva, C. Pupe, M. Assafim, B. Camarinha, K. Tavares, L. Cinelli, P. Finotelli, L. Cabral
Federal University of Rio de Janeiro - UFRJ, Carlos Chagas Filho Avenue, University City, Rio de Janeiro, Brasil, 21941-902
lulaufjr@hotmail.com

12:05 – 12:20 **HYBRID STRUCTURES BASED ON MONTMORILLONITE/MODIFIED STARCH INTERCALATE**
P. Duchek, M. Špírková
University of West Bohemia, Faculty of Mechanical Engineering, Univerzitní 20, 306 14 Plzeň; Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, Heyrovského nám. 2, 162 06 Praha 6, Czech Republic
duchekpe@kmm.zcu.cz

12:20 – 12:35 **β-GLUCAN FILMS SUBJECTED TO LOADING/UNLOADING TESTS IN TWO CYCLES**
A. Hejlová, J. Blahovec
Czech University of Life Sciences, 165 21 Praha 6, Czech Republic
hejlova@tf.czu.cz

- 2.1. *L. Duchoňová, R. Kozáková, E. Šturdík* CHARACTERISATION OF WHEAT VARIETIES FOR PURPOSES OF BREAD-MAKING UTILISATION
- 2.2. *S. Gavurníková, M. Havrlentová, A. Žofajová, M. Bielíková, J. Gubiš* ADDITION OF DIETARY FIBRE, RESISTANT STARCH AND β -D-GLUCAN TO WHEAT FLOUR AND THEIR EFFECT ON TECHNOLOGICAL QUALITY, BAKING PROPERTIES OF WHEAT DOUGHS AND BREAD QUALITY
- 2.3. *E. Gregorová, M. Chmeličková, W. Pabst* CORN STARCH AS A PORE-FORMING AGENT AND MICROSTRUCTURAL CHARACTERIZATION OF POROUS CERAMICS BY IMAGE ANALYSIS
- 2.4. *M. Havrlentová, K. Križanová, A. Žofajová, J. Gubiš* MALTING QUALITY AND GRAIN YIELD OF SPRING BARLEY GENOTYPES
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