Final program

13th International Conference on
POLYSACCHARIDES-GLYCOSCIENCE

ICPG 2017

8-10 November, 2017

Novotného lávka 5,
Prague, Czech Republic

UNIVERSITY OF CHEMISTRY AND TECHNOLOGY PRAGUE

EuCheMS

Czech Chemical Society

8th November, 2017

17:00 – 19:00 Conference Opening (glass of wine)

ArtCafe
Karlova (Street) 2,
PRAGUE 1

9th November, 2017

08:00 – 09:00 Registration

Novotného lávka 5
116 68 PRAGUE 1

Oral session

09:00 WELCOME
JANA ČOPÍKOVÁ,
PAVEL KOTRBA, VICE-RECTOR FOR RESEARCH AND DEVELOPMENT,
UCT PRAGUE

09:10 – 11:00 Oral session 1 "FUNCTIONALITY AND APPLICATION OF POLYSACCHARIDES I" chairwoman: Jana Čopíková

09:10 – 09:50 **Keynote lecture: SEAWEED DERIVED CARBOHYDRATES – HEALTH RELATED APPLICATIONS**
X. Qi, R. Tester
Glycologic Limited, Glasgow, UK
r.f.tester@glycologic.co.uk

9:50 – 10:30 **Keynote lecture: POLYSACCHARIDES FROM NATURAL SOURCES FOR BIOMEDICAL AND COSMETIC APPLICATIONS**
A. Sionkowska
Department of Chemistry of Biomaterials and Cosmetics, Faculty of Chemistry, Nicolaus Copernicus University in Toruń, Poland
alinas@umk.pl

10:30 – 10:45 **CHLOROPHYL-DEFICIENT CLONES OF MICROALGAE *CHLORELLA SP.* AS A SOURCE OF POLYSACCHARIDES**
R. Bleha, A. Sinica, A. Kollmannová, P. Kaštánek, K. Demnerová, J. Čopíková
Department of Carbohydrates and Cereals, Faculty of Food and Biochemical Technology, University of Chemistry and Technology Prague; ECOFUEL LABORATORIES s.r.o. Czech Republic
blehar@vscht.cz

10:45 – 11:00 **METHODS OF OBTAINING CELLULOSE FROM HEMP STRAW (*CANABIS SATIVA L.*)**
A. Kasprzycka, J. Lalak-Kańczugowska, E. Gryt
Institute of Agrophysics, Polish Academy of Sciences, Lublin; Institute of Plant Genetics, Polish Academy of Sciences, Poznań; General Hemp Marketing sp. z o. o. Mysłowice, Poland
a.kasprzycka@ipan.lublin.pl

11:00 – 12:00 **Coffee Break / Exhibition**

12:00 – 13:00 **Oral session 2 "FUNCTIONALITY AND APPLICATION OF POLYSACCHARIDES II" chairman: Andrej Sinica**

12:00 – 12:15 **DEGRADATION PRODUCTS ORIGINATING FROM ACID-CATALYZED HYDROLYSIS OF HYALURONAN**
D. Čožíková, M. Hermannová, D. Šmejkalová, K. Nešporová, Ž. Černohousová, V. Velebný
Contipro a.s., Dolní Dobrouč, Czech Republic
Dagmar.Cozikova@contipro.com

12:15 – 12:30 **PREBIOTIC POTENTIAL OF FRUCTANS, GALACTANS AND HETEROPOLYSACHARIDES FROM DIFFERENT PLANT SOURCES RELATED TO THEIR STRUCTURE AND MOLECULAR DIMENSION**
M. Mueller, H. Viernstein, R. Loeppert, W. Praznik
Department of Pharmaceutical Technology and Biopharmaceutics, University of Vienna, Austria
monika.mueller@univie.ac.at

12:30 – 12:45 **THE APPLICATION OF NMR RELAXATION MEASUREMENTS TO SPECIFY THE ROLE OF ENDOGENOUS POLYSACCHARIDES IN FORMING HYDRATION PROPERTIES OF SOY PROTEIN PREPARATIONS**
M. Witek, I. Maciejaszek, K. Surówka
Department of Refrigeration and Food Concentrates, Faculty of Food Technology, University of Agriculture in Kraków, Poland
m.witek@ur.krakow.pl

12:45 – 13:00 **FORMULATION OF ß-CYCLODEXTRIN/HERBICIDE CONJUGATE CONTAINING 2,4-DICHLOROPHENOXYACETIC ACID FOR AGROCHEMICAL PURPOSES**
W. Ciesielski, T. Girek, B. Herman, P. Rychter
Jan Dlugosz University in Czestochowa, Faculty of Mathematics and Natural Sciences, Poland
wc@ajd.czest.pl

13:00 – 14:00 **LUNCH**

14:00 – 15:10 **Oral session 3 "STARCH: CHEMISTRY AND PROPERTIES" chairman: Richard Tester**

14:00 – 14:40 **Keynote lecture: PHYSICAL MODIFICATION OF STARCH – REALLY PHYSICAL?**
G. Lewandowicz
Department of Biotechnology and Food Microbiology, Poznań University of Life Sciences, Poland
grazyna.lewandowicz@up.poznan.pl

14:40 – 14:55 **FUNCTIONALITY OF FOOD GRADE MODIFIED STARCHES ENRICHED WITH SELECTED IONS**

J. Le Thanh-Blicharz, J. Lewandowicz, H. Śmigielska
Department of Food Concentrates and Starch Products, prof. Wacław Dąbrowski Institute of Agricultural and Food Biotechnology, Poznań; Department of Natural Science and Quality Assurance, Poznań University of Economics and Business, Poland
lethanh@ibprs.pl, jacek.lewandowicz@ue.poznan.pl, h.smigielska@ue.poznan.pl

14:55 – 15:10 **THE EFFECT OF DEGREE OF SUBSTITUTION ON DYNAMICS OF MOLECULES OF HYDRATION WATER IN ACETYLATED DISTARCH ADIPATE POWDERS**

Ł. Masewicz, K. Pers, J. Le Thanh-Blicharz, J. Lewandowicz, H. M. Baranowska
Department of Physics and Biophysics, Poznan University of Life Sciences; Faculty of Technical Physics, Poznań University of Technology, Department of Food Concentrates and Starch Products, prof. Wacław Dąbrowski Institute of Agricultural and Food Biotechnology, Poznań; Department of Natural Science and Quality Assurance, Poznań University of Economics and Business, Poland
lukasz.masewicz@up.poznan.pl, katarzyna.pers@up.poznan.pl, lethanh@ibprs.pl, jacek.lewandowicz@ue.poznan.pl, hanna.baranowska@up.poznan.pl

15:10 – 16:00 **Coffee Break / Exhibition**

18:00 – 20:00 **Conference Party Mánes Art Restaurant**

Posters

1.1.	*K. Pers, Ł. Masewicz, Z. Małyszek, J. Le Thanh-Blicharz, J. Lewandowicz, H. M. Baranowska*	Dynamics of water molecules in pastes of cross-linked and acetylated starches
1.2.	*R. Bleha, A. Sinica, A. Kollmannová, P. Kaštánek, L. Sushkytsky, J. Čopíková*	Biomass of chlorophyl-deficient clones of micro algae
1.3.	*D. Chena Aldao, E. Šárka, P. Ulbrich, E. Menšiková*	Starch nanoparticles
1.4.	*V. Dvořáček, E. Matějová*	Effect of starch rheological properties on rheological characteristics of wheat flour
1.5.	*S. Gillarová, S. Henke, Z. Bubník*	Processing of hydrolyzed galactomannans from carob gum
1.6.	*M. Hrušková, I. Švec, L. Mrvíková*	Influence of fiber from gold linseed on viscosity characteristics of different composite mixtures
1.7.	*G. Khachatryan, K. Khachatryan, M. Krystyjan*	Formation and properties of novel silver/hyaluronan/graphen bio-nanocomposites
1.8.	*G. Khachatryan, K. Khachatryan, M. Krystyjan, J. Grzyb*	Polysaccharides-modified graphene oxide as new packing materials
1.9.	*K. Khachatryan, G. Khachatryan*	Polysaccharide/quantum dots nanocomposites as freshness markers in packaging
1.10.	*A. Komisarczyk, J. Rosicka-Kaczmarek, E. Nebesny*	Utilization of cereal bran to obtain heteropolysaccharides with antioxidative properties
1.11.	*J. Rosicka-Kaczmarek, A. Nowak, A. Komisarczyk, E. Nebesny*	Cyto- and genotoxic activity of heteropolysaccharides isolated from rye bran
1.12.	*M. Krystyjan, K. Buksa*	The influence of gelatinized/freeze-dried starch addition on gluten-free pasta properties
1.13.	*M. Krystyjan, K. Buksa*	Properties of gluten-free pasta dough modified by gelatinized/freeze-dried starch addition
1.14.	*J. Le Thanh-Blicharz, J. Lewandowicz*	The effect of couterpart ions on the rheological properties of normal and waxy potato starches
1.15.	*H. M. Baranowska, J. Le Thanh-Blicharz, G. Lewandowicz*	The effect of divalent ions on water dynamics in native potato starch pastes
1.16.	*J. Lewandowicz, Z. Małyszek, J. Le Thanh-Blicharz*	Rheological properties of esters of waxy potato starch
1.17.	*I. Przetaczek-Rożnowska, J. Rożnowski, T. Fortuna, B. Zawartka*	Selected properties of starch mono- and distarch phosphates obtained from starches isolated from lentil seeds

1.18.	*I. Przetaczek-Rożnowska, J. Rożnowski, T. Fortuna, G. Warzecha*	Effect of selected spices addition on physicochemical properties of potato starch
1.19.	*P. Skřivan, M. Sluková, K. Vaculová, T. Kozelková, D. Perner*	Characterization and comparison of whole grain flours with different damaged starch and fibre content
1.20.	*M. Sluková, P. Skřivan, L. Kumbárová, K. Vaculová, Š. Horáčková, D. Havelková*	Physico-chemical properties of wholemeal flour and sourdough prepared from a new food barley variety
1.21.	*A. Łakomy, K. Buksa*	Degradation of non starch polysaccharides obtained from chia and flax seeds by enzymatic and acid treatment
1.22.	*A. Łakomy, K. Buksa, K. Syga*	Extraction and purification of polysaccharides from seeds of chia and flax
1.23.	*A. Szwengiel, J. Le Thanh-Blicharz, G. Lewandowicz*	Molecular structure of acetylated starches of different degree of substitution
1.24.	*I. Maciejaszek, M. Witek, J. Banaś, K. Surówka*	Impact of polysaccharides in soy flour and soy protein concentrate on water-biopolymer interactions
1.25.	*I. Maciejaszek, M. Witek, I. Tesarowicz, J. Banaś, K. Surówka*	Properties of complexes obtained from lupin protein isolate and polysaccharides
1.26.	*P. Pająk, M. Peciak, T. Fortuna*	Preparation and characteristics of edible films based on different types of starch and plasticizer concentrations
1.27.	*J. Sobolewska-Zielińska, K. Królikowska, P. Pająk, T. Fortuna, K. Ścieszka*	Effect of maltodextrin addition on selected physical properties of sponge cakes
1.28.	*S. Petrin, I. Valchev, N. Yavorov*	Application of thermostable and alkali-tolerant xylanase on the hardwood pulp bleaching
1.29.	*T. Taubner, M. Marounek, A. Sinica, Z. Volek, E. Skřivanová, D. Dušková*	Preparation of the amidated alginate and comparison of the hypocholesterolemic and hypolipidemic activity with alginate in rats
1.30.	*T. Apanowicz, M. Czerwicka, S. Szulta, K. Ossowska, J. Marszewski, Z. Kaczynski*	The structure of the *O*-polysaccharide isolated from *Pectobacterium wasabiae* PWG67A
1.31.	*J. M. Cruz Rubio, M. Mueller, H. Viernstein, R. Loeppert, W. Praznik*	Prebiotic potential of the heat-treated mucilages of two nopal species (*Opuntia ficus-indica* and *Opuntia xoconostle*)
1.32.	*M. Chylińska, M. Szymanska-Chargot, A. Zdunek*	Use of Raman imaging and immunofluorescence technique to observations of polysaccharides distribution changes in the tomato fruit cell wall
1.33.	*W. Ciesielski, D. Kulawik, P. Tomasik*	Metal ion catalyzed carbonization of cereals straw

10st November, 2017

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Oral session

09:00 – 10:10	Oral session 4 "STARCH APPLICATION" chairman: Krzysztof Surówka

09:00 – 09:40 **Keynote lecture: SURFACE-HYDROPHOBIZED SMALL GRANULAR STARCHES AS EMULSION STABILIZERS FOR FOOD, COSMETICS, AND PHARMACEUTICALS**
B. Wiege, A. Marefati, M. Matos, N. U. Haase, M. Rayner
Max Rubner-Institut, Federal Research Institute of Nutrition and Food, Department of Safety and Quality of Cereals, Detmold, Germany; Department of Food Technology, Engineering, and Nutrition, Lund University, Sweden; Department of Chemical and Environmental Engineering, University of Oviedo, Spain
berthold.wiege@mri.bund.de

09:40 – 09:55 **STARCH BASED NANOCOMPOSITES AS SENSORS FOR SILVER IONS**
K. Khachatryan, G. Khachatryan
Department of Chemistry, University of Agriculture, Cracow, Poland
rrchacza@cyf-kr.edu.pl

09:55 – 10:10 **BAKING OF MODEL BREAD WITH AN ADDITION OF STARCH ISOLATED FROM PRE-HARVESTED WHEAT**
D. Gumul, H. Gambuś, R. Ziobro, R. Sabat, A. Wywrocka Gurgul
Department of Carbohydrates Technology, University of Agriculture in Kraków, Poland
rrgumul@cyf-kr.edu.pl

10:10 – 11:10	Coffee Break / Exhibition

11:10 – 13:05	Oral session 5 "ISOLATION AND CHARACTERIZATION OF POLYSACCHARIDES" chairman: Ján Hirsch

11:10 – 11:50 **Keynote lecture: MOLECULAR AND HYDROCOLLOIDAL CHARACTERISTICS OF XANTHAN IN AQUEOUS MEDIA**
P. Wintersteller, A. Muriqi, D. Bajrami, G. Hoti, A. Huber
Inst.f.Chem., PS&HC - Polysaccharides and Hydrocolloids, Univ. Graz, Austria; University of Prishtina, Kosovo
anton.huber@uni-graz.at

11:50 – 12:05 **INTEGRITY OF FLAXSEED MUCILAGE: AN INFLUENCE OF ISOLATION AND DRYING CONDITIONS**
Ya. Troshchynska, P. Smrčková, I. Saloň, A. Sinica, J. Štětina
Department of Dairy, Fat and Cosmetics; Department of Carbohydrates and Cereals, Department of Chemical Engineering, University of Chemistry and Technology Prague, Czech Republic
troshchy@vscht.cz

12:05 – 12:20 **MODERN SEPARATION TECHNOLOGY FOR MANNOSE PRODUCTION**
S. Gillarová, S. Henke, N. Shakhno, Z. Bubník
Department of Carbohydrates and Cereals; Department of Dairy, Fat and Cosmetics, University of Chemistry and Technology, Prague, Czech Republic
simona.gillarova@vscht.cz

12:20 – 12:35 **STRUCTURE AND CHEMICAL COMPOSITION OF EXOPOLYMERS EXTRACTED FROM DETERIORATED BEETS**
A. Antczak-Chrobot, M. Wojtczak
Lodz University of Technology, Institute of Food Technology and Analysis, Poland
aneta.antczak@p.lodz.pl; maciej.wojtczak@p.lodz.pl

12:35 – 12:50 **METHODOLOGICAL APPROACH TO DETECT POLYSACCHARIDES AND THEIR DEGRADING ENZYMES IN THE SKIN: HYALURONAN AND HYALURONIDASES AS AN EXAMPLE**
P. Žádníková, M. Hermannová, K. Nešporová, V. Velebný
Contipro a.s., R&D Department, Dolní Dobrouč, Czech Republic
petra.zadnikova@contipro.com

12:50 – 13:05 **BIOPOLYMER PRODUCED BY *DICTYOSPHAERIUM CHORELLOIDES***
M. Halaj, E. Paulovičová, L. Paulovičová, S. Jantová, M. Matulová, V. Cepák, J. Lukavský, P. Capek
Institute of Chemistry, Center for Glycomics, Slovak Academy of Sciences, Bratislava; Institute of Biochemistry and Microbiology, Faculty of Chemical and Food Technology, Slovak University of Technology, Bratislava, Slovak Republic; Department of Autotrophic Microorganisms, Institute of Microbiology, Academy of Sciences of the Czech Republic
chemhami@savba.sk

13:05 **AWARDS, CLOSING CEREMONY**
EVŽEN ŠÁRKA, PAVEL DRAŠAR
University of Chemistry and Technology, Czech Chemical Society, Prague, Czech Republic

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Posters

2.1.	*H. Śmigielska, H. Baranowska, J. Lewandowicz*	Fortification of oxidised starches with Cu^{2+} ions
2.2.	*H. Śmigielska, W. Błaszczak, J. Lewandowicz*	Microstructure of starch pastes containing Cu^{2+} ions
2.3.	*P. Smrčková, K. Lukschová, E. Šárka*	Influence of heat treatment of food on starch digestibility
2.4.	*R. Socha, M. Bączkowicz, T. Fortuna, M. Pastuszyńska*	Influence of polyols on the selected properties of cookies
2.5.	*D. Gałkowska, R. Socha, M. Krężołek*	Effect of partial substitution of spelt flour with other ancient wheat and quinoa flours on quality characteristics of pasta
2.6.	*K. Surówka, M. Witek, I. Maciejaszek, D. Krokosz, J. Rychlicka-Rybska*	Influence of soybean endogenous polysaccharides on thermogravimetric characteristics of soy protein preparations

2.7.	*E. Šárka, A. Němečková, D. Chena Aldao, P. Smrčková*	Properties of oral disintegrating tablets prepared from wheat starch and powdered cellulose using extrusion cooking
2.8.	*L. Štěrbová, J. Bradová, M. Hutař*	Does "healthy" food choice matter? Comparison of starch digestibility in ordinary starchy food and its wholemeal/multicereal alternatives
2.9.	*I. Švec, M. Hrušková, L. Mrvíková*	Effect of fiber from brown linseed on viscosity profiles of different composite flour
2.10.	*M. Tabaszewska, J. Słupski, P. Gębczyński, K. Pogoń, Ł. Skoczylas*	Fiber content in aril yew (Taxus baccata L.) originates from different area of Poland
2.11.	*P. Gębczyński, M. Tabaszewska, A. Korus, J. Słupski, E. Bernaś*	Effect of technological process and storage on dietary fiber in tomato purée products
2.12.	*D. Krokosz, J. Rychlicka-Rybska, M. Witek, I. Maciejaszek, K. Surówka*	Characterisation of semi-refined κ and ι-carrageenan
2.13.	*M. Witek, I. Maciejaszek, G. Fiutak, K. Surówka*	Comparison of water state in xanthan gum, xanthan gum - soy protein isolate mixtures and electrocomplexes suspensions by combined NMR relaxation and thermogravimetric approach
2.14.	*N. Yavorov, S. Petrin, P. Velichkova, D. Todorova, I. Valchev, I. Lalov*	Effect of parameters of mild acid hardwood pulp hydrolysis on the released wastewater sugars and methane production potential
2.15.	*L. Juszczak, K. Pycia, S. Grabowska*	Effect of esterification time with tartaric acid of waxy maize starch on its selected physicochemical properties
2.16.	*K. Pycia, L. Juszczak, G. Jaworska*	Resistance of maltodextrins of varying degree of saccharification based on chemically modified starches to the action of glucoamylase
2.17.	*M. Piestrzyński, J. Koziara, J. Rosicka-Kaczmarek, M. Krzemiński, G. Krzywańska, E. Krawczyk, E. Nebesny, W. Krysiak, K. Miśkiewcz, J. Arkusiński*	Influence of the fondant cooking method on sucrose crystallization and the quality of finished product
2.18.	*A. Korus, E. Bernaś, P. Gębczyński, J. Słupski, M. Tabaszewska*	Effect of technological processing on the content of carbohydrate compounds in kale (*Brassica oleracea* L. var. *Acephala*) leaves
2.19.	*E. Bernaś, G. Jaworska, A. Korus , J. Słupski, P. Gębczyński*	Effect of pre-treatment on chitin and chitosan content in frozen mushrooms
2.20.	*A. Botvynko, L. Čurda*	Enzymatic synthesis of galactooligasaccharides: comparison of the three soluble β-galactosidases
2.21.	*K. Buksa, A. Łakomy, K. Syga, D. Litwinek, M. Kowalczyk, J. Boreczek, A. Nowotna, H. Gambuś*	Degradation of polysaccharides during sourdough fermentation process
2.22.	*K. Buksa, A. Łakomy, A. Nowotna*	HPSEC with post column derivatization for improved amylose detection

2.23.	*J. Słupski, A. Korus, E. Bernaś, M. Tabaszewska, Ł. Skoczylas*	Effect of canning on the content of dietary fiber in immature seeds of six cultivars of common bean (*Phaseolus vulgaris* L.)
2.24.	*J. Słupski, P. Gębczyński, A. Korus, E. Bernaś, M. Tabaszewska*	The content of dietary fiber in the fresh and frozen immature bean seeds depending on type and method of processing prior to freezing
2.25.	*J. Rosicka-Kaczmarek, K. Dędek, W. Maniukiewicz, E. Nebesny, A. Komisarczyk, K. Miskiewicz*	Obtaining and functional properties of starch-ferulic acid complex
2.26.	*D. Gumul, H. Gambuś, R. Ziobro, R. Sabat, A. Wywrocka Gurgul, M. Kruczek*	Quality and texture of wheat bread with an addition of starch isolated from pre-harvested wheat
2.27.	*J. Bradová, L. Štěrbová, T. Sedláček, B. Klitschová*	The effect of elevated amylose content on starch digestibility and technological quality of bakery products
2.28.	*S. Jonnalagadda, E. Baeva, T. T. Vuová, R. S. Dhale, R. Bleha, J. Čopíková*	Identification of polysaccharides in confectionery jelly
2.29.	*L. Třešnáková, R. Bleha, A. Sinica, J. Čopíková*	Polysaccharides from sporocarp of fungi *Ganoderma resinaceum*: isolation and structure
2.30.	*K. Vaculová, I. Sedláčková, O. Jirsa, M. Sluková, P. Skřivan*	Changes in chemical composition and nutritional properties of wholemeal flours from different barley materials due to controlled germination
2.31.	*S. Szulta, M. Czerwicka, T. Apanowicz, K. Ossowska, Z. Kaczyński*	The structure of the O-polysaccharide isolated from *Pseudomonas* 482
2.32.	*M. Işık*	Boronic acid appended BODIPY fluors for selective sensing of sugars