

21st– 25th October 2019

6TH INTERNATIONAL POLYSACCHARIDE CONFERENCE

epn_{hex}e

Aveiro | Portugal



WELCOME

It is a great pleasure and privilege to welcome you to Aveiro and to the **6th EPNOE International Polysaccharide Conference**.

This congress is an initiative of EPNOE, the Cellulose and Renewable Division of the American Chemistry Society (ACS), and the Cellulose Society of Japan (CSJ) and is being hosted in Aveiro, Portugal for the first time.

The ambition of the EPNOE International Polysaccharides Conferences is to bring together researchers from academia and industry working or interested in polysaccharides related R&D topics, to disseminate results and to promote a networking platform for close interactions between academia and industry.

We are pleased to offer you an excellent scientific programme, structured in Thematic Sessions covering different areas where polysaccharides have a relevant role, co-organized by scientific experts in each field.

We hope that it will be an enjoyable event that will provide an opportunity for delegates to discuss and share knowledge, ideas and expertise with colleagues and peers.

We wish you a fruitful meeting and a pleasant stay in Aveiro!

On behalf of the organizing committee,

Local Organizers:

Carmen Freire

Manuel Coimbra

EPNOE Association:

Patrick Navard

EPNOE-ACS-CSJ committee:

Pedro Fardim

ACS

Kevin Edgar

Steve Eichhorn

CSJ

Tetsuo Kondo

Yoshinobu Tsujii

Hirofumi Ono



PROGRAM

MONDAY | 21st OCTOBER 2019

09:00 *Registration and Poster Set-up*

AUDITORIUM 1

Chairperson: Patrick Navard

11:30 **Opening Ceremony**

12:00 PLENARY LECTURE 1

Orlando J. Rojas | Aalto University (Finland) & North Carolina State University (USA)

Cellulose nanocrystals: chemistry, self-assembly, and applications

12:45 Lunch

14:30 PLENARY LECTURE 2

Redouane Borsali | University of Grenoble (France)

Self-assembly of carbohydrate block copolymers: nanoparticles and highly nanostructured thin films

15:15 Coffee Break | Poster Session

PARALLEL SESSIONS

AUDITORIUM 1 – Physical properties of polysaccharides

1

Chairpersons: Bjørn Christensen & Lars Wågberg

16:30 KEYNOTE 1 | **Ivan Donati**

Physical Properties of Polysaccharides

17:00 ORAL COMMUNICATION 1 | **Wim Thielemans**

Anisotropic diffusion and phase behaviour of cellulose nanocrystal suspensions

17:20 ORAL COMMUNICATION 2 | **Mathilde Challamel**

Micrometric length scale structural organization of Cellulose NanoCrystal suspensions under shear flow probes by 2D – Static Light scattering

17:40 ORAL COMMUNICATION 3 | **Julien Bras**

Development of stimuli-responsive cellulose nanocrystals hydrogels for smart applications

- 18:00 ORAL COMMUNICATION 4 | **Marcus Johns**
Methodologies for determining the protonation state of nanocellulose suspensions and gels
- 18:20 ORAL COMMUNICATION 5 | **Mariama Ndour**
Pectin: A super binder for Silicon-based Li-ion batteries
- 18:40 ORAL COMMUNICATION 6 | **Fabian Hernández-Tenorio**
Characterization of pullulan modified from Aureobasidium pulullans ATCC 15233

AUDITORIUM 2 - Advanced Analytical methods

2

Chairpersons: Laura Nystrom & Andriy Synytsya

- 16:30 KEYNOTE 2 | **Francisco Vilaplana**
Wood hemicelluloses: molecular structure and interactions in woody tissues
- 17:00 ORAL COMMUNICATION 7 | **Alistair King**
Liquid-state NMR analysis of crystalline celluloses
- 17:20 ORAL COMMUNICATION 8 | **Tiina Nypelö**
Assembly of cellulose nanocrystals in a suspension in flow
- 17:40 ORAL COMMUNICATION 9 | **Mathias A. Hobisch**
Visualization of micro- and nanosized cellulose particles in a paper matrix – a labeling approach
- 18:00 ORAL COMMUNICATION 10 | **Eva Regel**
High-throughput screening assay to characterize the specificities of novel or engineered chitosan hydrolases
- 18:20 ORAL COMMUNICATION 11 | **Leo Svenningsson**
Molecular Orientation Distributions in Fibers
- 18:40 ORAL COMMUNICATION 12 | **Katri S. Kontturi**
Adsorption of polymers on cellulose from non-aqueous solvents

ROOM 3 - Polysaccharides based fibers and regenerated cellulose

3

Chairpersons: André Lehmann and Michael Hummel

- 16:30 KEYNOTE 3 | **Kurt Uihlein**
Polysaccharides based fibers and regenerated cellulose
- 17:00 ORAL COMMUNICATION 13 | **Michael R. Buchmeiser**
Processing of Cellulose Using Ionic Liquids: Access to High-Performance Materials

- 17:20 ORAL COMMUNICATION 14 | **Hans Grundberg**
Experiences on viscose dope production from different cellulose sources
- 17:40 ORAL COMMUNICATION 15 | **Thomas Roeder**
Regenerated cellulose – developments and biodegradability
- 18:00 ORAL COMMUNICATION 16 | **Hannes Orelma**
Preparation of optical fibers from cellulose for optical sensor applications
- 18:20 ORAL COMMUNICATION 17 | **Beatrice Swensson**
Water-based solvents for cellulose
- 18:40 ORAL COMMUNICATION 18 | **Nassima Elmiri**
Cellulose nanocrystals: a new route towards strong nature-based and barrier materials

ROOM 4 - Building and construction

4

Chairpersons: Patrick Navard & Gustavo Tonoli

- 16:30 KEYNOTE 4 | **Gustavo Tonoli**
Application of vegetal fibers in building materials: Performance and challenges
- 17:00 ORAL COMMUNICATION 19 | **Patrick Navard**
Influence of chemical treatments of miscanthus stem fragments on polysaccharide release in the presence of cement and on the mechanical properties of bio-based concrete materials
- 17:20 ORAL COMMUNICATION 20 | **Yang Yunxian**
Use of a bio-based flame retardant for lignocellulosic insulation boards
- 17:40 ORAL COMMUNICATION 21 | **Fabiola Vilaseca**
Nanostructure control on polyamide-6 /cellulose nanofiber composites. Manufacture, characterization and properties
- 18:00 ORAL COMMUNICATION 22 | **Estelle Doineau**
Development of hierarchical interphase in flax/epoxy biocomposites with cellulose nanocrystals: Effects on physical properties of flax fibres and biocomposites
- 18:20 ORAL COMMUNICATION 23 | **Caterina Palange**
Compatibilized Microfibrillated Cellulose used as a reinforcement in Melt-Compounded Polypropylene composites: a study on mechanical properties and filler dispersion
- 18:40 ORAL COMMUNICATION 24 | **Hesam Taheri**
One-step twin-screw extrusion of cellulose fibers to produce microfibrillated cellulose-polypropylene composite
- 20:00 *Get Together Party*

GET TOGETHER PARTY

The EPNOE2019 Get Together Party will be held at **Hotel Melia Aveiro (20h00-21h30)**.
The participants will socialize during a buffet dinner in the first evening of the conference.



TUESDAY | 22nd OCTOBER 2019

AUDITORIUM 1

Chairpersons: Lennart Bergström

09:00 PLENARY LECTURE 3

Giovanna Brusatini | Università di Padova (Italy)

Biomaterials and engineered microenvironments for biomedical studies

09:45 PLENARY LECTURE 4

Chihiro Yamane | Kobe Women's University (Japan)

Regeneration of cellulose from its solution and resultant feature of high wettability

10:30 Coffee Break | Poster Session

PARALLEL SESSIONS

AUDITORIUM 1 - Polysaccharides for biomedical applications

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Chairpersons: Kevin Edgar & Ewa Wesolowska

11:00 KEYNOTE 5 | Marcin Struszczyk

Application of the poly-beta-aminosaccharides in medical applications

11:30 ORAL COMMUNICATION 25 | Paweł Botwina

Polysaccharide derivatives with antiviral properties: inhibitory activity in solution and as coatings ensuring reversible adsorption of viruses

11:50 ORAL COMMUNICATION 26 | Rupert Kargl

Polysaccharides derivatized with amino acids and some cationic substituents

12:10 ORAL COMMUNICATION 27 | **Martin Gericke**

Reactive polysaccharide nanoparticles - from polymer synthesis to biomedical applications

12:30 ORAL COMMUNICATION 28 | **Katja Heise**

Multi-stimuli responsive nanocellulose hydrogels by grafting low-molecular-weight polymer chains

AUDITORIUM 2 - Advanced analytical methods

6

Chairpersons: Laura Nystrom & Andriy Synytsya

11:00 KEYNOTE 6 | **Bjørn E. Christensen**

Structure-function properties of polysaccharides studied by multidetector SEC

11:30 ORAL COMMUNICATION 29 | **Carolina O. Pandeirada**

Chemical depolymerization of a TEMPO-oxidized arabinoxylan into diagnostic oligosaccharides

11:50 ORAL COMMUNICATION 30 | **Maija Tenkanen**

Mass spectrometry as a sensitive tool to study specificity of carbohydrate oxidizing enzymes

12:10 ORAL COMMUNICATION 31 | **Paavo Penttilä**

Moisture-induced changes in wood nanostructure studied with X-ray and neutron scattering

12:30 ORAL COMMUNICATION 32 | **Moe Fuchise-Fukuoka**

Analytical method for new pulp fiber/calcium carbonate nanocomposites using tube flow fractionator

ROOM 3 - Structure of plant cell wall polysaccharides

7

Chairpersons: Henk Schols & Guillaume Pierre

11:00 KEYNOTE 7 | **Marc Lahaye**

Contribution of cell wall polysaccharides structure and organization to hydrated plant tissue biomechanical properties

11:30 ORAL COMMUNICATION 33 | **Lukas Pfeifer**

First structural characterization of an AGP from a marine plant enlightens adaption processes to saline environment

11:50 ORAL COMMUNICATION 34 | **Jörg Müssig**

Improvement of fiber-matrix adhesion and damping in cellulose/polyolefin composite materials by means of photochemical fiber surface modification

12:10 ORAL COMMUNICATION 35 | **Simon Jonasson**

Mechanical-chemical nanofiber extractability of wood with variable ultrastructure and composition through one-pot oxidative pretreatments

- 12:30 ORAL COMMUNICATION 36 | **Weihong Lu**
Effects of Acanthopanax senticosus polysaccharides on Brain Injury Induced by Simulated Spatial Radiation in Mouse Model Based on Pharmacokinetics and Comparative Proteomics

ROOM 4 - Marine Polysaccharides

8

Chairpersons: Nicolas Lemoigne, Jean-François Sassi & Yoshikuni Teramoto

- 11:00 KEYNOTE 8 | **Pi Nyvall Collen**
The versatility of seaweed polysaccharides
- 11:30 ORAL COMMUNICATION 37 | **Niklas Wahlström**
Extraction and characterization of polysaccharides from the northern hemisphere sea lettuce
- 11:50 ORAL COMMUNICATION 38 | **Yusaku Hirayama**
Nanochitosan-catalyzed chemoselective Knoevenagel condensation under green conditions
- 12:10 ORAL COMMUNICATION 39 | **Amalie Solberg**
Alginate based block polysaccharides
- 12:30 ORAL COMMUNICATION 40 | **Maha Abdallah**
Extraction of glycosaminoglycans from marine waste streams using Deep Eutectic Solvents
- 12:50 **EPNOE AVEIRO 2019 GROUP PHOTOGRAPHY**
- 13:00 **Lunch**

AUDITORIUM 1

Chairpersons: Kevin Edgar

14:30 PLENARY LECTURE 5

- Lennart Bergström** | University of Stockholm (Sweden)
Nanocellulose based materials: assembly and interfacial engineering

15:15 **Coffee Break | Poster Session**

AUDITORIUM 1 - Polysaccharides for biomedical applications

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Chairpersons: Kevin Edgar & Ewa Wesolowska

- 16:30 KEYNOTE 9 | **Matthew Kipper**
Tuning polysaccharide-based nanomaterials for biomedical applications

- 17:00 ORAL COMMUNICATION 41 | **Natalia Ferraz**
On the development of ion-crosslinked nanocellulose hydrogels for advanced wound care applications
- 17:20 ORAL COMMUNICATION 42 | **Thomas Heinze**
Cationic dextran derivatives as efficient non-viral vectors for gene delivery
- 17:40 ORAL COMMUNICATION 43 | **Emiliano Bedini**
Non-degradative diol reactivity of polysaccharides
- 18:00 ORAL COMMUNICATION 44 | **Pasquale Sacco**
Chitosan Acetylation Degree Influences the Physical Properties of Polysaccharide Nanoparticles: Implication for the Innate Immune Cells Response
- 18:20 ORAL COMMUNICATION 45 | **Giulia Vessell**
Development of new, semi-synthetic pathways towards structurally well-defined (fucosylated) chondroitin sulfate polysaccharides

AUDITORIUM 2 - Cellulose hemicellulose interactions

10

Chairpersons: Bernad Cathala & Marc Lahaye

- 16:30 KEYNOTE 10 | **Lars Wågberg**
On the solubility of wood hemicelluloses and the interaction between hemicelluloses and cellulose model surfaces
- 17:00 ORAL COMMUNICATION 46 | **Nejib Kasmi**
Novel Fully Biobased Non-Isocyanate Polyurethanes from Hemicelluloses
- 17:20 ORAL COMMUNICATION 47 | **Ana Villares**
Impact of acetylation on xylan-cellulose interactions: a QCM-D and molecular dynamic study
- 17:40 ORAL COMMUNICATION 48 | **Alexandre Cordinier**
Interactions between polysaccharides in aqueous solution: development of an innovative methodology to characterize them at the molecular level
- 18:00 ORAL COMMUNICATION 49 | **Kazuho Daicho**
Crystallinity-independent yet modification-dependent, true density of nanocellulose
- 18:20 ORAL COMMUNICATION 50 | **Bernard Cathala**
Cellulose nanocrystals-hemicelluloses nanoassemblies as versatile building blocks for hydrogels with tunable properties

ROOM 3 - Surface science and chemical and enzymatic modification of polysaccharides

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Chairpersons: Veronique Bonnet, Jose Kovensky & Thomas Heinze

- 16:30 KEYNOTE 11 | **Gary Chinga Carrasco**
Biopolymers and 3D printing of biomedical devices

- 17:00 ORAL COMMUNICATION 51 | **Rinat Nigmatullin**
Surface engineering of cellulose nanocrystals for advanced functional materials
- 17:20 ORAL COMMUNICATION 52 | **Véronique Bonnet**
Synthesis and development of supported complexing agent based on cellulose for water disinfection
- 17:40 ORAL COMMUNICATION 53 | **Tetyana Koso**
Benchmarking cellulose surface acetylation using model cellulose nanocrystals via gas- and liquid-phase reactions
- 18:00 ORAL COMMUNICATION 54 | **Guillaume Sudre**
Chitosan thin films: preparation, physicochemical characterizations and bacterial adhesion
- 18:20 ORAL COMMUNICATION 55 | **Matias Lakovaara**
Modification of nanocellulose and all-cellulose composite films in deep eutectic solvents

ROOM 4 - Marine polysaccharides

12

Chairpersons: Nicolas Lemoigne, Jean-François Sassi & Yoshikuni Teramoto

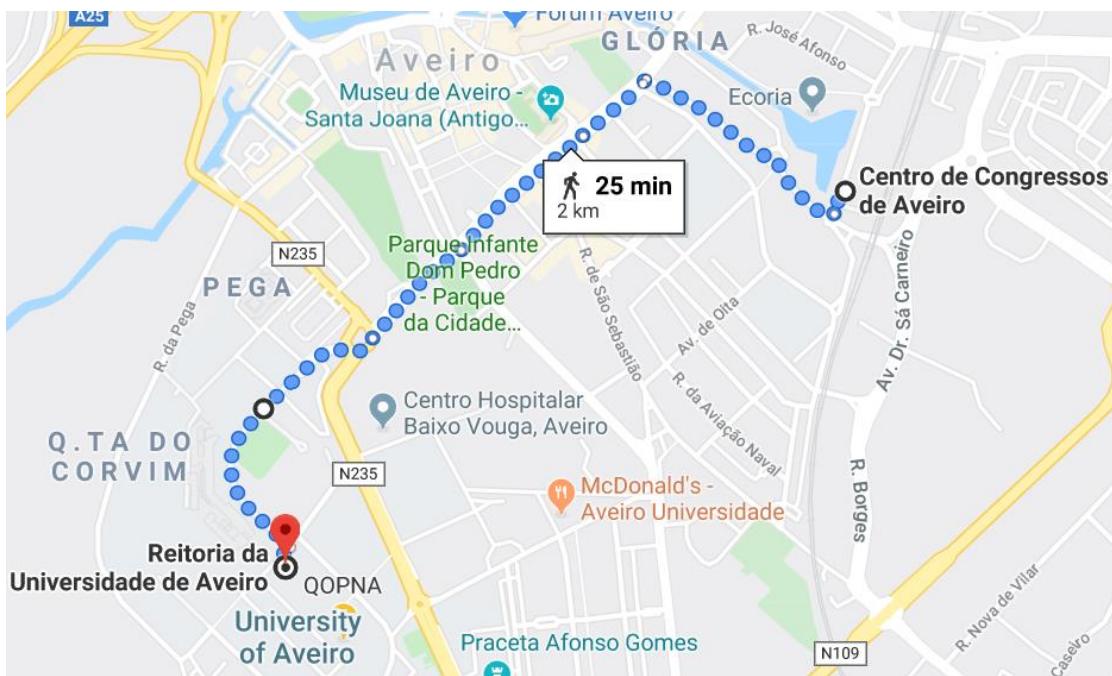
- 16:30 KEYNOTE 12 | **Guillaume Pierre**
Discovering new functional polysaccharides from Maghreb marine algae and terrestrial plants
- 17:00 ORAL COMMUNICATION 56 | **Jakub Matusiak**
Marine treasure – comprehensive studies on the influence of fucoidan on the properties of alumina
- 17:20 ORAL COMMUNICATION 57 | **Matej Bracic**
Sulphated-Polysaccharide Coatings: Evaluation of biomedical potential
- 17:40 ORAL COMMUNICATION 58 | **Mehrzed Zargarzadeh**
Innovative Biomedical System Based on Controlled Enzymatically Degradation of Hydrogels
- 18:00 ORAL COMMUNICATION 59 | **Quanbin Zhang**
Neuroprotective effect and preliminary mechanism of oligoporphyran
- 18:20 ORAL COMMUNICATION 60 | **Lahja Martikainen**
Strain-stiffening of agarose hydrogels
- 20:00 Aveiro of Honour

AVEIRO OF HONOUR

The EPNOE2019 Aveiro of Honor will be held at The **Rector Building of University of Aveiro (20h00-21h30)**.

In *Aveiro of Honour* there will be regional foods and drinks, with live manufacturing and degustation of Ovos Moles de Aveiro – Protected Geographical Indication (PGI) and taste of artisanal beer and cider Vadia.

A student group (**Tuna Universitária de Aveiro - facebook.com/tua.aveiro**) will provide a short musical performance.



WEDNESDAY | 23rd OCTOBER 2019

AUDITORIUM 1

Chairperson: Tetsuo Kondo

09:00 PLENARY LECTURE 6

Eugenia Kumacheva | University of Toronto (Canada)

Cellulose Nanocrystals: from self-assembly to structurally anisotropic nanofibrillar hydrogels

09:45 PLENARY LECTURE 7**Samuel C. Zeeman** | ETH Zurich (Switzerland)*A fresh look at starch biosynthesis using new synthetic- and cell-biological approaches***10:30 Coffee Break | Poster Session**

----- PARALLEL SESSIONS -----

AUDITORIUM 1 - Surface science and chemical and enzymatic modification of polysaccharides**13***Chairpersons: Veronique Bonnet, Jose Kovensky & Thomas Heinze***11:00 KEYNOTE 13 | Kevin Edgar***Architectural Design in Polysaccharide Chemistry***11:30 ORAL COMMUNICATION 61 | Aleksey Bychkov***Mechanochemical tools for polysaccharide processing***11:50 ORAL COMMUNICATION 62 | Reeta Salminen***Autocatalysed surface modification of cellulose nanocrystals***12:10 ORAL COMMUNICATION 63 | Virginie Dulong***Functionalization of polysaccharides with phenolic compounds for aqueous formulations: characterisation, antioxidant and antibacterial properties***12:30 ORAL COMMUNICATION 64 | Birgit Lutsch***PCC-functionalized nanocellulose composites in production and application***AUDITORIUM 2 - Starch modification and applications****14***Chairpersons: Andreas Blennow & Idalina Gonçalves***11:00 KEYNOTE 14 | Yong-Cheng Shi***Substituent patterns and applications of modified starches***11:30 ORAL COMMUNICATION 65 | Maurice Essers***Novel dietary fiber and in vitro methodology***11:50 ORAL COMMUNICATION 66 | Carina Sampl***Starch-Cellulose Blend Thin Films***12:10 ORAL COMMUNICATION 67 | Agnes Sitterli***Ene-functionalized Dextran Derivatives: Preparation & Reactivity*

- 12:30 ORAL COMMUNICATION 68 | **Inge-Willem Noordergraaf**
Development of a starch-based hydrogel with improved properties towards the use of saline water resources in agriculture.

ROOM 3 - Nanoforms of polysaccharides

15

Chairpersons: Julien Bras & Shinsuke Ifuku

- 11:00 KEYNOTE 15 | **Andreas Walther**
Bioinspired Mechanical and Functional High-Performance Materials based on Nanocellulose and Nanochitin
- 11:30 ORAL COMMUNICATION 69 | **Johanna Majoinen**
Liquid crystalline chitin nanocrystal suspensions
- 11:50 ORAL COMMUNICATION 70 | **Jonathan Leboucher**
Production of lignocellulosic nanofibers with different swelling agent
- 12:10 ORAL COMMUNICATION 71 | **Etienne Gatt**
Influence of the drying process for the valorization of high concentration nanofibrillated cellulose obtained by twin screw extrusion
- 12:30 ORAL COMMUNICATION 72 | **Loreleï Douard**
Use of two natural deep eutectic solvents for cellulose nanocrystal elaboration

ROOM 4 - Nanoforms of polysaccharides

16

Chairpersons: Pedro Fardim & Tetsuo Kondo

- 11:00 KEYNOTE 16 | **Miguel Gama**
Bacterial Cellulose: a high-performance hydrocolloid
- 11:30 ORAL COMMUNICATION 73 | **Rita Bastos**
Saccharomyces pastorianus cell wall glucans: unique structural features and prospects
- 11:50 ORAL COMMUNICATION 74 | **Kirsi S. Mikkone**
Fungal mycelia–biomass residue composites for durable materials
- 12:10 ORAL COMMUNICATION 75 | **Ryo Takahama**
Biofabrication of hyaluronic acid / bacterial nanocellulose composited fibers through a biosynthetic-secretory pathway in Gluconacetobacter
- 12:30 ORAL COMMUNICATION 76 | **Rita Mota**
Cyanobacterial extracellular polymeric substances (EPS): characteristics and possible applications
- 12:50 Lunch

----- PARALLEL SESSIONS -----

AUDITORIUM 1 - Biosynthesis and biocatalytic routes for polysaccharide synthesis and modification

17

Chairpersons: Carmen Boeriu & Andreas Walther

15:00 KEYNOTE 17 | **Slavko Kralj**

Microbial & enzymatic polysaccharides

15:30 ORAL COMMUNICATION 77 | **Dan Belosinschi**

Application of nanocellulose in agriculture. Reversing the hydrophobic behavior of peat moss.

15:50 ORAL COMMUNICATION 78 | **Christine Delbarre-Ladrat**

Structural diversity, modifications and applications of glycosaminoglycan-like exopolysaccharides produced by marine bacteria

16:10 ORAL COMMUNICATION 79 | **Ana Cristina Rodrigues**

Strategies to decrease the industrial cost of bacterial nanocellulose production

16:30 ORAL COMMUNICATION 80 | **Antoni Planas**

Towards chitosans with defined pattern of acetylation by enzymatic polymerization with engineered chitinases

16:50 ORAL COMMUNICATION 81 | **Lea Hembach**

*A chitosan deacetylase of the human pathogen *Cryptococcus neoformans* – Its unique subsite specificity and hypothesized natural role during infection*

AUDITORIUM 2 - Starch modification and applications

18

Chairpersons: Yong-Cheng Shi & Paula Ferreira

15:00 KEYNOTE 18 | **Andreas Blennow**

Bioengineered starch for foods and bioplastics

15:30 ORAL COMMUNICATION 82 | **Isaac Benito González**

High-performance starch biocomposites with celullose from aquatic waste biomass

15:50 ORAL COMMUNICATION 83 | **Jéssica Santos**

Potato starch addition as a strategy to develop lightweight calcium carbonate fillers from eggshells

16:10 ORAL COMMUNICATION 84 | **Sílvia Petronilho**

Hydrophobization of starch-based films by potato spent frying oil transesterification

- 16:30 ORAL COMMUNICATION 85 | **Helena Sousa**
PotatoPlastic: Development of starch-based formulations by a company operating within plastic compounds
- 16:50 ORAL COMMUNICATION 86 | **Paulo Brites**
Starch, waxes, and oil recovered from potato chips by-products applied on biobased thermoplastics production

ROOM 3 - Nanosforms of polysaccharides

19

Chairpersons: *Julien Bras & Shinsuke Ifuku*

- 15:00 KEYNOTE 19 | **Wadood Y. Hamad**
Cellulose Nanocrystals: Transformations in Emulsifiers and Functional Polymers
- 15:30 ORAL COMMUNICATION 87 | **Fangbo Lin**
Temperature-controlled star-shaped cellulose nanocrystal assemblies resulting from asymmetric polymer grafting
- 15:50 ORAL COMMUNICATION 88 | **Maud Chemin**
Star-like supramolecular assembly of biotin-functionalized tunicate cellulose nanocrystals
- 16:10 ORAL COMMUNICATION 89 | **Marjan Motiei**
Rifampicin Loaded Amphiphilic Chitosan Nanocarriers in Skin Wound Healing
- 16:30 ORAL COMMUNICATION 90 | **Marco Beaumont**
Soft Cellulose II Nanoparticles
- 16:50 ORAL COMMUNICATION 91 | **Feng Chen**
Ionic liquid induced disagglomeration of NFC in aqueous suspensions

ROOM 4 - Membranes, filtration and environmental applications

20

Chairpersons: *João Paulo Crespo & Romain Bordes*

- 15:00 KEYNOTE 20 | **João Paulo Crespo**
Biopolymeric membranes: a contribution for a circular economy?
- 15:30 ORAL COMMUNICATION 92 | **Dominik Ruhr**
Crosslinked Cellulose-based Membrane Filters for Micro- and Ultrafiltration
- 15:50 ORAL COMMUNICATION 93 | **Lazar Maria Marinela**
Chitosan-based cryo-composites with 3D porous morphology and selective metal ion sorption properties
- 16:10 ORAL COMMUNICATION 94 | **Ricardo Brandes**
Bio-adsorbent membranes based on chitosan and phosphorylated cellulose for fast and efficient water remediation – Evaluation of Cd²⁺ ion removal

- 16:30 ORAL COMMUNICATION 95 | **Tuula Selkälä**
Removal of Emerging Pollutants from Water using Cellulose Nanofibrils Derived from Deep Eutectic Solvents
- 16:50 ORAL COMMUNICATION 96 | **Nesrine Kassem**
Preparation of Chitosan/Cellulose Triacetate Films for Copper removal from aqueous solutions
- 17:45 Vista Alegre Museum & Conference Dinner

VISTA ALEGRE MUSEUM & CONFERENCE DINNER

The EPNOE2019 Conference Dinner will be held at **Montebelo-Vista Alegre (17h45-23h00)**.

The importance and diversity of Vista Alegre heritage allows to enjoy a wide variety of experiences. Before the Conference Dinner, the program starts with a visit to Vista Alegre Factory, Store, Museum of the History of Vista Alegre, and Nossa Senhora da Penha de França Chapel, testimony of a long and rich journey of art and innovation.

Buses will leave Conferences Congress Centre at 17h45, driving the participants to the social event. At the end of the event, buses will leave Conference Dinner periodically according to the convenience schedule of a relevant number of participants.



THURSDAY | 24th OCTOBER 2019

AUDITORIUM 1

Chairpersons: Pedro Fardim

09:00 PLENARY LECTURE 8

EPNOE Science Award

This award will recognize life achievement contributions of polysaccharide scientists and technologists

09:45 PLENARY LECTURE 9

Pietro Matricardi | Sapienza Rome (Italy)

Polysaccharide nanohydrogels for drug delivery

----- PARALLEL SESSIONS -----

AUDITORIUM 1 - Polysaccharides in 3D printing and other additive manufacturing techniques

21

Chairpersons: Karin Kleinschek & Rupert Kargl

11:00 KEYNOTE 21 | **Pedro Fardim**

Fabrication of cellulose acetate-collagen bilayer matrices integrated bioactive latex for skin tissue engineering

11:30 ORAL COMMUNICATION 97 | **Tanja Zidaric**

Bioink-based scaffolds for bioengineering skin substitutes

11:50 ORAL COMMUNICATION 98 | **Paulo Toledo**

Water confinement into hydroxypropyl methylcellulose hydrogels

12:10 ORAL COMMUNICATION 99 | **Frida Wende**

Hyaluronan hydrogels - analysis of cross-linking parameters and reactivity

12:30 ORAL COMMUNICATION 100 | **Jérémie Viguié**

Polysaccharide-based grid for stiffening flexible packaging material

AUDITORIUM 2 - Polysaccharides for drug delivery

22

Chairpersons: Juergen Engelhardt & Matthew Kipper

11:00 KEYNOTE 22 | **Amina Faham**

Pharmaceutical excipients market today: A rapidly evolving landscape

11:30 ORAL COMMUNICATION 101 | **Naoya Sagawa**

Nanoparticulation of micron-aggregated gum ghatti

11:50 ORAL COMMUNICATION 102 | **Kecheng Li**

Access to single chitosan oligosaccharides facilitates identification of key components responsible for biological activity

12:10 ORAL COMMUNICATION 103 | **Cláudia P. Passos**

Preparation of microparticles for pulmonary administration of insulin using coffee polysaccharides as protein carriers

12:30 ORAL COMMUNICATION 104 | **Agata Zykwinska**

Growth factor delivery systems based on a marine exopolysaccharide for cartilage regeneration

ROOM 3 - Porous materials from polysaccharides

23

Chairpersons: Tatiana Budtova & Falk Liebner

- 11:00 KEYNOTE 23 | **Carlos Garcia-González**
Engineering of Polysaccharide Aerogels for Biomedical Applications
- 11:30 ORAL COMMUNICATION 105 | **Daniel Filgueira**
Superhydrophobic cellulosic foam for selective absorption of organic compounds
- 11:50 ORAL COMMUNICATION 106 | **Pavel Gurikov**
Processing of polysaccharide aerogels: recent progress and open questions
- 12:10 ORAL COMMUNICATION 107 | **Tsuguyuki Saito**
Nanocellulose-derived porous nanocarbon structures with unique properties
- 12:30 ORAL COMMUNICATION 108 | **Maria Valentina Dinu**
Chitosan-based composite cryogels: preparation, characterization and potential applications

ROOM 4 - Food applications

24

Chairpersons: Tatiana Budtova & Falk Liebner

- 11:00 KEYNOTE 24 | **Amparo Lopez-Rubio**
Marine polysaccharides for food-related applications
- 11:30 ORAL COMMUNICATION 109 | **Sónia Ferreira**
In vitro B-cell immunostimulatory activity of pectic polysaccharides from broccoli by-products
- 11:50 ORAL COMMUNICATION 110 | **Cynthia Fontes-Candia**
Superabsorbent food packaging bioactive cellulose-based aerogels from Arundo donax waste biomass
- 12:10 ORAL COMMUNICATION 111 | **Luisa Maria Ferreira**
Synthesis of a sustainable polymer to achieve protein stable white wines
- 12:30 ORAL COMMUNICATION 112 | **Noriyuki Isobe**
Nanogel-assisted emulsification of gum arabic
- 12:50 Lunch

AUDITORIUM 1

Chairperson: Orlando J. Rojas

14:00 PLENARY LECTURE 10

Henk Schols | Wageningen University (Netherlands)

Plant cell wall polysaccharide structure and variability

14:45 PLENARY LECTURE 11

Shinsuke Ifuku | Sapienza Rome (Italy)

Chitin nanofibers prepared from crab shell waste and its biological properties on skin for commercial applications

15:30 Coffee Break | Poster Session

PARALLEL SESSIONS

AUDITORIUM 1 - Polysaccharides in 3D printing and other additive manufacturing techniques

25

Chairpersons: Karin Kleinschek & Rupert Kargl

16:30 KEYNOTE 25 | **Alexandra Marques**

3D Printed Gellan Gum for Cutaneous Wound Healing

17:00 ORAL COMMUNICATION 113 | **Tim Huber**

Cellulose hydrogels with complex three dimensional structures and tuneable properties made by additive manufacturing

17:20 ORAL COMMUNICATION 114 | **Maria C. Teixeira**

Polysaccharide-based hydrogels for 3D Bioprinting applications

17:40 ORAL COMMUNICATION 115 | **Fazilet Gürer**

Synthesis of Polysaccharide Derivatives for 3D Printing Applications

18:00 ORAL COMMUNICATION 116 | **Idalina Gonçalves**

Manufacturing and characterization of starch-based 3D printer filaments using industrial byproducts

18:20 ORAL COMMUNICATION 117 | **Juliane Strätz**

Fast and facile formation of hydrogels by crosslinking oxidized cellulose sulfate with carboxymethyl chitosan: synthesis and properties

AUDITORIUM 2 – Polysaccharides for drug delivery**26***Chairpersons: Juergen Engelhardt & Matthew Kipper*

- 16:30 KEYNOTE 26 | **M. Şamil Kök**

Polysaccharides for drug delivery in respect to their physical properties & functionality

- 17:00 ORAL COMMUNICATION 118 | **Lars Nordstierna**

Regenerated cellulose fibers functionalized with microcapsules for controlled and predicted release

- 17:20 ORAL COMMUNICATION 119 | **Bastien Michel**

CYCLOCELL: Cyclodextrin functionnalized nanocellulose for drug delivery

- 17:40 ORAL COMMUNICATION 120 | **Cecile Sillard**

Cellulose nanofibrils as active membranes for drug release

- 18:00 ORAL COMMUNICATION 121 | **Saffron Bryant**

Cellulose-stabilised emulsions for pharmaceutical and home care products

- 18:20 ORAL COMMUNICATION 122 | **Denise Petri**

Magnetic nanoparticles/polysaccharides hydrogels for biomedical applications

ROOM 3 – Porous materials from polysaccharides**27***Chairpersons: Tatiana Budtova & Falk Liebner*

- 16:30 KEYNOTE 27 | **Nathalie Tanchoux**

Marine polysaccharides: from the natural polymer to the textured materials

- 17:00 ORAL COMMUNICATION 123 | **Stefan Spirk**

Porous materials from polysaccharides for energy storage

- 17:20 ORAL COMMUNICATION 124 | **Tatiana Budtova**

Micrometric cellulose aerogel particles via emulsion technique

- 17:40 ORAL COMMUNICATION 125 | **Falk Liebner**

Deceleration is good: An approach towards anisotropic cellulose II aerogels competing with cellulose I aerogels

- 18:00 ORAL COMMUNICATION 126 | **Tarel Abdul Ghafur**

3D real-time and in situ characterisation of the forming of ice-templated nanocellulose-based foams using ultrafast X-ray synchrotron microtomography 3D imaging

- 18:20 ORAL COMMUNICATION 127 | **Fangxin Zou**

Tailoring the properties of starch aerogels/cryogels via starch source and process parameter

ROOM 4 - Food applications**28***Chairpersons: Laura Salvia-Trujillo & Amparo Lopez-Rubio*16:30 KEYNOTE 28 | **Laura Trujillo***Polysaccharides for the design of emulsion-based delivery systems to improve food functionality*17:00 ORAL COMMUNICATION 128 | **Andrej Sinica***Polysaccharidic composition of basidiocarps of cultivated mushroom Pleurotus ostreatus*17:20 ORAL COMMUNICATION 129 | **Elisabete Coelho***Novel structural features of brewer's spent yeast polysaccharides towards food and biomedical applications*17:40 ORAL COMMUNICATION 130 | **Manon Le Gars***Adsorption of active molecules on CNC for the preparation of hybrid multi-layered CNC-PLA based packaging materials*18:00 ORAL COMMUNICATION 131 | **Mélanie Marquis***Pickering Oil Microdroplets into Alginate Microgels by Microfluidics for controlled-release of Lipophilic Compound*18:20 ORAL COMMUNICATION 132 | **Shan Shan***Preparation, antioxidant activity and structural characterization of polysaccharide from the radix of Platycodon grandiflorum***AUDITORIUM 2**

18:45 EPNOE General Assembly

FRIDAY | 25th OCTOBER 2019**AUDITORIUM 1***Chairperson: RunCang Sun***09:00 PLENARY LECTURE 12****Arthur Ragauskas** | University of Tennessee (USA)*Lignocellulosic Valorization & Biorefining***09:45 PLENARY LECTURE 13****José Manuel García Fernández** | Sapienza Rome (Italy)*Cyclodextrin-based molecular nanoparticles: precision chemistry for precision medicine*

10:30 Coffee Break | Poster Session

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AUDITORIUM 1 - Polysaccharides in the formulation of multiphase systems 29

Chairpersons: Orlando Rojas & Stefan Spirk

11:00 KEYNOTE 29 | **Andreas Mautner**

Multi-phase cellulose and chitin nanopapers

11:30 ORAL COMMUNICATION 133 | **Michel Grisel**

Hydrophobically modified xanthan as an efficient stabilizer for Oil-in-water emulsions

11:50 ORAL COMMUNICATION 134 | **Igor Makarov**

Phase diagram solvent—coagulant as the basis for selecting films spinning conditions

12:10 ORAL COMMUNICATION 135 | **Maarit Lahtinen**

Which are the active constituents responsible for the emulsification properties of birch glucuronoxylan-rich extracts: carbohydrates or phenolics?

12:30 ORAL COMMUNICATION 136 | **Isabell Capron**

Synthesis of latex stabilized by unmodified cellulose nanocrystals

AUDITORIUM 2 - Polysaccharide based nanocomposites 30

Chairpersons: Elisabete Frollini & Armando Silvestre

11:00 KEYNOTE 30 | **Elisabete Frollini**

Macromolecular materials from cellulose, lignin and castor oil

11:30 ORAL COMMUNICATION 137 | **Melinda Desse**

Dispersion of nanocrystalline cellulose in molten polymers: effect of extrusion on the percolation threshold

11:50 ORAL COMMUNICATION 138 | **Carla Vilela**

Fully bio-based proton conductive membranes composed of nanocellulose and fucoidan

12:10 ORAL COMMUNICATION 139 | **Abdelmohsen Abdellatif**

Chitosan-glucan hollow fiber reinforced collagen dressing with multifunctional properties for cutaneous wound healing

12:30 ORAL COMMUNICATION 140 | **Bruno Medronho**

Cellulose solutions in aqueous alkali: insights on the gelation phenomena

ROOM 3 - Biorefinery**31***Chairpersons: Carlos Pascoal Neto & Runcang Sun*11:00 KEYNOTE 31 | **Runcang Sun***Production of xylo-oligosaccharides and xylonic acid from lignocellulosic hemicelluloses based on a biorefinery scenario*11:30 ORAL COMMUNICATION 141 | **Eduarda S. Morais***Eutectic solvent-based systems as reaction media for furfural production from xylans*11:50 ORAL COMMUNICATION 142 | **Amparo Jimenez Quero***Hydrothermal and Enzymatic treatment of biomass for the valorization of carbohydrates as bioactive compounds*12:10 ORAL COMMUNICATION 143 | **Janis Rizhikovs***Catalytical pretreatment in a continuous steam flow reactor - the best in the biorefinery concept*12:30 ORAL COMMUNICATION 144 | **Carolin Menzel***Biorefinery cascade conversion of sunflower hulls: Recovering active compound and polysaccharide matrices for barrier films***ROOM 4 - Polysaccharides in smart materials****32***Chairpersons: Carmen Boeriu & Avinash Manian*11:00 KEYNOTE 32 | **Karin Molenveld***Polysaccharides in smart materials*11:30 ORAL COMMUNICATION 145 | **Ricardo Chagas***Photo-responsive cellulose nanocrystals with tunable surface wettability*11:50 ORAL COMMUNICATION 146 | **Laura Riva***Aromatic Imides Functionalized Cellulose Nanosponges for Naked-Eye Heterogeneous Sensing of Fluoride*12:10 ORAL COMMUNICATION 147 | **Maxime Wawrzyniak***Hybrid system to develop transparent and conductive ink*12:30 ORAL COMMUNICATION 148 | **Olli Ikkala***From stimulus responsive polysaccharides to adaptative functionalities inspired by the classic Pavlovian conditioning*12:50 Lunch

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AUDITORIUM 1 – Polysaccharides in the formulation of multiphase systems **33**

Chairpersons: Orlando Rojas & Stefan Spirk

- 14:00 KEYNOTE 33 | **Romain Bordes**

Nanocellulose for the consolidation of work of art

- 14:30 ORAL COMMUNICATION 149 | **Frank Wendler**

Release and transfer of functional agents from Cell Solution cellulosic fibers

- 14:50 ORAL COMMUNICATION 150 | **Florian Wurm**

Illuminating mixed carrageenan gel structures by rheology

- 15:10 ORAL COMMUNICATION 151 | **Nuno H. C. S. Silva**

Nanocellulose and lysozyme nanofibers: an exceptional duo for the design of new nanomaterials for tissue regeneration

- 15:30 ORAL COMMUNICATION 152 | **Gonçalo Oliveira**

Chitosan-genipin for coating cellulose-based materials

AUDITORIUM 2 – Polysaccharide based nanocomposites **34**

Chairpersons: Elisabete Frollini & Armando Silvestre

- 14:00 KEYNOTE 34 | **Qi Zhou**

Carbohydrate-active enzymes assisted production of ultra-fine cellulose nanofibers

- 14:30 ORAL COMMUNICATION 153 | **Anna Svedberg**

Cellulose replaces plastic in future packaging materials: Formation of cellulose-based foams with reinforcement of cellulose nanocrystals for porous architecture and thermal insulation

- 14:50 ORAL COMMUNICATION 154 | **Luís Alves**

Composites of nanofibrillated cellulose with clay minerals: a new generation of high-performance films

- 15:10 ORAL COMMUNICATION 155 | **Aicha Anouar**

Chitosan-functionalized graphene nanocomposite films: interfacial interplay and biological activity

- 15:30 ORAL COMMUNICATION 156 | **Elena Dresvyanina**

The influence of chitin nanofibrils on the sorption properties of composite chitosan-based materials

ROOM 3 – Recycling, biodegradation and environmental assessment **35**

Chairpersons: Li Shen & Gustavo Tonoli

- 14:00 KEYNOTE 35 | **Lorie Hamelin**

Opportunities and challenges for bio-based materials and chemicals in the future bioeconomy

- 14:30 ORAL COMMUNICATION 157 | **Anna Svedberg**

Composting and biodegradation of potato starch based polymer compositions

- 14:50 ORAL COMMUNICATION 158 | **Luís Alves**
Electrospinning of a Photo-responsive Cellulose Derivative: Towards Smart Fibrous Materials
- 15:10 ORAL COMMUNICATION 159 | **Aicha Anouar**
Potential use of Opuntia spp. in the production of packaging for food application
- 15:30 ORAL COMMUNICATION 160 | **Elena Dresvyanina**
New co-Processed Natural Derived & Sustainable Citrus Fibers for Structuring, Stabilizing and Texturizing Cosmetic Applications

ROOM 4 – Polysaccharides in smart materials

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Chairpersons: Carmen Boeriu & Avinash Manian

- 14:00 KEYNOTE 36 | **Tung Pham**
Polysaccharides in Smart Materials
- 14:30 ORAL COMMUNICATION 161 | **Yoshikuni Teramoto**
Mechanochromism of liquid crystalline cellulose derivative/synthetic polymer composites
- 14:50 ORAL COMMUNICATION 162 | **Etienne Fleury**
Designing of New CarboxyMethyl Cellulose Derivatives by Passerini three-component reaction in aqueous media and subsequent adsorption on cellulosic substrates
- 15:10 ORAL COMMUNICATION 163 | **Irina Raschip**
Novel bioactive xanthan-based films with tuned architecture and swelling properties
- 15:30 ORAL COMMUNICATION 164 | **Matthieu Fumagalli**
Toward ionic nanocellulose membrane: grafting polyamine onto periodate oxidized nanocellulose
- 15:50 Coffee break & Poster session

AUDITORIUM 1

Chairpersons: Chihiro Yamane

16:30 PLENARY LECTURE 14

João Mano | University of Aveiro (Portugal)

Polysaccharides as structural building-blocks in tissue engineering strategies

17:15 Closing Ceremony and Prizes

POSTER'S LIST

P001 Enzymatic synthesis of galactooligosaccharides using commercial β -galactosidases

Alina Botvynko, Jiří Štětina, Ladislav Čurda

P002 Enzymatic reduction of fodmap levels in whole grain wheat flour and its potential during the bread baking process

Severin Eder, Yasemin Egeli, Cristina Lupo, Laura Nyström

P003 Thermal, mechanical and structural properties of collagen with cellulose and starch composite films

Motolani Sobanwa, Tim Foster, Nicholas Watson, Gordon Paul

P004 Effect of polysaccharides from different food sources on cholesterol bioaccessibility

Filipe Coreta-Gomes, Cláudia Passos, Guido Lopes, Pedro Fernandes, Carlos Geraldes, Maria J. Moreno, Laura Nystrom, Manuel A. Coimbra

P005 Elucidation of correlation between cell adhesion and degree of deacetylation of chitinous nanofibers

Kenki Goto, Yoshikuni Teramoto

P006 Characterization of fucose-containing sulphated polysaccharides from brown seaweed *Saccharina latissima*

Ana Moreira, Diana Gaspar, Sónia Ferreira, Alexandra Correia, Manuel Vilanova, Philip Kerrison, Marie-Mathilde Perrineau, Claire Gachon, Rosário Domingues, Manuel Coimbra, Cláudia Nunes

P007 Interaction and complex formation of ionic polysaccharide from seaweed with protein

Yoshiaki Yuguchi, Sugumi Kawashima, Thuy Thi Thu Thanh

P008 Effect of lactic acid bacteria fermentation on the carbohydrates of brown seaweed (*Saccharina latissima*)

Ndegwa Maina, Jaana Liimatainen, Ólafur Friðjónsson, Elísabet Guðmundsdóttir, Maija Tenkanen

P009 Synthesis and nematicidal activity of new chitosan oligosaccharide dithiocarbamate derivatives

Zhaqian Fan, Yukun Qin, Song Liu, Ronge Xing, Huahua Yu, Xiaolin Chen, Kecheng Li, Rongfeng Li, Xueqin Wang, Pengcheng Li

P010 Towards block polysaccharides: reducing end modification of polysaccharides by bifunctional oxyamines and hydrazides

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- P011** Chitosan as a matrix for piezoelectric bionanocomposite films
Dayana Guzman, Paula Ferreira, Cláudia Nunes, Paula M. Vilarinho
- P012** Ecological filter material for respiratory protection
Tomasz Kowalewski
- P013** The application of pectin for preparing hybrid sorbents for cesium ions removal
Joanna Bok-Badura, Agata Jakóbik-Kolon, Alicja Kazek-Kesik
- P014** Tunicate cellulose nanocrystals modified commercial filter paper for efficient oil/water separation
Yanan Huang, Hui Zhan, Chunyu Chang, Lina Zhang
- P015** Innovative nonwovens with the addition of keratin fibres from feathers produced by the spun-bonded method.
Krystyna Wrzesniewska-Tosik, Tomasz Mik, Ewa Wesolowska, Tomasz Kowalewski, Michalina Palczynska, Dariusz Debiec
- P016** Cellulose acetate/nanocelluloses composite membranes for water purification
Michiko Shimizu, Rubén Álvarez-Asencio, Niklas Nordgren, Akira Uedono
- P017** Laminated nanofibrillated cellulose nanopaper with chitosan polymer layer as anion exchange membranes for ethanol fuel cell applications
Masa Hren, Azra Osmić, Bernd Cermenek, Viktor Hacker, Karin Stana-Kleinschek, Mojca Božič
- P018** Improving exopolysaccharide extraction from high-yielding marine bacterial cultures
Guy A. Trimby, Arlene Ditchfield, David H. Green
- P019** Deep-sea hydrothermal vent bacteria: inexhaustible source of glycosaminoglycan-mimetic exopolysaccharides
Christine Delbarre-Ladrat, Laetitia Marchand, Sandrine Bonnetot, Corinne Sinquin, Mireille Cardinal, Sylvia Colliec-Jouault, Agata Zykwinska
- P020** Biochemical analysis and antimicrobial activity of biofilm extracts of two marine bacteria
Christine Delbarre-Ladrat, Delphine Passerini, Florian Fécamp, Laetitia Marchand, Laetitia Kolypczuk, Sandrine Bonnetot, Corinne Sinquin, Véronique Verrez-Bagnis, Dominique Hervio-Heath, Sylvia Colliec-Jouault
- P021** Cellulose nanofibres for application in polymer matrices
Janusz Kazimierczak, Justyna Wietecha, Marek Warzała, Hanna Nosal, Kevin Moser

- P022** Manufacturing of thermally stable cellulose nanocrystals and its application for biopolyamide nanocomposites
Agnieszka Leszczyńska, Paulina Radzik, Ewa Szefer, Krzysztof Pielichowski
- P023** In-situ preparation of lignin nanoparticles on different types of cellulose nano-fibers
Eva Pasquier, Orlando Rojas, Julien Bras
- P024** Drug delivery systems for the treatment of diabetes mellitus: state of the art
Mehmet Samil Kök, Richard B. Gillis, Shahwar I. Jiwani, Gary G. Adams
- P025** Composition, structure and rheological properties of arabinoxylans isolated from seed mucilages of various flax cultivars
Yana Troshchynska, Leonid Sushytskyi, Andrej Sinica, Jiří Štětina
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Mathilde Challamel, Maria Veronica Avalos Robertti, Stéphane Baup, Frédéric Pignon, Henda Djeridi, Nicolas Hengl, Sébastien Manneville, Thomas Gibaud, Michael Sztucki
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- P028** Food processing induced arabinoxylan modifications
Teresa Demuth, Laura Nyström
- P029** Characterization of nanofibers derived from sugar beet waste for construction of green materials and gels
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- P032** Controlled synthesis and properties of polymeric composites with well-defined cellulose-nanofiber network
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- P033** Thermodynamic investigation of interactions in cellulose nanocrystals-TiO₂ hybrids using isothermal titration calorimetry

Gertrude Kignelman, Salvatore Lombardo, Jonas Van Rie, Driss Lahem, Wim Thielemans

P034 Dispersion of chitin nanocrystal in polylactic acid nanocomposites prepared via liquid assisted extrusion by triethyl citrate

Mitulkumar Patel, Daniel Schwendemann, Shiyu Geng, Kristiina Oksman

P035 Nanocellulose, an industrial reinforcing filler? Case study on filled elastomers

Matthieu Fumagalli, Sonia Molina Boisseau, Laurent Heux

P036 Cationic cellulose nanocrystals for flocculation of marine microalgae

An Verfaillie, Jonas Blockx, Praveenkumar Ramasamy, Koenraad Muylaert, Thielemans Wim

P037 Nanocomposite films based on nanocelluloses, nanolignin and flaxseed gum as protective coatings for cellulosic substrates

Camilla Camargos, Camila Rezende

P038 Melt-spun nanocomposite fibers reinforced with aligned tunicates cellulose nanocrystals

Alexandre Redondo, Sourav Chatterjee, Pierre Brodard, Lashanda Korley, Christoph Weder, Ilja Gunkel, Ullrich Steiner

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P041 Cellulose pulp viscosity control by electron beam irradiation

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Justine Solier, Bastien Michel, Emily D. Cranston, Julien Bras

- P058** Plant-derived galactans and their inhibitory potential on metastasis associated cellular processes of pancreatic ductal adenocarcinoma cells
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- P059** Towards the modulation of the chronic wound environment by nanofibrillated cellulose hydrogels.
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- P060** Porous 3D chitosan-based matrices for tissue engineering and medicine
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- P061** Extracellular matrix-mimetic scaffolds based on surface-carboxylated nanocellulose for fibroblast cell culture
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- P081** Preparation and characterization of porous nanocellulose structures via ambient pressure drying
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- P086** Influence of polylactic acid on fluidity, plasticity, elasticity, and wettability of thermoplastic starch-based formulations
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- P087** Development of starch/calcium carbonate films using potato and egg processing industry byproducts
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- P088** Scattering and interactions of cationic starches with cellulosic materials
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- P090** Fresh and dried hot water soluble longan polysaccharides with different molecular weight
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- P093** Leonid Sushytskyi, Tamilla Mirzayeva, Tereza Kalouskova, Jana Copikova, Roman Bleha, **Andrej Sinica**, Petr Kaštánek
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