

CONFERENCE PROGRAMME

Sunday, 23 June 2019

16:00 – 19:00 **Registration and welcome buffet**

Monday, 24 June 2019

9:00 – 9:10 **OPENING**
Jiří Kotek (Director of the Institute)
Tomáš Etrych, Petr Chytil (Conference chairmen)

9:10 – 9:15 **International Union of Pure and Applied Chemistry**
Jan Merna (Representative of IUPAC)

LECTURE SESSION 1

Chaired by: Robert Luxenhofer (Germany)

9:15 – 9:55 Plenary lecture PL-01
San Hoa Thang (Australia)
RAFT: A process for making better polymers

9:55 – 10:20 Oral communication O-01
Helena Henke (Austria)
Polyphosphazenes: A degradable platform for nanomedicine

10:20 – 10:45 Oral communication O-02
Libor Kostka (Czech Republic)
Novel water-soluble biodegradable star-like polymer therapeutics

10:45 – 11:05 *Coffee break*

LECTURE SESSION 2

Chaired by: San Hoa Thang (Australia)

- 11:05 – 11:35 Invited lecture IL-01
Ijeoma F. Uchegbu (*United Kingdom*)
Differentiated medicines from polymeric nanoparticles
- 11:35 – 12:00 Oral communication O-03
Yiwen Pei (*United Kingdom*)
PISA as a versatile tool for ‘*smart*’ nanoparticles: Synthesis and characterisation
- 12:00 – 12:25 Oral communication O-04
Nikita Sedush (*Russian Federation*)
Linear and star-shaped amphiphilic lactide copolymers: Synthesis and applications for drug delivery

12:25 – 13:30

Lunch

LECTURE SESSION 3

Chaired by: Ijeoma F. Uchegbu (United Kingdom)

- 13:30 – 14:00 Invited lecture IL-02
Robert Luxenhofer (*Germany*)
Poly(2-oxazoline) based bioinks
- 14:00 – 14:25 Oral communication O-05
Wanlin Xu (*Belgium*)
Erasable hydrogen-bonded multilayers for the biocompatible release of templated nanostructures

- 14:25 – 14:50 Oral communication O-06
Peter Kasak (*Qatar*)
Zwitterionic layer for long-term durability and impedimetric HER2 biosensing in human serum: Glycoprofiling as a new approach towards breast cancer diagnostics
- 14:50 – 15:15 Oral communication O-07
Uliana Kostiv (*Czech Republic*)
Colloidally stable polymer-coated upconversion nanoparticles for biomedicine

15:15 – 15:45 *Coffee break*

LECTURE SESSION 4

Chaired by: Petr Chytil (Czech Republic)

- 15:45 – 16:10 Oral communication O-08
Jorge Leganés (*Spain*)
Hydrophobic graphene-based hydrogel: A multi-stimuli responsive drug delivery system
- 16:10 – 16:35 Oral communication O-09
Olga Janoušková (*Czech Republic*)
Study of true morphological structure of macroporous hydrogel scaffolds using SEM and LSCM – impact on cell growth
- 16:35 – 17:00 Oral communication O-10
Emmanuelle Marie (*France*)
Mixed ad layers of PLL-based copolymers to dynamically control cell adhesion/migration

Tuesday, 25 June 2019

LECTURE SESSION 5

Chaired by: Benjamin Nottelet (France)

- 8:30 – 9:10 Plenary lecture PL-02
Katharina Landfester (Germany)
Polymeric nanocapsules: Encapsulating, camouflaging, transporting and releasing drugs
- 9:40 – 10:05 Oral communication O-11
Sabah Kasmi (Belgium)
Carbonated hydroxypropyl(meth)acrylamides: A versatile strategy for generating polymers with LCST and UCST behaviour
- 10:05 – 10:30 Oral communication O-12
Svenja Morsbach (Germany)
Nanocarriers in blood plasma with elevated immunoglobulin levels: Pre-coating counteracts individual variations

10:30 – 11:00

Coffee break

LECTURE SESSION 6

Chaired by: Katharina Landfester (Germany)

- 11:00 – 11:30 Invited lecture IL-03
Benjamin Nottelet (France)
Degradable star block copolymers as highly versatile architectures for biomedical applications
- 11:30 – 11:55 Oral Communication O-13
Jana De Vrieze (Belgium)
Extremely efficient lymph node delivery by polymer-cholesterol conjugate carriers of small molecule TLR7/8 agonist

12:10 – 13:30

Lunch

LECTURE SESSION 7

Chaired by: Tomáš Etrych (Czech Republic)

- 13:30 – 14:00 Invited lecture IL-04
Hiroshi Maeda (*Japan*)
A new dimension of borono neutron capture therapy (BNCT) for solid tumor treatment
- 14:00 – 14:25 Oral communication O-15
Lucia Kleščíková (*Slovakia*)
Multicomponent polyelectrolyte complex-based microcapsule for immunoprotection of transplanted pancreatic islets
- 14:25 – 14:50 Oral communication O-16
Cornelia G. Palivan (*Switzerland*)
BIO-synthetic nanocompartments with *in vivo* functionality as artificial organelles
- 14:50 – 15:15 Oral communication O-17
Asya Ivanova Petkova (*United Kingdom*)
Glycol chitosan nanoparticles as delivery vehicles for gene therapy in glioblastoma

15:15 – 15:45

Coffee break

LECTURE SESSION 8

Chaired by: Hiroshi Maeda (Japan)

- 15:45 – 16:15 Oral Communication O-14
Eva Koziolová (Czech Republic)
Polymer-based drug delivery systems for treatment and diagnosis of inflammatory diseases
- 16:15 – 16:40 Oral communication O-18
Stepan Podzimek (Germany)
Light scattering for structural studies of polymers used in medicine
- 16:40 – 17:05 Oral communication O-19
Josef Chmelař (Czech Republic)
Biodegradable free-standing films from lauroyl hyaluronan
- 17:05 – 17:30 Oral communication O-20
Alexandra Van Driessche (Belgium)
Development of stable doxorubicin nanoparticles exhibiting reduced systemic toxicity
- 17:30 – 19:00 **Poster Session**

Wednesday, 26 June 2019

LECTURE SESSION 9

Chaired by: Kui Luo (People's Republic of China)

- 9:00 – 9:40 Plenary lecture PL-03
Jindřich Kopeček (USA)
Crosslinking of receptors as a design principle for smart nanomedicines

- 9:40 – 10:05 Oral communication O-21
Maria Cristina Cringoli (*Italy*)
Irreversible photo-switch on self-assembling tripeptides
- 10:05 – 10:30 Oral communication O-22
Carmen Scholz (*USA*)
Poly(amino acid)s in biomedicine: From gene delivery to implant surface coatings

10:30 – 11:00 *Coffee break*

LECTURE SESSION 10

Chaired by: Jindřich Kopeček (USA)

- 11:00 – 11:30 Invited lecture IL-06
Kui Luo (*People's Republic of China*)
Tumor microenvironment-responsive dendritic polymers based nano-platforms for drug delivery
- 11:30 – 11:55 Oral Communication O-23
Piotr Mazurek (*Denmark*)
Glycerol-silicone elastomers as active matrices with controllable release profiles
- 11:55 – 12:20 Oral Communication O-24
Béla Iván (*Hungary*)
Nanostructured macromolecular assemblies as controlled drug release carriers: From intelligent drug release to high efficiency drug solubilization with nanomicelles of self-assembling hyperbranched block copolymers

12:20 – 13:30 *Lunch*

14:00 – 17:00 **Social programme (Guided tours in Prague)**

19:00 – 22:00 **Conference dinner**

Thursday, 27 June 2019

LECTURE SESSION 11

Chaired by: Lutz Nuhn (Germany)

- 9:00 – 9:30 Invited lecture IL-07
Jun Fang (Japan)
Improving therapeutic effect of nanomedicine by EPR enhancers
- 9:30 – 9:55 Oral communication O-25
Khaled Greish (Bahrain)
The use of styrene maleic acid nanomicelles encapsulating the synthetic cannabinoid analog WIN55,212-2 for the treatment of triple negative breast cancer
- 9:55 – 10:20 Oral communication O-26
Kinga Pielichowska (Poland)
Polyurethanes modified with polysaccharides and magnetite for orthopedic application

10:20 – 10:45

Coffee break

LECTURE SESSION 12

Chaired by: Jun Fang (Japan)

- 10:45 – 11:15 Invited lecture IL-08
Milada Šírová (Czech Republic)
Anti-tumor immune responses in the treatment of experimental tumors with polymer prodrugs
- 11:15 – 11:40 Oral Communication O-27
Tanja Thomsen (Switzerland)
T-cell mediated drug delivery across the blood-brain barrier

11:40 – 12:05 Oral Communication O-28
Annemiek Uvyn (*Belgium*)
Efficient innate immune killing of cancer cells triggered by cell surface anchoring of multivalent antibody recruiting polymers

12:05 – 13:10

Lunch

LECTURE SESSION 13

Chaired by: Milada Šírová (Czech Republic)

13:10 – 13:40 Invited lecture IL-09
Lutz Nuhn (*Germany*)
Unfolding nanogels for local and systemic cancer immunotherapy

13:40 – 14:05 Oral communication O-30
Robert Pola (*Czech Republic*)
Peptide-targeted polymer probes used for fluorescence-guided endoscopic surgery Oral communication O-29

14:05 – 14:30 **Igor Krupa** (*Qatar*)
Light driven polymer actuators for designing of tactile displays

14:30 – 14:55 Oral communication O-31
Shrina Bhagat (*United Kingdom*)
In-vitro dissolution of reverse enteric polymer coated multiparticulates using electrochemical and high-resolution mapping techniques

14:55 – 15:25 Invited lecture IL-05

Polymer-based nanomedicines for treatment of aggressive lymphomas

15:25 – 15:40 **Closing of the Meeting, Farewell drink**

LIST OF POSTERS

- P-01** **R. O. Silva**, J. Massa Ribeiro, D. B. Foguel, K. G. de Holanda E Silva, A. C. Silvino, K. Dahmouche (*Brazil*)
Development of new Siloxane-PEO-PLA hybrid matrices for long-term release of Penicillin G
- P-02** **L. J. C. Albuquerque**, V. Sincari, A. Jäger, J. Kučka, E. Pavlova, P. Pouckova, J. Humajova, P. Štěpánek, F. C. Giacomelli, E. Jäger (*Brazil*)
Stimuli-responsive polymersomes towards the intracellular delivery of doxorubicin
- P-03** **N. Milošević**, M. Ruetter, Y. Ventura, V. Feinshtein, A. David (*Israel*)
Drug-free E-selectin-targeted therapeutic copolymer for the treatment of alcoholic liver disease (ALD)
- P-04** **D. Niewolik**, K. Jaszcz, B. Bednarczyk-Cwynar, P. Ruszkowski (*Poland*)
Studies on the preparation of betulin based polyanhydrides for use in inhalation drug delivery systems
- P-05** **G. Slor**, R. J. Amir (*Israel*)
Self-assembly of enzyme-responsive polymeric amphiphiles into micelles with different hydrophilic shells
- P-06** M. Szekalska, **K. Winnicka** (*Poland*)
Effect of oligosaccharides addition on mechanical and mucoadhesive properties of alginate films with posaconazole
- P-07** **M. Ayyoob**, X. Yang, Y. J. Kim (*Republic of Korea*)
Preparation and characterization of biodegradable well-defined block copolymers of lactide and glycolide
- P-08** **F. Adams**, O. M. Merkel (*Germany*)
Synthesis of spermine-based polyamines for nucleic-acid delivery
- P-09** A. Gupta, **B. S. Kim** (*Republic of Korea*)
Development of toughened polycaprolactone based shape memory polyurethane chitosan biocomposites
- P-10** **X. Yang**, M. Ayyoob, Y. J. Kim (*Republic of Korea*)
Synthesis and characterization of multiblock semi-crystalline hydrophobic poly(ether ketone)-partially fluorinated hydrophilic disulfonated poly(arylene ether sulfone) copolymers
- P-11** **D. Oleshchuk**, P. Šálek, J. Dvořáková, D. Babuka, E. Pavlova, J. Kučka, L. Šefc, V. Proks (*Czech Republic*)
Effect of surfactants on biocompatible and biodegradable poly(N^5 -2-hydroxypropyl-L-glutamine)-based nanogel preparation and *in vivo* imaging of nanogel biodistribution

- P-12 M. Holubova**, M. Rabyk, L. Loukotova, J. Hromadkova, M. Hraby, P. Stepanek (*Czech Republic*)
Polymer promoters and inhibitors of amyloid fibrils formation
- P-13 J. Martiska**, E. Snejdrova, S. Podzimek, M. Dittrich (*Czech Republic*)
Branched PLGA derivatives as prospective drug carriers
- P-14 G. Li**, S. He, D. T. Martin, A. G. Schatzlein, I. F. Uchegbu (*United Kingdom*)
A novel lipid-polymer hybrid system for efficient yet biocompatible gene delivery
- P-15 V. Demina**, N. G. Sedush, S. Krasheninnikov, S. Chvalun (*Russian Federation*)
Biodegradable composite materials based on polylactide and calcium phosphates with advanced properties for orthopedics
- P-16 S. H. Lee**, J. H. Lim, **K. M. Kim** (*Republic of Korea*)
Fabrication of PVP/PVA hydrogels containing polyhedral oligomeric silsesquioxane (POSS) via electron beam irradiation
- P-17 V. Gomzyak**, I. Gritskova, V. Zubov, S. Chvalun (*Russian Federation*)
Biodegradable amphiphilic multi-arm block copolymers based on hyperbranched polyester 2,2-bis(methylol)propionic acid
- P-18 D. Treľová**, L. Kleščíková, V. Raus, L. Uhelská, Z. Kroneková, A. Chovancová, J. Kronek, M. Pelach, F. Dorchei, A. Heydari, P. Rios, J. McGarrigle, Y. Wang, A. M. Rokstad, J. Oberholzer, I. Lacík (*Slovakia*)
Multicomponent polyelectrolyte complex-based microcapsules: Correlation between the encapsulation conditions and microcapsule properties
- P-19 Y. Bernhard**, R. Hoogenboom (*Belgium*)
Poly(2-oxazoline) conjugate with salicylic acid *via* ester linkage for the slow release of a non-steroidal anti-inflammatory drug
- P-20 M. Y. Badr**, N. S. Abdulrahman, A. G. Schatzlein, I. F. Uchegbu (*United Kingdom*)
Polymeric aqueous (FK 506) for topical ocular delivery in rabbits
- P-21 C. Pinese**, S. Jebors, T. Montheil, A. Bethry, S. Verquin, C. Dupont, A. Mehdi, J. Martinez, G. Subra (*France*)
Turning peptide into bioactive nylon
- P-22 A. Braunová**, P. Chytil, R. Laga, M. Šírová, D. Machová, J. Parnica, O. Janoušková, T. Etrych (*Czech Republic*)
Micellar nanotherapeutics for treatment of solid tumours: A comparative study
- P-23 L. Kotrchová**, L. Kostka, A. Libánská, V. Šubr, M. Šírová, T. Etrych (*Czech Republic*)
Biodegradable polymer carriers for therapy and diagnostic of solid tumor

- P-24 J. Kudláčová**, L. Kotrchová, M. Filipová, O. Janoušková, T. Etrych
(Czech Republic)
The synthesis of fluorescent HPMA copolymers and their penetration study to tumor spheroids
- P-25 M. Bláhová**, E. Koziolová, L. Kotrchová, B. Nottelet, T. Etrych
(Czech Republic)
PCL- α -HPMA graft copolymers for efficient drug delivery
- P-26 M. Pechar**, R. Pola, S. K. Filippov, T. Etrych, V. Král, I. Siegllová, M. Fábry
(Czech Republic)
Polymer cancerostatics targeted to GD2-positive tumors via recombinant antibody fragments
- P-27 D. Machová**, E. Koziolová, P. Chytil, K. Venclíková, T. Etrych, O. Janoušková
(Czech Republic)
Nanotherapeutics based on HPMA copolymer-bound ritonavir – detail *in vitro* characterization
- P-28 M. Nahorniak, V. Oleksa**, V. Samaryk (Czech Republic)
Polysaccharide-based nano- and microparticles prepared by steglich reaction
- P-29 A. Libánská**, E. Koziolová, G. Renault, D. Scherman, T. Etrych
(Czech Republic)
Delivery systems for treatment and diagnosis of inflammatory diseases
- P-30 O. Lidický**, D. Machová, M. Alam, L. Daumová, E. Pokorná, P. Klener, T. Etrych (Czech Republic)
Targeted drug delivery systems for non-hodgkins lymphoma therapy
- P-31 M. R. Tavares**, M. Šírová, K. Hrabánková, T. Etrych, P. Chytil
(Czech Republic)
HPMA polymer conjugates with cucurbitacin-D and doxorubicin intended for immuno-oncotherapy
- P-32 M. Kaňa**, A. Braunová, T. Etrych, J. Bouček, M. Šírová (Czech Republic)
Effect of physico-chemical characteristics of polymer micellar nanotherapeutics on their biological activity in treatment of chemoresistant tumors
- P-33 M. S. Haider**, M. M. Lübtow, R. Luxenhofer (Germany)
Think beyond the core: Investigating the role of hydrophilic corona on the drug loading capacity of polymer micelles
- P-34 J. Plchova, K. Venclíková**, O. Janoušková, J. Hrabeta, T. Eckschlager, K. Kopeckova, Z. Hampejsova, Z. Bosakova, J. Sirc, R. Hobzova
(Czech Republic)
Polylactide/polyethylene glycol fibers as a drug carrier for local chemotherapy
- P-35 M. Filipová**, E. Böhmová, R. Pola, M. Pechar, T. Etrych, O. Janoušková
(Czech Republic)
RGD-containing HPMA copolymer conjugates for targeting to α (V) β (3) integrin