## CONFERENCE PROGRAMME

### Sunday, 1 July 2012

16:00 – 19:00 Registration with welcome reception

### Monday, 2 July 2012

08:00 – 09:00 Registration
09:00 – 09:10 OPENING CEREMONY (J. Kopeček)
09:10 – 09:20 IUPAC Delegate (P. Kratochvíl)

LECTURE SESSION 1:

*Chairpersons:* *J. Kopeček, C. Wang*

09:20 – 10:00 **ML01**
**R. Duncan** *(U.K.)*
Polymer therapeutics as nanomedicines: the end of the beginning

10:00 – 10:30 **SL01**
**P. S. Stayton** *(U.S.A.)*
Intracellular delivery of biologic drugs

10:30 – 11.00 Coffee break

LECTURE SESSION 2:

*Chairpersons:* *K. Ulbrich, D. Oupický*

11:00 – 11:30 **SL02**
**H. Ghandehari** *(U.S.A.)*
Gold nanorod mediated hyperthermia enhances the delivery of HPMA copolymer-peptide conjugates to prostate tumors

11:30 – 12:00 **SL03**
**J. Feijen** *(The Netherlands)*
Biodegradable polymersomes for drug delivery

12:00 – 12:30 **L01**
**T. Bronich** *(U.S.A.)*
Engineering of soft nanomaterials for drug delivery in cancer

12:30 – 14:00 Lunch

LECTURE SESSION 3:

*Chairpersons:* *P. S. Stayton, T. Lammers*

14:00 – 14:40 **ML02**
**K. Kataoka** *(Japan)*
Supramolecular nanomedicines for targeted cancer therapy

14:40 – 15:10 **SL04**
**W. Hennink** *(The Netherlands)*
HPMA-based polymeric micelles for targeted drug delivery

15:10 – 15:40 **L02**
**M. Shtilman** *(Russia)*
Amphiphilic polymers – the new carriers for controlled release systems

15:40 – 16:10 **L03**
**G. Mező** *(Hungary)*
Branched chain polymeric polypeptides as carriers for therapeutic tools

16:10 – 18:00 POSTER SESSION 1 (PC01–PC40) and Coffee break

**PC01**
**F. Reyes-Ortega**, G. Rodríguez, M. R. Aguilar, J. S. Román, M. Stenzel *(Spain)*
LMWH encapsulation using RAFT polymers modulates nanoparticles release and activity

**PC02**
**P. Votavová**, J. Tomala, V. Šubr, K. Ulbrich, B. Říhová, M. Kovář *(Czech Republic)*
HPMA copolymer-modified IL-2 possesses superior biological activity to free IL-2 *in vivo*

**PC03**
**P. Matejicek**, M. Uchman, V. Dordovic, Z. Tosner, K. Prochazka, J. Brus, A. Zhigunov, J. Plestil, P. Cigler, M. Lepsik *(Czech Republic)*
Poly(ethylene oxide) containing systems for drug dellivery of boron cluster compounds

**PC04**
**I. Savva**, O.-M. Marinica, A. Taculescu, L. Vekas, T. Krasia-Christoforou *(Cyprus)*
Magnetoresponsive nanocomposite membranes based on PEO/PLLA/$Fe_3O_4$: fabrication, characterization and evaluation in drug delivery

**PC05**
**B. Blunden**, D. Thomas, M. Stenzel *(Australia)*
Macromolecular ruthenium complexes as anti-cancer agents

**PC06**
**D. Mocinecová**, A. Kleinová, D. Dvoranová, D. Chorvát, I. Lacík *(Slovakia)*
FTIR and AFM surface characterization of polyelectrolyte complex microcapsules aimed at pancreatic islets encapsulation

**PC07**
**J. Hašek**, T. Skálová, J. Dušková, T. Koval´, J. Dohnálek *(Czech Republic)*
Hydrophilic polymers in bio-environment

**PC08**
**G. Gorczyca**, R. Tylingo, P. Szweda, S. Milewski *(Poland)*
Antioxidant properties of novel chitosan/collagen/gelatin scaffolds for biomedical applications

**PC09**
C. C. Chang, F. H. Hsu, **T. M. Wu** *(Taiwan)*
Preparation and characterization of water-soluble and multi-functional Pluronic/magnetite nanoparticles

**PC10**
M. R. Nabid, R. Sedghi, **N. Mousavi Rad** *(Iran)*
Divergent synthesis of dendrimer-like pH-responsive macromolecules for anti-cancer drugs controlled release

**PC11**
**M. R. Nabid**, S. J. Tabatabaei Rezaei *(Iran)*
Multifunctional, thermoresponsive and stable unimolecular micelles based on amphiphilic hyperbranched block copolymers for targeted-delivery and site-specifically release of anticancer drugs

**PC12**
**I. Michalak**, M. Mucha *(Poland)*
Chitin derivative as smart carriers for drugs

**PC13**
**J. L. Hong**, Y. W. Lai *(Taiwan)*
Complexation of amino drug to poly(*N*-isopropyl acrylamide) with sodium sulfonate terminals

**PC14**
**J. Ruzickova**, Z. Jouklova, M. Pravda, M. Pokorny, V. Velebny *(Czech Republic)*
Use of nanofibers for controlled release carriers

**PC15**
**N. V. Nukolova**, V. P. Baklaushev, A. S. Khalansky, G. M. Yusubalieva, M. A. Abakumov, A. V. Kabanov, V. P. Chekhonin *(Russian Federation)*
Nanogels: a platform for targeted delivery of cisplatin to brain tumors

**PC16**
M. Kai, H.-W. Pan, K.-W. Chang, **W.-B. Liau** *(Taiwan)*
Crystallization mechanism of co-existed α and α' forms of PLLA

**PC17**
**S. H. Wang**, I. N. S. Rosa, F. S. Boquimpani, H. T. T. Oyama, I. N. Cestari, L. E. Rodrigues Filho, L. Draghi *(Brazil)*
Electrospinning of polymeric nanofibers from biodegradable elastomer

**PC18**
**S. H. Wang**, M. Herescu, M. G. Silva-Valenzuela, H. Wiebeck, F. R. Valenzuela-Díaz *(Brazil)*
Facile synthesis of biodegradable amphiphilic block copolymers from poly(3-hydroxybutyrate) and preparation of microcapsules

**PC19**
J. H. Yu, M. L. Wu, W. B. Chung, **H. C. Chaung** *(Taiwan)*
Phosphatidylserine and phosphatidylcholine-containing liposomes improve the immunostimulatory activity of interleukin-18 as a vaccine adjuvant

**PC20**
**S. Greco**, C. Allais, G. Louit, J-R. Authelin, M. Nakach *(France)*
Polymeric surfactants for stabilization of nanocrystals suspensions

**PC21**
T. Bautzová, A. Lamprecht, Y. Pellequer, **M. Rabišková** *(Czech Republic)*
Chitosan in the treatment of ulcerative colitis

**PC22**
**G. Huerta-Angeles**, M. Bobek, V. Velebny *(Czech Republic)*
Design of new *N*-acylated derivatives of Hyaluronic Acid and their crosslinking via click chemistry

**PC23**
**A. Oyarzabal**, A. Mugica, M. Zubitur *(Spain)*
Hydrolytic degradation of nanocomposites of poly(L-lactic acid) and layered double hydroxides modified with chloramphenicol succinate

**PC24**
**O. A. Budkina**, T. V. Demina, I. R. Zhivkova, T. J. Dorodnyh, N. S. Melik-Nubarov, I. D. Grozdova *(Russian Federation)*
Relationship between the structure of amphiphilic copolymers and their influence on cell viability and multi-drug resistence

**PC25**
**V. Dordovic**, M. Uchman, J. Plestil, A. Zhigunov, P. Matejicek *(Czech Republic)*
Hydrophilic copolymers based on poly(2-alkyl oxazoline) as a carriers of cobalt bis(dicarbollide) conjugates designed as HIV protease inhibitors

**PC26**
C.-M. Lin, Y.-J. Sheng, **H.-K. Tsao** *(Taiwan)*
Size-dependent properties of small unilamellar vesicles formed by model lipids

**PC27**
**E. Maximova**, E. Faĭzuloev, V. Izumrudov, N. Melik-Nubarov *(Russian Federation)*
Cationic nanogels as vehicles for gene and siRNA delivery in cell cultures

**PC28**
**M. L. Wu**, H. C. Chaung, W. B. Chung *(Taiwan)*
A co-expression vector with an antigen and TLR5-binding domain in a delivery system for vaccine development

**PC29**
**P. Perdih**, E. Žagar *(Slovenia)*
Synthesis of chitosan-*graft*-poly(L-glutamate)

**PC30**
**A. Mihálová**, M. Lahová, S. Bekešová, L. Škultéty, V. Proks, J. Kučka, I. Lacík *(Slovakia)*
Peptide-functionalized hydrogels for enhancing biocompatibility of encapsulating materials

**PC31**
E. Faizuloev, **M. Gorshkova**, A. Marova, I. Volkova, V. Izumrudov *(Russian Federation)*
Water-soluble modified chitosan as a promising vector for gene delivery

**PC32**
**L. Servat**, F. Reyes-Ortega, A. González-Gómez, M. P. Jorge, I. M. O. Sousa, N. C. Queiroz, P. M. W. Zago, M. H. Santana, J. San Román, M. A. Foglio *(Spain)*
Preparation of *Arrabidaea chica* particles using chitosan and tripolyphosphate sodium

**PC33**
B. Barros, P. Cardoso, F. Rouxinol, **P. Ferreira**, A. Serra, M. H. Gil, J. Coelho *(Portugal)*
Biodegradable vancomycin-loaded nanoparticles for ophthalmologic diseases – endophthalmitis

**PC34**
**G. Érsek**, Á. Szabó, B. Iván *(Hungary)*
Synthesis and characterisation of amphiphilic polymer conetworks based on polyisobutylene and poly(di(ethylene glycol) methyl ether methacrylate)

**PC35**
C.-M. Lin, H.-K. Tsao, **Y.-J. Sheng** *(Taiwan)*
Membrane properties of swollen vesicles: growth, rupture, and fusion

**PC36**
**P. Stloukal**, P. Kucharczyk, V. Sedlarik, M. Koutny *(Czech Republic)*
Preparation of submicroparticles from poly(lactide)-poly(ethylene glycol) block copolymer

**PC37**
**H. Nakamura** *(Japan)*
Tumor selective delivery of Zn-protoporphyrin conjugated hydroxypropylmethacrylamide polymer micelle for imaging and light induced antitumor effect

**PC38**
**F. Borcan**, C. M. Soica *(Romania)*
Polyurethane nanostructures used as drug carrier for pentacyclic triterpenes in cancer therapy

**PC39**
K. Koutroumanis, R. Holdich, **S. Georgiadou** *(United Kingdom)*
A novel micelle design for the pH-sensitive delivery of poorly water-soluble drugs

**PC40**
**M. Kabešová**, T. Etrych, M. Pechar, R. Pola, M. Fábry, K. Ulbrich, B. Říhová, M. Kovář *(Czech Republic)*
HPMA copolymer-bound doxorubicin targeted to BCL-1 leukemia with specific scFv fragment of monoclonal antibody B1

**Tuesday, 3 July 2012**

LECTURE SESSION 4:

*Chairpersons:* *E. Wagner, L. Kostka*

09:00 – 09:40 **ML03**
**L. W. Seymour** *(U.K.)*
Combining polymer coating and ultrasound enhancement for improved systemic delivery of cancer-killing viruses

09:40 – 10:10 **SL05**
**C. Wang** *(U.S.A.)*
Understanding the mechanisms of polymer-mediated DNA vaccine delivery

10:40 – 11:00 Coffee break

LECTURE SESSION 5:

*Chairpersons:* *L. W. Seymour, V. Šubr*

11:00 – 11:30 **SL07**
**E. Wagner** *(Germany)*
Sequence-defined oligo(ethanamino)amides as dynamic carriers for targeted drug delivery

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| 11:30 – 12:00 | **SL08**<br>**D. Oupický** *(U.S.A.)*<br>Polymeric prodrugs for nucleic acid delivery |
| 12:00 – 12:30 | **ESPC01**<br>**P. Kopečková** *(U.S.A.)*<br>Extra Special Personal Contribution |
| 12:30 – 14:10 | Lunch |

LECTURE SESSION 6:

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| *Chairpersons:* | *W. Hennink, T. Etrych* |
| 14:10 – 14:50 | **ML04**<br>**H. Maeda** *(Japan)*<br>Tumor targeting polymeric drugs based on the EPR effect; its augmentation for drug delivery and efficacy, and extention to tumor imaging |
| 14:50 – 15:20 | **L04**<br>**Z.-R. Lu** *(U.S.A.)*<br>A biodegradable macromolecular MRI contrast agent with high kinetic stability for cancer imaging |
| 15:20 – 15:50 | **SL09**<br>**M. J. Vicent** *(Spain)*<br>Well-defined and versatile polyglutamates as carriers for drug delivery and molecular imaging |
| 15:50 – 16:20 | **SL10**<br>**K. Mäder** *(Germany)*<br>Noninvasive monitoring of polymeric drug delivery systems |
| 16:20 – 18:00 | POSTER SESSION 2 (PC41–PC67) and Coffee break |

**PC41**
**M. Smiga-Matuszowicz**, B. Janicki, K. Jaszcz, J. Łukaszczyk, M. Lesiak, A. L. Sieroń, M. Mierzwiński, D. Kusz *(Poland)*
Injectable matrices for bone tissue regeneration

**PC42**
**B. A. Zasonska**, N. Boiko, D. Horák, R. Stoika *(Czech Republic)*
Poly(*N*,*N*-dimethylacrylamide) shell/γ-$Fe_2O_3$ core nanoparticles for labeling of mammalian cells

**PC43**
**A. Jäger**, E. Jäger, D. Gromadzki, F. C. Giacomelli, L. Kobera, J. Brus, A. Kozlowska, B. Říhová, M. El Fray, K. Ulbrich, P. Štěpánek *(Czech Republic)*
Novel ‘‘soft’’ biodegradable nanoparticles prepared from aliphatic based monomers as a potential drug delivery system

**PC44**
**E. Jäger**, A. Jäger, T. Etrych, P. Chytil, B. Říhová, P. Štěpánek, K. Ulbrich *(Czech Republic)*
Reactive HPMA-based polymer and degradable polyester enables combination chemotherapy through core-shell nanoparticles

**PC45**
**M. Šírová**, T. Etrych, P. Chytil, K. Ulbrich, B. Říhová *(Czech Republic)*
Combined effect of doxorubicin and docetaxel bound to HPMA-based polymer carrier

**PC46**
**H. Macková**, B. A. Zasonska, Z. Plichta, D. Horák *(Czech Republic)*
Morphology control of magnetic polymer microsphers prepared by heterogeneous polymerizations

**PC47**
**P. Chytil**, T. Etrych, S. K. Filippov, K. Ulbrich *(Czech Republic)*
Hydrolytically degradable polymer micelles for solid tumour drug delivery

**PC48**
**R. Pola**, M. Pechar, K. Ulbrich, R. A. Willemsen *(Czech Republic)*
Targeting of polymer therapeutics using non-covalently attached recombinant protein

**PC49**
**L. Kostka**, V. Šubr, J. Strohalm, K. Ulbrich *(Czech Republic)*
Synthesis of well-defined HPMA based copolymers by RAFT polymerization

**PC50**
**L. Vojtová**, L. Michlovská, I. Chamradová, J. Jančář *(Czech Republic)*
Thermogelling properties of injectable functionalized hydrogels

**PC51**
**M. Bittner**, P. Chytil, T. Etrych, K. Ulbrich *(Czech Republic)*
Novel synthesis of star polymer-drug conjugates using RAFT polymerization

**PC52**
**L. Vystrčilová**, T. Etrych, S. Hoffmann, K. Mäder, K. Ulbrich *(Czech Republic)*
Dual fluorescent HPMA copolymers for *in vivo* visualisation of biodistribution

**PC53**
**F. Laffleur**, G. Shahnaz, F. Hintzen, A. Bernkop-Schnürch *(Austria)*
Development and in vitro evaluation of mucus-slippery nanoparticles for mucosal diseases

**PC54**
**A. Braunová**, J. Kříž, M. Pechar, V. Šubr, K. Ulbrich *(Czech Republic)*
MRI contrast agents based on biodegradable polymer complexes of Gd

**PC55**
A. Kemp, **N. Woike**, H. Bongers, A. Franken, G. Mihov, J. Thies *(Netherlands)*
Poly(ester amide) biodegradable drug delivery system

**PC56**
A. Schädlich, S. Hoffmann, T. Mueller, H. Caysa, **K. Mäder** *(Germany)*
Is the accumulation of nanocarriers in the ovary a common phenomenon?

**PC57**
**J. Tomala**, H. Chmelová, J. Strohalm, K. Ulbrich, B. Říhová, M. Kovář *(Czech Republic)*
Overcoming immunoescape mechanisms of BCL1 leukemia and induction of CD8+ t cell-mediated BCL1-specific resistance in mice cured by target polymer-bound doxorubicin

**PC58**
**M. Kovář**, J. Tomala, T. Etrych, K. Ulbrich, B. Říhová *(Czech Republic)*
HPMA copolymer-bound doxorubicin has lower immunosuppressive effect than free drug and shows very high antitumor activity in combination with IL-2 immunocomplexes

**PC59**
**M. Kar**, N. Tiwari, M. Lahiri, S. Sen Gupta *(India)*
Polypeptides based hybrid biomaterials for DNA transfection and drug delivery

**PC60**
**A. Andicsová**, F. Galeotti, C. Botta *(Italy)*
Modification of silk fibroin films by Click reaction for medical application

**PC61**
M. B. C. de Matos, A. P. Piedade, C. Alvarez-Lorenzo, A. Concheiro, **M. E. M. Braga**, H. C. de Sousa *(Portugal)*
Dexamethasone-loaded poly(ε-caprolactone)/MCM-41 composite materials prepared by $scCO_2$ processing

**PC62**
A. M. A. Dias, A. Rey-Rico, R. A. Oliveira, S. Marceneiro, C. Alvarez-Lorenzo, A. Concheiro, R. N. C. Júnior, **M. E. M. Braga**, H. C. de Sousa *(Portugal)*
Biopolymer-based materials loaded with Jucá *(Libidibia ferrea)* supercritical $CO_2$ extracts as potential anti-inflammatory wound dressings

**PC63**
S. Marceneiro, V. von Bülow, **A. M. A. Dias**, H. C. de Sousa *(Portugal)*
Effect of choline chloride ionic liquid on the stimuli-responsiveness of chitosan-pectin polyelectrolyte complexes

**PC64**
A. R. Cortez, **A. M. A. Dias**, H. C. de Sousa *(Portugal)*
Sustained delivery of dexamethasone sodium phosphate from chitosan and *N*-carboxybutylchitosan films loaded with biocompatible choline-based ionic liquids

**PC65**
**A. Kiani**, H. Asempour *(Iran)*
Permeability of gum tragacanth and tragacanthin membranes crosslinked with glutaraldehyde

**PC66**
**A. Kiani**, S. Bozorgmehr *(Iran)*
Swelling and acetaminophen permeability of pectin/PVOH blend films crosslinked with $Zn^{2+}$

**PC67**
**S. A. Gârea**, A. Ghebaur, H. Iovu *(Romania)*
Host-guest systems based on dendrimers and antitumoral drug. Synthesis and characterization

**Wednesday, 4 July 2012**

LECTURE SESSION 7

*Chairpersons:* *J. Feijen, Z.-R. Lu*

09:00 – 09:40 **ML05**
**K. Ulbrich** *(Czech Republic)*
HPMA copolymer-based nanomedicines: Where we are and where we go

09:40 – 10:20 **ML06**
**J. Kopeček** *(U.S.A.)*
Smart biomaterials and macromolecular therapeutics

10:20 – 10:50 **SL11**
**R. Satchi-Fainaro** *(Israel)*
Revealing endothelial and cancer ZIP codes for polymer theranostics

10:50 – 11:20 Coffee break

LECTURE SESSION 8

*Chairpersons:* *K. Ulbrich, R. Satchi-Fainaro*

11:20 – 11:50 **L05**
**J. Kronek** *(Slovak Republic)*
Thermosensitive hydrogels based on 2-oxazolines for bioapplications

11:50 – 12:20 **L06**
**S. Marchesan** *(Australia)*
Tripeptide self-assembled hydrogels: soft nanostructured materials for drug delivery

12:20 – 12:35 **L07**
**I. Teasdale** *(Austria)*
Conjugates of hypericin with biodegradable polyphosphazenes

12:35 – 13:45 Lunch

LECTURE SESSION 9

*Chairpersons:* *R. Duncan, K. Mäder*

13:45 – 14:00 **YP01**
**W. Scarano** *(Australia)*
Novel reversible conjugation of folate on polymeric micelles for the delivery of Pt (IV) anticancer agents

14:00 – 14:15 **YP02**
**L. Messager** *(France)*
Glucose-responsive nanogels based on polysaccharide as nanocontainers for drug delivery

14:15 – 14:30 **YP03**
**J.-M. Prill** *(Germany)*
Capsomere specific bioresponsive coating of adenoviral vectors with pHPMA-copolymers can mediate charge dependent hepatocyte transduction *in vivo*

14:30 – 14:45 **YP04**
**E. Drabinová** *(Czech Republic)*
Esterase sensitive prednisolone-α-cyclodextrin-star PEG polypseudorotaxanes for drug targeting and delivery control

14:45 – 15:00 **YP05**
**L. T. Filipe** *(Portugal)*
Supercritical carbon dioxide deposition of dexamethasone in bioactive glasses prepared by an aqueous sol-gel route

15:00 – 15:15 **YP06**
**S. Hoffman** *(Germany)*
HPMA copolymer drug conjugates with pH-sensitive release: Noninvasive and simultaneous characterisation of carrier and drug model biodistribution and tumour accumulation in mice by use of in vivo multispectral optical imaging

15:50 – 20:00 SOCIAL PROGRAM – SIGHTSEEING TOUR
(included in the conference fee)

**Thursday, 5 July 2012**

LECTURE SESSION 10

*Chairperson:* *M. J. Vicent*

09:00 – 09:40 **ML07**
**B. Říhová** *(Czech Republic)*
Therapy-dependent activation of anticancer immune response by polymeric therapeutics

09:40 – 10:10 **L08**
**M. Pechar** *(Czech Republic)*
Hybrid polymer therapeutics: Synthetic polymers and recombinant proteins

10:10 – 10:40 **SL12**
**T. Lammers** *(The Netherlands)*
Drug targeting and imaging: Current concepts and future directions

10:40 – 11:10 Coffee break

LECTURE SESSION 11

*Chairpersons:* *B. Říhová, M. Pechar*

11:10 – 11:40 **SL13**
**Z. C. Li** *(China)*
Acid-labile thermoresponsive polymers as drug delivery carriers

11:40 – 12:10 **L09**
**A. Bunker** *(Finland)*
PEG as protective sheath in drug delivery: how does it work and can we do better? Molecular dynamics simulation provides some answers

12:10 – 12:40 **L10**
**D. Appelhans** *(Germany)*
Dendritic glycopolymers as polymeric therapeutics and diagnostics

12:40 – 12:50 CLOSING CEREMONY

12:50 – 14:00 Lunch