

THURSDAY ORAL PRESENTATIONS

June 30, 2011

9:00 AM - 9:40 AM SESSION J: Plenary Green Auditorium

* Invited paper

SESSION J6: Plenary VI
Chair: Mark Grinstaff
Thursday Morning, June 30, 2011
Green Auditorium

9:00 AM *J6.1

Pushing Divergent Synthesis to the Limits: Synthesis of the Largest Molecule with Defined Structure. A. Dieter Schlücter, Baozhong Zhang and Hao Yu; Department of Materials, ETH Zurich, Zurich, Switzerland.

10:00 AM - 12:50 PM SESSION E: Drug Delivery Green Auditorium

* Invited paper

SESSION E4:
Chairs: Mark Grinstaff and Narendra Jain
Thursday Morning, June 30, 2011
Green Auditorium

10:00 AM E4.1

Degradable Dendrimers: Design, Biocompatibility and Evaluation of Drug Release. Marc Gingras¹, Yoann M. Chabre², Jean-Manuel Raimundo¹, Michèle Boix³ and Marina Do³; ¹CINAM, UPR 3118, CNRS, Marseille, France; ²Chemistry, UQAM, Montréal, Quebec, Canada; ³Former Address, Allergan, Mougins, France.

10:20 AM *E4.2

Dendrimer-based Nanoparticles for the Targeted Cellular Delivery of Molecules. Thommy P. Thomas and James R. Baker; MNIMBS, University of Michigan, Ann Arbor, Michigan.

10:50 AM E4.3

DrugTrees for More Controllable Loading & Release of Drugs. Minghui Chai, Shengzhuang Tang and Hongtao Yu; Chemistry, Central Michigan University, Mt. Pleasant, Michigan.

11:10 AM E4.4

Triazine Dendrimers: Novel Therapeutic Carriers For Effective Delivery of Drug Substances. Kuldeep K. Bansal¹ and Narendra k. Jain²; ¹QA/QC, TEVA API India, Gwalior, India; ²Pharmaceutical sciences, Dr. H. S. Gour University, Sagour, India.

11:30 AM *E4.5

Dendritic Polyamines with Icing: View on Encapsulation, Complexation and Aggregation Processes. Dietmar Appelhans, Leibniz Institute of Polymer Research Dresden, Dresden, Germany.

12:00 PM E4.6

Preparation of Novel Liposome-like Nanoparticles on Basis of PAMAM Dendrimers. Xiangtao Wang, Shixing Xue, Xiangqian Dong, Jiawen Shi and Xuying Zhu; The Institute of Medicinal Plant Development (IMPLAD), the Chinese Academy of Medical Sciences (CAMS), Beijing, China.

12:20 PM *E4.7

Dendritic Surface Functionalization of Nanomaterials: Controlling Properties and Functions for Biomedical Applications. Elizabeth Gillies, Ali Nazemi, Ryan Amos and Colin Bonduelle; Chemistry, The University of Western Ontario, London, Ontario, Canada.

10:00 AM - 12:30 PM

SESSION G: Computational Modeling and Databases Lecture Room B

* Invited paper

SESSION G1:

Chairs: Raul Cachau and Fernando Gonzalez-Nilo
Thursday Morning, June 30, 2011
Lecture Room B

10:00 AM *G1.1

Advanced Protocols for the Characterization of Soft Nanobiomaterials at the Single Particle Level. Raul E. Cachau, Advanced Structure Analysis Collaborator, ISP, ABCC, SAIC-Frederick Inc., NCI-Frederick, Frederick, Maryland.

10:30 AM G1.2

Dendrimers and Dendrons as "Tunable Molecular Glue" for the Assembling of Organic Molecules - Multivalency Controls Hierarchical Structure and Properties. Giovanni M. Pavan, University of Applied Science of Southern Switzerland (SUPSI), Manno, Switzerland.

10:50 AM G1.3

Multiscale Molecular Modeling of Self-assembling Dendrons for Gene Delivery. Sabrina Pricl¹, Paola Posocco¹, Maurizio Fermeglia¹, Simon P. Jones², Anna Barnard² and David K. Smith²; ¹MOSE-DI3, University of Trieste, Trieste, Italy; ²Department of Chemistry, University of York, Heslington, United Kingdom.

11:10 AM G1.4

Nonadiabatic Molecular-Dynamics Study of Electron Transport in Light-harvesting Dendrimers. Satoshi Ohmura¹, Ichiro Akai¹, Fuyuki Shimojo¹, Rajiv K. Kalia², Aichiro Nakano² and Priya Vashishta²; ¹Department of Physics, Kumamoto University, Kumamoto, Japan; ²Collaboratory for Advanced Computing and Simulation, University of Southern California, Los Angeles, California.

11:30 AM G1.5

Structure of Rigid Polyphenylene-pyridyl Dendrimers Containing CdS Quantum Dots Revealed by Small-angle X-ray Scattering. Eleonora V. Shtykova¹, Lyudmila M. Bronstein², Zinaida B. Shifrina³ and Dmitri I. Svergun⁴; ¹Institut of Crystallography, Moscow, Russian Federation; ²Department of Chemistry, Indiana University, Bloomington, Indiana; ³A.N.Nesmeyanov Institute of Organoelement Compounds, Moscow, Russian Federation; ⁴EMBL, Hamburg Outstation, Hamburg, Germany.

11:50 AM G1.6

Effective Charge of PAMAM Dendrimers and the Complexation with Linear Polyelectrolytes. Ute Boehme and Ulrich Scheler; Leibniz-Institut für Polymerforschung Dresden e.V., Dresden, Germany.

12:10 PM G1.7

Molecular Modeling of Dendrimers and Their Interactions with Oligonucleotides, Proteins and Surfaces. Marek Maly^{1,5}, Elzbieta Pedziwiatr-Werbicka², Oksana Klementieva³, Laura M. Popescu⁴, Jan Maly¹, Dalibor Sedlak¹, Massimo Maiolo⁵, Roxana M. Piticescu⁴, Andrea Danani⁵, Dietmar Appelhans⁶, Barbara Klajnert², Maria Bryszewska², Francisco J. De la Mata⁷, Rafael G. Ramirez⁷, Josep B. Cladera³ and Maria A. Munoz-Fernandez⁸; ¹Department of Physics, J.E. Purkinje University, Faculty of Science, Usti nad Labem, Czech Republic; ²Department of General Biophysics, University of Lodz, Lodz, Poland; ³Center of Studies in Biophysics, Universitat Autònoma de Barcelona, Barcelona, Catalonia, Spain; ⁴National R&D Institute for Non-Ferrous and Rare Metals, Pantelimon, Ilfov, Romania; ⁵Laboratory of Applied Mathematics and Physics, University of Applied Sciences and Arts of Southern Switzerland, Manno, Ticino, Switzerland; ⁶Leibniz Institute of Polymer Research Dresden, Dresden, Germany; ⁷Departamento de Química Inorgánica, Universidad de Alcalá, CIBER-BBN, Alcalá de Henares Madrid, Spain; ⁸Laboratorio de Inmunobiología Molecular, Hospital General Universitario Gregorio Marañón, CIBER-BBN, Madrid, Spain.

10:00 AM - 12:30 PM
SESSION I: Catalysis and Light Harvesting
Lecture Room A

* Invited paper

SESSION I2:
Chairs: Ted Goodson and Paola Ceroni
Thursday Morning, June 30, 2011
Lecture Room A

10:00 AM I2.1

Coherent Phonons in a π -conjugated Antenna Subunit Molecule of Light-harvesting Dendrimers. Ichiro Akai¹, Tomoshige Shimamoto¹, Kohe Yamashiro², Mami Kobori², Kazunori Iwamitsu² and Atsuhiko Fujii¹; ¹Shockwave and condensed matter research center, Kumamoto University, Kumamoto, Kumamoto, Japan; ²Graduate School of Science and Technology, Kumamoto University, Kumamoto, Kumamoto, Japan.

10:20 AM I2.2

Designing Chiral Dendrimers for Homogeneous Asymmetric Hydrogenations. Qing-Hua Fan, Institute of Chemistry, Chinese Academy of Sciences, Beijing, China.

10:40 AM *I2.3

Core-shell Dendrimer-encapsulated Nanoparticles: Theory, Synthesis, Characterization, and Electrocatalysis. Richard M. Crooks, Emily V. Carino and David F. Yancey; Department of Chemistry and Biochemistry, The University of Texas at Austin, Austin, Texas.

11:10 AM I2.4

Immobilization of Dendrimers Encapsulated Pt Nanoparticles on Multiwalled Carbon Nanotubes and Carbon Micro Coils and Their Utilization to Electrochemical Bio/chemical Sensors. Toyoko Imae and Ampornphan Siriviriyannun; National Taiwan University of Science and Technology, Taipei, Taiwan.

11:30 AM I2.5

Fine Tuning of PPI Dendrimers for Controlled Synthesis of Subnano Pd Clusters. Tomoo Mizugaki¹, Zen Maeno¹, Takayuki Kibata¹, Takato Mitsudome¹, Koichiro Jitsukawa¹ and Kiyotomi Kaneda^{1,2}; ¹Graduate School of Engineering Science, Osaka University, Toyonaka, Osaka, Japan; ²Research Center for Solar Energy Chemistry, Osaka University, Toyonaka, Osaka, Japan.

11:50 AM I2.6

A Simple Synthesis Method for Gold Nano-plate and Nano-flower Fabrication using a Tree-type Multiple-amine Head Surfactant. Long Jiang, Guanhua Lin, Wenfeng Jia and Wensheng Lu; Institute of Chemistry, Chinese Academy of Sciences, Beijing, China.

12:10 PM I2.7

PPI Dendrimer Encapsulating Subnano Pd Clusters as a Nanoreactor for Allylic Substitution Reaction. Takayuki Kibata¹, Zen Maeno¹, Takato Mitsudome¹, Tomoo Mizugaki¹, Koichiro Jitsukawa¹ and Kiyotomi Kaneda^{1,2}; ¹Graduate School of Engineering Science, Osaka University, Osaka, Japan; ²Research Center for Solar Energy Chemistry, Osaka University, Osaka, Japan.

2:00 PM - 3:20 PM
SESSION D: Biological Studies
Green Auditorium

* Invited paper

SESSION D3:
Chair: Marc Gingras
Thursday Afternoon, June 30, 2011
Green Auditorium

2:00 PM D3.1

Interaction of PAMAM Dendrimers with Blood Coagulation System: Effects of Particle Size and Surface Charge. Marina Dobrovolskaia¹, Anil Patri¹, Jan Simak², Timothy Potter¹, Jamie Rodriguez¹, Jana Semberova² and Scott McNeil¹; ¹SAIC-Frederick Inc, Frederick, Maryland; ²CDER, US FDA, Rockville, Maryland.

2:20 PM *D3.2

Dendritic Supramolecular Assemblies as Antibacterial Agents. Mark Grinstaff, Boston University, Boston, Massachusetts.

2:50 PM *D3.3

Novel Poly-L-lysine Glycodendrimers as Potent Inhibitors of Adhesion of Fim-H Piliated Uropathogenic E. Coli K12. Rene Roy, Alex Papadopoulos and Tze C. Shiao; Chemistry, UQAM, Montreal, Quebec, Canada.

3:20 PM BREAK

2:00 PM - 4:00 PM

SESSION G: Computational Modeling and Databases
Lecture Room B

* Invited paper

SESSION G2:
Chairs: Raul Cachau and Fernando Gonzalez-Nilo
Thursday Afternoon, June 30, 2011
Lecture Room B

2:00 PM *G2.1

Computer Simulations of Binding between a PAMAM Dendrimer and Human Serum Albumin. Seung Ha Kim and Monica H. Lamm; Department of Chemical and Biological Engineering, Iowa State University, Ames, Iowa.

2:30 PM *G2.2

Advanced Molecular Simulations Strategies for the Study of Dendrimer Behavior in Non-equilibrium Systems. Fernando D. Gonzalez-Nilo¹ and Valeria Marquez-Miranda²; ¹Center for Bioinformatics and Molecular Simulations, University of Talca, Talca, Maule, Chile; ²Nanobiotechnology Division at University of Talca, Fraunhofer Chile Research Foundation - Center for Systems Biotechnology, Talca, Maule, Chile.

3:00 PM G2.3

Partially Glycosylated Dendrimers Block MD-2 and Prevent TLR4-MD-2-LPS Complex Mediated Cytokine Responses. Teresa S. Barata^{1,2}, Ian Teo³, Steve Brocchini², Mire Zloh¹ and Sunil Shaanak³; ¹Department of Pharmaceutical and Biological Chemistry, School of Pharmacy - University of London, London, United Kingdom; ²Department of Pharmaceutics, School of Pharmacy - University of London, London, United Kingdom; ³Department of Medicine, Imperial College London, London, United Kingdom.

3:20 PM BREAK

3:30 PM ROUND TABLE DISCUSSION

3:20 PM - 4:20
SESSION E: Drug Delivery
Green Auditorium

* Invited paper

SESSION E5:
Chair: Elizabeth Gillies
Thursday Afternoon, June 30, 2011
Green Auditorium

3:30 PM **E5.1**

Dendrimer Mediated Lung Targeting of Anticancer Bioactive.

Balak D. Kurmi^{1,2}, Virendra Gajbhiye¹, Umesh Gupta^{1,2}, Alok P.

Jain² and Narendra K. Jain¹; ¹Department of Pharm. Science, Dr. H. S. Gour University, Sagar, Madhya Pradesh, India; ²Pharmacy, Guru Ramdas Khalsa Institute of Technology, Jabalpur, Madhya Pradesh, India.

3:50 PM ***E5.2**

Dendrimers: New Opportunities to Treat and Prevent Human

Disease. David J. Owen, Research Department, Starpharma Pty Ltd, Melbourne, Victoria, Australia.