

Symposium 6

Title: Nanoparticles, Colloids and Interfaces in Medical/Biochemical Diagnostic Applications

Chair: J. Texter

Chair Assistant: Kamel Omrane

Location: Patterson Board Room, Snell

Monday June 13, 2005

Presiding: P. Braun, S. Asher

Paper	Time	Title and Authors
6-01	11:00 - 11:40 AM	Polymerized Colloidal Array Photonic Crystal Chemical Sensors S. A. ASHER
6-02	11:40 - 12:00 AM	Lyotropic Liquid Crystal Templating of Mesoporous Hollow Spheres: A New Route to Materials for Controlled Release and Encapsulation A. Wolosiuk, P.V. BRAUN
6-03	1:30 - 2:10 PM	Rippled Metal Nanoparticles: A New Protein Resistant Material F. STELLACCI
6-04	2:10 - 2:35 PM	Fluorescent Nanoparticles in Cellular Differentiation B. DUBERTRET
6-05	2:35 - 2:50 PM	Nano-Pumps in Hydrgels: Electroosmotic Mass Transport Control M. A. MATOS, R. D. Tilton, L. R. White
6-06	3:20 - 3:45 PM	Highly Luminescent Nanoparticles for in Vivo Cancer Imaging and Detection W. CHEN
6-07	3:45 - 4:10 PM	Harnessing Nanoparticles for Glycobiology T.K.T. NGUYEN
6-08	4:10 - 4:35 PM	Semiconductor Nanocrystals and Their Practical Applications

C. BALLINGER

- 6-09 4:35 - 5:10 PM Quartz Crystal Microbalance Detection of Peptide Epitope Protected Nanoclusters Using Antibody Recognition
A. E. Gerdon, D. E. Cliffel, D. W. WRIGHT
- 6-10 5:10 - 5:35 PM Tumor-targeted Gadolinium Nanoparticles for Neutron Capture Therapy and for MRI Contrast Enhancement
M. JAY, D. Zhu, M. Oyewumi, R. J. Mumper

Tuesday June 14, 2005

Presiding: N. Kotov, C. Ballinger

- 6-11 10:30 - 11:10 AM Strategies for On-Chip Assembly of Sensors and Biomaterials from Live Cells
O. D. VELEV, S. Gupta, R. G. Alargova, L. B. Jerrim, P. K. Kilpatrick
- 6-12 11:10 - 11:35 AM Custom BeadChip Technology for Molecular Diagnostics
S. BANERJEE
- 6-13 11:35 - 12:00 AM Multi-Responsive Microgels: Morphology Control for Optimized Applications
T. HOARE, R. Pelton
- 6-14 1:30 - 2:00 PM Design of Quantum Dot-Protein Bioconjugates for Use in FRET-Based Assays
A. R. Clapp, I. L. Medintz, E. R. Goldman, H. MATTOUSSI
- 6-15 2:00 - 2:25 PM Up-Converting Phosphorescent Probes for Rapid Diagnostic Assays
S. LI, G. Giannaras, R. Perez, M. Fischl, B. Martinez, K. Kardos
- 6-16 2:25 - 2:50 PM Block Ionomer Complexes as Novel Nanomaterials
T. K. BRONICH, A.V. Kabanov
- 6-17 3:20 - 3:45 PM Generation of Functionalized Colloidal Gold Nanoparticles Using Bi-Functional Reducing Agents

G. F. PACIOTTO, L. D. Myer, V. Silin, L. Tamarkin

- 6-18 3:45 - 4:10 PM Integration of Biocompatible Surface Chemistries in the BARC Biosensor System
S. P. MULVANEY, C. C. Cole, M. Malito, J. C. Rife, C. R. Tamanaha, L. J. Whitman
- 6-19 4:10 - 4:35 PM Quantification of the Field Interaction Parameter and the Binding Constants of Several Antibody-Magnetic Nanoparticles Conjugates
J. J. CHALMERS, H. Zhang, M. Zborowski
- 6-20 4:35 - 5:00 PM Preparation of Organic Nanoparticles Using Microemulsions. Their Potential Use in Transdermal Delivery
C. Destrée, J. B. NAGY
- 6-21 5:00 - 5:20 PM Fluorescent Silica Beads for Detection of Cervical Cancer
S. Iyer, Y. Kievesky, C. D. Woodworth, I. SOKOLOV

Wednesday June 15, 2005

Presiding: M. Porter, M. Perez

- 6-22 10:00 - 10:40 AM Fluorescence Analysis of Polymersome and Filomicelle Delivery
D. E. DISCHER, F. Ahmed, P. Dalhaimer
- 6-23 10:40 - 11:05 AM Superparamagnetic Nanoparticle-bound Chlorotoxin for Brain Tumor Imaging
M. ZHANG
- 6-24 11:05 - 11:25 AM Novel Magnetic Nanosensors to Probe for Molecular Interactions in High Throughput Using NMR and MRI
J. M. PEREZ, L. Josephson, R. Weissleder
- 6-25 11:25 - 11:50 AM Selectively Moving Biopolymers Through Functionalized Nanotube Membranes
P. KOHLI, C. R. Martin
- 6-26 11:50 - 12:05 PM Functionalized FePt Nanoparticles Surfaces with Silane

Chemistry

H. G. BAGARIA, D. E. Nikles, E. T. Ada, D. T. Johnson

- 6-27 1:30 - 2:10 PM Biomaterials from Nanocolloids: Applications for Neurons
N. A. KOTOV
- 6-28 2:10 - 2:35 PM Strategies for the Design and readout of Ultrahigh Density
Immunodiagnsotic Platforms
H.-Y. Park, J. Driskell, K. Kwarta, B. Yakes, J. Uhlemkamp,
R. Millen, N. Pekas, J. Nordling, R. J. Lipert, M.D. PORTER
- 6-29 2:35 - 2:50 PM Design of Multidentate Surface Ligands for Biocompatible
Quantum Dots
H. T. Uyeda, K. M. Hanif, A. .R CLAPP, H. Mattoussi
- 6-30 3:20 - 3:45 PM Nucleic Acid Sequence and Protein Identification Using Gold
Nanoparticle Probes and the Verigene _ System
J.J. STORHOFF, Y. P. Bao, S. S. Marla, M. Huber, T-F
Wei, A. D. Lucas, S. Hagenow, V. Garimella, W. Buckingham,
T. Patno, W. Cork, U. R. Müller
- 6-31 3:45 - 4:10 PM Surface Functionalization of Semiconductor Quantum Dots for
Applications in Biological Sensing
M. A. HAHN, T. D. Krauss
- 6-32 4:10 - 4:35 PM Combining Gold Nanoparticles with the Quartz Crystal
Microbalance to Improve the Sensitivity of DNA Detection
T. LIU, J. A. Tang, L. Jiang
- 6-33 4:35 - 4:55 PM Effects of Surfactants and Surface Charge on the Performance
of Latex Immunoagglutination Assays in Vitro and in a
Microfluidic Device
L. J. LUCAS, J. H. Han, J-Y Yoon