WEDNESDAY MORNING

Section A

Marriott Downtown
Salon H

George A. Olah Award in Hydrocarbon or Petroleum Chemistry: Symposium in Honor of Cynthia M. Friend
Bimetallics and Electrocatalysis
Cosponsored by COLL, FUEL, I&EC, PETR, WCC, and PHYS

D. A. Chen and H. Freund, *Organizers*

K. Queeney, *Presiding*

8:30 80. Atomic-scale surface chemistry of catalytically important bimetallic alloys. **E. C. H. Sykes**
9:00 81. Probing selectivity by using reactions of *n*-C_6 hydrocarbons on model Pt-Sn alloy catalysts. **B. E. Koel**
9:30 82. New materials for catalysis. **M. Baeumer**, A. Wittstock, J. Biener, B. Juergens, P. Sonstroem, X. Wang, V. Zielasek, A. Hamza, C. M. Friend
10:00 83. First-principles approaches for improved heterogeneous catalysis. **M. Mavrikakis**
10:30 84. First-principle insights into the mechanisms for the electooxidation of methanol and formic acid. **M. Neurock**
11:00 85. Exploring experimental vibrational spectra of surface intermediates using DFT modeling. **P. Uvdal**
11:30 86. Conduction in confined molecular assemblies. **J. D. Batteas**

Section B

Marriott Downtown
Salon F

Nanotechnology in Catalysis VI
Cosponsored by COLL, FUEL, I&EC, PETR, and NANO

B. Zhou, J. G. Chen, and P. S. Weiss, *Organizers*

J. R. Kitchin, *Presiding*

9:00 87. Engineering selectivity in heterogeneous catalysis: The impact of Ag surface structure (shape of nanoparticle) on selectivity in steady-state catalytic ethylene epoxidation. P. Christopher, **S. Linic**
9:30 88. In situ combined GISAXS and TPR studies of size-selected nanocatalysts: A new approach to investigate size effects in catalysis. **S. Lee**, L. M. Molina, M. J. Lopez, J. M. Alonso, B. Hammer, B. Lee, S. Seifert, R. E. Winans, J. W. Elam, M. J. Pellin, K. Sell, I. Barke, V. von Oeynhausen, K-H. Meiwes-Broer, S. Vajda
10:00 89. First principle modeling of catalyst nanoparticle synthesis. **G. Mpourmpakis**, D. G. Vlachos
10:20 90. First principles calculations of supported catalysts: CO binding on MgO supported gold clusters for the CO oxidation reaction. **G. Mpourmpakis**, D. G. Vlachos
10:40 91. Development and application of 3-D simulator for sintering and grain growth. **A. Suzuki**, K. Nakamura, R. Sato, K. Okushi, M. Koyama, H. Tsuboi, N. Hatakeyama, A. Endou, H. Takaba, C. A. Del Carpio, M. Kubo, A. Miyamoto

Catalysis in Fuel Chemistry
Biomass and Alternative Fuels Sponsored by FUEL, Cosponsored by CATL (probationary)

‡ Cooperative Cosponsorship

WEDNESDAY AFTERNOON

Section A

Marriott Downtown
Salon H

George A. Olah Award in Hydrocarbon or Petroleum Chemistry: Symposium in Honor of Cynthia M. Friend
Surface Characterization and Chemistry
Cosponsored by COLL, FUEL, I&EC, PETR, WCC, and PHYS

D. A. Chen and H. Freund, *Organizers*

R. J. Madix, *Presiding*

2:00 92. Waiting to be made. **R. Hoffmann**
2:30 93. Selective transformations of organic compounds mediated by transition metal complexes. **R. G. Bergman**
3:00 94. Surface plasmon enhanced photoluminescence from noble metal/CdS hybrid semiconductor nanowires. **J. C. Hemminger**, W. Luo, S. C. Kung, R. M. Penner
3:30 95. Environmental catalysis in the Earth's atmosphere: Heterogeneous reactions of trace atmospheric gases on carbonate and oxide surfaces. **V. H. Grassian**
4:00 96. Surface functionalization of aerosol nanoparticles for materials applications. **J. T. Roberts**
4:30 97. Aqueous oxidation of H:Si(100): The critical role of surface etching. **K. Queeney**, M. Kulkarni, S. K. Green
5:00 98. Heterogeneous olefin oxidation studied by vibrational sum frequency generation. **F. M. Geiger**, A. M. Buchbinder, G. Y. Stokes

Section B

Marriott Downtown
Salon F

Nanotechnology in Catalysis VI
Cosponsored by COLL, FUEL, I&EC, PETR, and NANO

B. Zhou, J. G. Chen, and P. S. Weiss, *Organizers*

W. Huang, *Presiding*

1:30 99. CO oxidation by Ti and Al doped ZnO: The heteroatom activation of adsorbed oxygen. **W. Tang**, R. G. S. Pala, E. W. McFarland, H. Metiu
1:50 100. Solar hydrogen production by photo-oxidation of water from doped iron oxide photoanodes. **A. Kleiman-Shwarsctein**, A. Forman, Y-S. Hu, G. D. Stucky, E. W. McFarland
2:10 101. Visual light and oxidants coactivate TiO2 in photocatalyzing AO7 and RhB. **Y. S. Wang**, J. J. Horng
2:30 102. Reuse TiO2 to photocatalyze AO7 and RhB. C. Y. Chang, **J. J. Horng**, Y. S. Wang
2:50 103. Uniform Ni-Co alloy nanoparticle: Chemical synthesis in hydrogen atmosphere and selectively catalytic hydrogenation of p-chloronitrobenzene. **H. Zhang**, G. Que, D. Liu

Catalysis in Fuel Chemistry
Characterization of Catalytic Systems Sponsored by FUEL, Cosponsored by CATL (probationary)

THURSDAY MORNING

Section A

Marriott Downtown
Salon H

Catalysis for Coal Conversion Cosponsored by FUEL and I&EC

B. H. Davis, *Organizer*

8:30 104. Coal liquefaction: The reaction pathway and the politics. **B. H. Davis**, R. A. Keogh
8:55 105. Withdrawn.
9:20 106. Solid-state hydrogenation/hydrogenolysis of high-rank bituminous coals with gaseous catalysts. **M. W. Haenel**, U-B. Richter, A. Rufinska
9:45 107. Recent advances in direct coal liquefaction technology. **J. Lepinski**, S. Tam, T. Lee
10:10 108. A XANES and XRD study of a Cr-promoted Fe-based FT catalyst. **A. Campos**, N. Lohitharn, G. Merchan, E. Lotero, A. D. Roy, J. G. Goodwin Jr., J. J. Spivey
10:35 109. Effect of ruthenium deposition order on cobalt Fischer Tropsch catalysts. **K. M. Cook**, R. P. S. Peguin, W. C. Hecker, C. H. Bartholomew
11:00 110. Group 11 promotion of cobalt Fischer-Tropsch synthesis catalysts. **G. Jacobs**, W. Ma, M. Ribeiro, Y. Ji, B. H. Davis
11:25 111. Effect of phosphorus on the acidity and catalytic performance of ZSM-5 with alumina binder for dehydration of methanol to dimethyl ether. **Q. Fu**

Catalysis in Fuel Chemistry
Catalysis for Fuel Cells Sponsored by FUEL, Cosponsored by CATL (probationary)

THURSDAY AFTERNOON

Catalysis in Fuel Chemistry
Carbon Catalysis Sponsored by FUEL, Cosponsored by CATL (probationary)

CELL

Division of Cellulose & Renewable Materials

S. J. Eichhorn and O. J. Rojas, *Program Chairs*

SOCIAL EVENT:
AP Banquet, 7:00 PM: Tue

BUSINESS MEETINGS:
1. Executive Committee Meeting, 5:00 PM: Sat
2. Division Program Meeting, 5:00 PM: Mon
3. Open Business Meeting, 5:30 PM: Wed

SUNDAY MORNING

Section A

Marriott Downtown
Salon G

Anselme Payen Symposium: Wood Components: Molecular Structure, Nanoarchitecture and Source for Functionalized Biomaterials Cosponsored by NANO

T. Rosenau, O. J. Rojas, and T. Umezawa, *Organizers*

T. Kimura and J. F. Kadla, *Organizers, Presiding*

7:55 Introductory Remarks.
8:00 1. Transgenic trees as potential feedstock for bioethanol production. **V. L. Chiang**
8:30 2. In vitro beta-glucan synthesis of plant cells. Y. Horikawa, C. Ito, T. Imai, V. Bulone, **J. Sugiyama**
9:00 3. Stereochemical mechanisms for lignan and norlignan biosynthesis. T. Nakatsubo, M. Yamamura, S. Suzuki, H. Takefumi, **T. Umezawa**
9:30 4. Novel polymeric materials derived from wood components. **A. Gandini**
10:00 Intermission.
10:15 5. Novel synthesis of gold nanoparticles for in situ conjugation with various carbohydrates via an NMMO-mediated redox reaction. **T. Kitaoka**, S. Yokota, M. Opietnik, T. Rosenau
10:45 6. Platform chemicals from a hardwood biorefinery. **B. Saake**, A. Schreiber, J. Puls
11:15 7. Molecular mechanisms in wood pyrolysis. **H. Kawamoto**

Please refrain from using cellular telephones and cameras during technical sessions.

Section B

Marriott Downtown
Salon C

Cellulose in Conservation Science

A. Potthast, *Organizer*

8:25 Introductory Remarks.
8:30 8. Chemistry for conservation of artworks. **H. Roemich**
9:00 9. Mass deacidification technology in Germany and its quality control. **G. Banik**, T. Doehring
9:30 10. Hydroxide nanoparticles for deacidification of paper and waterlogged wood. **P. Baglioni**, R. Giorgi, G. Poggi
10:00 Intermission.
10:15 11. Mass spectroscopic analysis of soluble cellulose oligomers in naturally and artificially aged paper. **C. H. Stephens**, B. Shrestha, P. M. Whitmore, H. R. Morris, M. E. Bier, A. Vertes
10:45 12. Degradation of cellulose: Classical isothermal vs. UV laser accelerated aging. **J. Jalbert**, M. A. El Khakani, R. Gilbert
11:15 13. Cellulose depolymerization induced by iron gall inks: The impact of ink ingredients, oxygen and humidity. **V. Rouchon**, K. Janssens, C. Burgaud, A. Dorsch, M. Duranton, G. Nuyst, Y. Vercammen

Section C

Marriott Downtown
Deer Valley 1

Studies of Molecular Structure of Renewable Material

R. Woods and A. French, *Organizers, Presiding*

7:55 Introductory Remarks.
8:00 14. Side reactions of cellulose with common 1-alkyl- 3-methylimidazolium-based ionic liquids. **T. Rosenau**, A. Potthast, G. Ebner
8:30 15. Structural pathways in the treatment of cellulose with amines. M. Wada, Y. Nishiyama, L. Heux, H. Chanzy, **P. Langan**
9:00 16. Secondary cell wall development in cotton fibers. **N. Abidi**, E. Hequet, L. Cabrales
9:30 17. Identifying molecular structural features of biomass recalcitrance using nondestructive microscopy and spectroscopy. **S-Y. Ding**
10:00 Intermission.
10:15 18. Self-assembly of cellulose polymers: Insights into different crystalline forms. **T. Shen**, P. Langan, A. D. French, G. P. Johnson, S. Gnanakaran
10:45 19. On the external morphology of the native cellulose fibres. **K. Mazeau**
11:15 20. Quantitative analysis of cellulose-hydrazine complexation. **X. Su**, S. Kimura, M. Wada, S. Kuga

SUNDAY AFTERNOON

Section A

Marriott Downtown
Salon G

Anselme Payen Symposium: Wood Components: Molecular Structure, Nanoarchitecture and Source for Functionalized Biomaterials Cosponsored by NANO

T. Kimura, J. F. Kadla, and T. Umezawa, *Organizers*

T. Rosenau and O. J. Rojas, *Organizers, Presiding*

1:30 21. Novel glycosyl donors for enzyme-catalyzed oligosaccharide synthesis. **S-I. Shoda**, T. Tanaka, M. Noguchi, A. Kobayashi
2:00 22. Novel cellulosic materials with controlled properties. **J. F. Kadla**
2:30 23. TEMPO-mediated oxidation of cellulose and other polysaccharides. **A. Isogai**
3:00 Intermission.
3:15 24. Preparation of different biobased nanoparticles and their use in biomaterials. D. Viet, G. Siqueira, J. Bras, **A. Dufresne**
3:45 25. Computational studies on the mechanism of the optical resolution of cellulose derivatives. **K. Ueda**, R. Ootaki
4:15 26. Interactions between polysaccharide ester and other molecules. **T. Shibata**, A. Ohnishi

Section B

Marriott Downtown
Salon C

Cellulose in Conservation Science

A. Potthast, *Organizer*

1:30 27. Reduction treatments on oxidized cotton linters. **U. Henniges**, S. Schiehser, A. Potthast
2:00 28. Cellulose is not yet art: Considering the treatment of drawings by Caspar David Friedrich. **I. Brückle**
2:30 29. Evaluation of hydrolysis and oxidation in Korean traditional handmade paper using size-exclusion chromatography. **M-J. Jeong**, A. Potthast, S-Y. Jeong, B-M. Jo
3:00 Intermission.
3:15 30. Formation of brown lines and degradation of cellulose at the wet-dry interface in paper. **A-L. C. Dupont**, Z. Souguir, E. R. de la Rie
3:45 31. Identification of materials used as preventive measures in Persian manuscripts and miniature paintings. M. Barkeshli
4:15 32. Ink-induced corrosion of cellulose: Aging, degradation and stabilization. **A. Potthast**, U. Henniges, G. Banik

Section C

Marriott Downtown
Deer Valley 1

Studies of Molecular Structure of Renewable Material

R. Woods and A. French, *Organizers, Presiding*

1:30 33. Submersion torsion DMA of yellow-poplar wood: Influence of pH and grain orientation. **C. Frazier**, J. Fabiyi

The official technical program for the 237th National Meeting is available online at oasys2.confex.com/acs/237nm/techprogram/.

2:00 34. On crystallinity of cellulose observed with Raman spectroscopy. **T. Hänninen**, E. Kontturi, L. Heiskanen, T. Virtanen, S. L. Maunu, T. Vuorinen
2:30 35. Hydrogen bonding in the methanol dimer. **A. D. French**, G. P. Johnson, G. I. Csonka
3:00 Intermission.
3:15 36. Theoretical studies of the γ-*gauche*, conformation, and hydrogen bonding effects on ^{13}C chemical shifts for D-glucose and cellobiose units by quantum chemistry calculations. **F. Horii**, S. Suzuki, H. Kurosu
3:45 37. X-ray diffraction and quantum mechanical studies of the electron density in α,α-trehalose dihydrate. **E. D. Stevens**, M. K. Dowd, G. P. Johnson, A. D. French
4:15 38. Molecular dynamics simulations of raffinose family oligosaccharides. **R. J. Woods**, G. P. Johnson, A. D. French, N. W. H. Cheetham, R. P. Metzger

SUNDAY EVENING

Section A

Salt Palace Convention Center
Hall 5

CELL Poster Session

S. J. Eichhorn, *Organizer*

5:00–7:00
39. Mediators-boosted enzymatic bleaching of eucalyptus kraft pulp. D. Moldes, M. D. Gonzalez, **T. Tzanov**, T. Vidal
40. Self-decontaminating catalytic fabrics against chemical warfare agents. **Y. Lee**
41. Fluoride ion-detecting enzyme screening of cellulase catalysts. **M. Ishihara**, M. Noguchi, A. Kobayashi, S-I. Shoda
42. A new approach to produce plant antioxidants-loaded chitosan for medical applications. **G. Rocasalbas**, A. Francesko, M. Díaz González, S. Touriño, J. L. Torres, T. Tzanov
43. Adsorption and penetration of polyelectrolytes in nanoporous surfaces. **N. Wu**, M. Hubbe, O. J. Rojas
44. Antioxidant activity assay based on laccase-generated radicals. **G. S. Nyanhongo**, N. P. Endry, T. Kudanga, W. Steiner, M. Murkovic, G. Guebitz
45. Antiparasitic materials based on quaternary ammonium salts. **J. I. Rizzo**, R. Engel, C. Rivera, J. Ponessa, M. Morada, D. Athanasopoulos, N. Yarlett
46. ATRP modification of nanocellulose substrates. **J. Zoppe**, Y. Habibi, K. Efimenko, J. Genzer, O. J. Rojas
47. Biodegradable plastics and blends from renewable feedstocks. **N. J. Stam**, A. J. Stipanovic
48. Cellulose modifications and their future application. **S. Chang**, B. Condon, J. V. Edwards, N. Prevost
49. Characterization of nanocomposite thin films containing cellulose nanocystals. **N. L. Netzer**, Q. Zhang, R. S. Reiner, **C. Jiang**
50. Characterization of the thermal behaviors of polyphenol stearates. **W. Grigsby**, C. Luo, N. Edmonds, A. J. Easteal, J. Al-Hakkak
51. Corrosion protection of steel by thin coatings of starch-oil emulsions. **V. L. Finkenstadt**, J. A. Kenar, G. F. Fanta
52. Degree of polymerization (DP) of cellouronic acid prepared from ball-milled native celluloses by TEMPO-mediated oxidation. **T. Isogai**, A. Isogai
53. Effect of cellulase enzymes on the morphology and crystal structure of cellulose. **J. L. Spiese**, A. J. Stipanovic, W. T. Winter, D. B. Wilson
54. Effect of secondary structure of polypeptides on properties of their nanocomposites. **M. Eldessouki**, Y. Gowayed, G. Buschle-Diller
55. Egg albumin: Modification and characterization for hydrogel applications. **N. K. Budhavaram**, J. R. Barone
56. Electrospinning of cellulose scaffolds for tissue engineering. K. Rodriguez, S. H. Renneckar, **P. Gatenholm**
57. Encapsulated cellulose. **P. M. Uschanov**, S. L. Maunu
58. Enzymatic degradation of cellulose nanocrystals under physiological conditions. **D. A. R. Illing**, F. Jiang, A. A. Hirani, Y. Lee, M. Roman
59. Enzymatic production of cellulose esters. **S. Gremos**, C. Dourou, D. Kekos, F. Kolisis
60. Enzymatically nanoengineered hydrogels from protein and chitosan for controllable diffusion and drug release properties. D. S. Jus, D. I. Serša, **D. V. Kokol**
61. Evaluation of poly(lactic acid) blended with modified polyphenolics as precursors for carbon fiber generation. **W. Grigsby**, J. F. Kadla
62. Extraction of chitin nanofibers from crab shell by simple mechanical technique. **M. I. Shams**, M. Nogi, H. Yano
63. Nanocomposites reinforced with polycaprolactone-grafted cellulose nanocrystals. **Y. Habibi**, A. Dufresne
64. Flocculation of kaolin by waxy maize starch phosphates. **R. L. Shogren**
65. Functional versatility of cellulose derivatives having a hetero atom in the side chains: P-containing derivatives as flame resistant/retardant materials. **D. Aoki**, Y. Nishio
66. Hydrolysis of cellulose utilizing ionic liquid based technology. **J. J. Mandia**, W. M. Reichert, P. C. Trulove, H. DeLong
67. Immobilization of biomolecules on soluble and insoluble polymers. **A. Rollett**, K. Schneider, R. Fischer, A. Marold, T. Flock, G. Guebitz, M. Schroeder
68. Modification of lignans by Trametes hirsuta laccase. **M-L. Mattinen**, K. Struijs, T. Suortti, I. Mattila, K. Kruus, S. Willför, T. Tamminen, J-P. Vincken
69. Impact of two engineered cellulases toward cotton cellulose. **C. Caparrós**, A. Cavaco-Paulo
70. In situ synthesis of CdS quantum dots to illuminate the ordered patterns of cellulose derivative cholesteric liquid crystal induced by photopolymerization. W. Wang, **R. Liu**, W. Liu, J. Tan, W. Liu, L. Ma, K. Zheng, Y. Tian, Y. Li, Y. Huang
71. Influence of mechanical treatment on the morphology of cellulose microfibrils isolated from banana rachis. R. Zuluaga, J. L. Putaux, C. Castro, I. Mondragon, **P. Gañán**
72. Influence of phenol-graft treatment on physical-mechanical properties of plantain fiber binderless boards. C. Alvarez, **P. Gañán**
73. Ink-jet printed cellulose nanocrystal substrates for cell micropatterning. **D-C. Choi**, F. Navarro, A. A. Hirani, Y. Lee, M. Roman
74. Mechanical properties of cellulose single nanofiber measured by atomic force microscopy. **S. Iwamoto**, K. Weihua, T. Iwata, A. Isogai
75. Modification of different cellulose polymorphs by formaldehyde treatment. **T. Hänninen**, E. Kontturi, T. Vuorinen
76. Nanoclay content effect on thermomechanical properties of nanobiocomposites. **S. O. Han**, K. J. Sim
77. Nanocomposite materials reinforced with cellulose microfibrils extracted from palm tree. A. Bendahou, H. Kaddami, **A. Dufresne**
78. Nanocomposites materials reinforced with cellulose whiskers from date palm tree. **A. Bendahou**, H. Kaddami, **A. Dufresne**
79. Nanocomposites of cellulose nanocrystals produced by electrospinning and their applications. **J. Zoppe**, M. S. Peresin, Y. Habibi, O. J. Rojas
80. One-step biodiesel production from yellow grease. **B. Wen**, J. P. Zhang, G. Wen
81. Oxidation of polysaccharides by TEMPO/$NaClO_2$/NaClO. **N. Tamura**, M. Hirota, A. Isogai
82. Porous bacterial cellulose as a scaffold for bone regeneration. M. Zaborowska, H. Bäckdahl, J. Popp, A. Goldstein, **P. Gatenholm**
83. Preparation and characterization of cellulose nanocrystals from Acer saccharum pulps. **K. Cheng**, W. T. Winter
84. Preparation and reconstitution of mixed biopolymer nanocomposites from ionic liquids. **T. A. Isaacs**, E. C. Page, L. M. Haverhals, W. M. Reichert, H. C. De Long, P. C. Trulove
85. Quantitative analysis of pyrolysis products of Japanese Red Pine wood meal. **K. Nishikiori**, T. Yokoyama, Y. Matsumoto
86. R&D for a new nanofiber sheet, cellulose nanofiber nonwoven fabrics. **N. Okayama**, M. Nakamura, H. Ono
87. Real-time monitoring of enzymatic hydrolysis of cellulose. **P. Resa**, V. Buckin
88. Reductive N-alkylation of chitosan and its application to organic radical battery. **Y. Kurita**, T. Yasuda, T. Kato, A. Isogai
89. Relationship between moisture sorption and morphology of polylactide determined by quartz crystal microbalance. **D. Koo**, A. Du, R. A. Cairncross
90. Structural organization of lignin-carbohydrate composite. **K. G. Bogolitsyn**
91. Structured catalyst for biodiesel production. **J. P. Zhang**, B. Wen, G. Wen
92. Studies on the macromolecular components of major nonwood of Bangladesh. **M. S. Jahan**
93. Study on the development of biodegradable polymer film from collagen–PVA(polyvinyl alcohol) complex. **W. Kim**, E. Shin, S. Lee
94. Synthesis and characterization of sugar-based surfactant. **N. Wang**, L. A. Lucia, O. J. Rojas
95. Synthesis of stimuli-sensitive graft copolymers based on hydroxypropyl cellulose by ATRP and sensitivity in aqueous solution. L. Ma, **R. Liu**, M. Wu, Y. Huang
96. The adsorption of some organic liquids onto the main constituents of wood and the pore structure of wood. **T. Nakatani**, M. Ohkoshi, Y. Furuta, Y. Ishimaru
97. The synthesis of pH sensitive gold nanoparticles by "bricks and mortar" method using carboxymethylcellulose and cysteamine. J. Tan, **R. Liu**, W. Wang, W. Liu, K. Zheng, M. Wu, Y. Tian, Y. Li, D. Wang, L. Ma, W. Liu, Y. Huang
98. The wet spinning of hydroxypropyl methylcellulose. **I. C. Um**, H. B. Jo
99. Thermoreversible gelation of methylcellulose and hydroxypropyl methylcellulose in aqueous solution. **H. Yu**, O. Kelly, J. P. A. Fairclough, A. J. Ryan
100. Water interactions for various types of microfibrillated cellulose. **K. L. Spence**, R. A. Venditti, O. J. Rojas, J. J. Pawlak
101. Stimuli-responsive polyampholyte and its adsorption behavior on model surfaces. **D. Silva**, O. J. Rojas, M. Hubbe, S. W. Park
102. Cellulose nanocrystals as fillers for electrospun PCL nanocomposite scaffolds. X. Cao, **M. A. Ramirez Vicens**, W. L. Esteves Magalhaes, E. G. Loboa, L. A. Lucia
103. NIR chemometric approach on the structural variety of cellulose samples. **Y. Horikawa**, T. Imai, J. Sugiyama

MONDAY MORNING

Section A

Marriott Downtown
Salon G

Anselme Payen Symposium: Wood Components: Molecular Structure, Nanoarchitecture and Source for Functionalized Biomaterials Cosponsored by NANO

T. Rosenau, T. Kimura, and O. J. Rojas, *Organizers*

J. F. Kadla and T. Umezawa, *Organizers, Presiding*

8:00 104. A round robin test on gel permeation chromatography of cellulose: Coming closer to a standard protocol. **A. Potthast**, T. Rosenau, P. Kosma, B. Saake, S. Lebioda, W. Vorwerk, H. Wetzel, A. Koschella, T. Heinze, G. Strobin, H. Sixta, M. Strlic, A. Isogai
8:30 105. Further evaluation of the detailed structure of native cellulose by high-resolution solid-state NMR. **F. Horii**
9:00 106. Diffraction from nonperiodic models of cellulose. Y. Nishiyama, G. P. Johnson, J. Matthews, **A. D. French**
9:30 107. Direct molecular imaging of wood components using TOF-SIMS. **K. Fukushima**, K. Saito
10:00 Intermission.
10:15 108. Synthesis of acidic xylooligomer model compounds. W. Herok, B. Abad-Romero, G. Sixta, C. Gruber, H. Sixta, **P. Kosma**

10:45 109. Molecular changes of cellulose during tensile deformation revealed by FTIR spectroscopy. **L. Salmén**
11:15 110. Magnetic orientation for analyzing and utilizing cellulose. **T. Kimura**, F. Kimura
11:45 111. Toward a comprehensive understanding of cellulose swelling and dissolution at a molecular level. **T. Rosenau**, A. Potthast, C. Jäger, F. Nakatsubo, A. D. French, K. Mereiter

Section B

Marriott Downtown
Salon C

Wood Polymer Surfaces

M. Österberg, *Organizer*

P. Stenius, *Organizer, Presiding*

8:25 Introductory Remarks.
8:30 112. Present state of modeling wood polymer surfaces. **M. Österberg**
9:00 113. Alternating layers of amorphous and crystalline cellulose in thin films. **E. Kontturi**
9:30 114. Langmuir-Schaffer thin films of cellulose nanocrystals and their interfacial behavior. **I. Hoeger**, Y. Habibi, S. Kelley, O. J. Rojas
10:00 Intermission.
10:15 115. Diversely textured nanostructured cellulose surfaces from polystyrene/trimethylsilyl cellulose blends. **L. Nyfors**, M. Suchy, J. Laine, E. Kontturi
10:45 116. Adsorption of polymers on cellulose nanofibril model surfaces: Effect on nanofibril water binding capacity and aggregation. **P. Myllytie**, S. Ahola, M. Österberg, T. Teerinen, J. Laine

Section C

Marriott Downtown
Deer Valley 1

Biomedical Applications of Polysaccharide-based Materials

P. Gatenholm and S. J. Eichhorn, *Organizers*

7:55 Introductory Remarks.
8:00 117. Bacterial cellulose in tissue engineering and organ replacement applications. **P. Gatenholm**, A. Bodin, H. Bäckdahl
8:30 118. Bacterial cellulose hydrogels as bioactive implants: Recent state and challenges. **D. Klemm**, F. Kramer, B. M. Sultanova, N. Heßler, D. A. Schumann
9:00 119. Controlling cell morphology using amino acid modified cellulose. **S. J. Eichhorn**, D. Kalaskar, R. Ulijn, J. E. Gough, M. Alexander, D. Scurr, W. W. Sampson
9:30 120. Cellulose and cellulose derivatives in biomedical materials: Tools to propose the chemical structure by mass spectrometry. **S. Karlsson**, D. Momcilovic, J. Enebro
10:00 Intermission.
10:15 121. Effects of processing conditions on starch microcellular foams produced by reactive supercritical fluid extrusion and solvent exchange. S. Patel, **R. A. Venditti**, J. J. Pawlak, A. Ayoub, S. S. H. Rizvi
10:45 122. Encapsulation and release of drugs from microspheres prepared with esterified fructans from tequila agave plant. **G. Toriz**, J. C. Arboleda, E. Delgado, R. Starbird, M. A. Escalante

‡ Cooperative Cosponsorship

MONDAY AFTERNOON

Section A

Marriott Downtown
Salon G

Anselme Payen Symposium: Wood Components: Molecular Structure, Nanoarchitecture and Source for Functionalized Biomaterials Cosponsored by NANO

T. Rosenau, T. Kimura, J. F. Kadla, and O. J. Rojas, *Organizers*

T. Umezawa, *Organizer, Presiding*

1:00 123. Quantitative relationships between structure of lignin and its reactivity. **Y. Matsumoto**
1:30 124. Raman spectra of lignocellulosics: Applications in the plant biomass to biofuels arena. **R. H. Atalla**, F. Adar
2:00 125. Synthesis of artificial lignin polymer. **T. Kishimoto**, Y. Uraki, M. Ubukata, M. Hamada, N. Nakajima
2:30 126. Microcomposition of isolated lignins and synthetic polymers: Mixing scale estimation and material functionalization. **Y. Teramoto**, S-H. Lee, T. Endo, Y. Nishio
3:00 Intermission.
3:15 127. Lignin for material applications. **G. Gellerstedt**, J. Li
3:45 128. Functions of LCC and its related meterials. **Y. Uraki**
4:15 129. Horseradish peroxidase-catalyzed dehydrogenative polymerization of monolignol beta-glycosides. **T. Takano**, Y. Tobimatsu, H. Kamitakahara, F. Nakatsubo

Section B

Marriott Downtown
Salon C

Wood Polymer Surfaces

P. Stenius, *Organizer*

M. Österberg, *Organizer, Presiding*

2:00 130. Cellulose model surfaces of different crystalline characteristics and their evaluation in enzyme adsorption and hydrolysis. **M. Suchy**, M. Linder, S. Yokota, T. Kitaoka, T. Vuorinen, E. Kontturi
2:30 131. Effect of cellulose crystallinity on cellulase adsorption. **G. Hu**, J. A. Heitmann, O. J. Rojas
3:00 Intermission.
3:15 132. Interactions between wood derived hemicelluloses and cellulose. **T. Tammelin**, A. Paananen, M. Österberg
3:45 133. Nonelectrostatic building of biomimetic cellulose-hemicellulose multilayers. **B. Jean**, L. Heux, F. Dubreuil, G. Chambat, F. Cousin
4:15 134. XPS surface composition of extractive-free pulps: Correction for carbon contamination. **D. G. Gray**

Section C

Marriott Downtown
Deer Valley 1

Biomedical Applications of Polysaccharide-based Materials

P. Gatenholm and S. J. Eichhorn, *Organizers*

1:00 135. Alkenyl derivates of galactoglucomannan for renewable hydrogels design. **J. Voepel**, U. Edlund, A-C. Albertsson
1:30 136. Investigating the role of charge on cotton materials designed to intervene in the hemostatic and inflammatory stages of wound healing. **J. V. Edwards**, P. S. Howley, B. Condon, S. Batiste
2:00 137. Preparation and characterization of liposomes as therapeutic delivery systems of diclofenac. **H. S. C. M. Ferreira**, R. J. M. Silva, A. Cavaco-Paulo
2:30 Intermission.
2:45 138. Preparation and characterization of natural hydrogels based on chitosan and hemicelluloses. **A. M. Karaaslan**, M. A. Tshabalala, Y. Gowayed, G. Buschle-Diller
3:15 139. Synthesis and testing of an improved antimicrobial siloxane copolymer. **S. D. Worley**, L. Kou, X. Ren
3:45 140. The effect of composition of poly (acrylic acid and acryl amide)-chitosan based hydrogel on pH sensitive drug release: In vitro. **S. Ghosh**, S. Yadav
4:15 141. Ultra lightweight cellulosic aerogels: Preparation and properties. **F. W. Liebner**, A. Potthast, T. Rosenau, E. Haimer, D. Loidl, S. Tschegg, M-A. Neouze, M. Maitz, P. Seib, C. Werner
4:45 Concluding Remarks.

Catalysis for Cellulosic Feedstock Conversion Sponsored by CATL (probationary), Cosponsored by CELL, COLL, FUEL, I&EC, and PETR

MONDAY EVENING

Section A

Salt Palace Convention Center
Hall 5

Sci-Mix

S. J. Eichhorn, *Organizer*

8:00–10:00
40-42, 46-47, 49-50, 52, 55, 58, 61, 66, 69, 71, 73, 76, 79, 83-84, 87, 90, 92, 96, 99-101. See previous listings.

TUESDAY MORNING

Section A

Marriott Downtown
Solitude

Anselme Payen Symposium: Wood Components: Molecular Structure, Nanoarchitecture and Source for Functionalized Biomaterials Cosponsored by NANO

T. Rosenau, T. Kimura, and T. Umezawa, *Organizers*

O. J. Rojas and J. F. Kadla, *Organizers, Presiding*

8:00 142. Cationic surface functionalization of cellulose nanocrystals. M. Hasani, E. D. Cranston, **D. G. Gray**
8:30 143. Thermal properties of cellulose nanofiber nonwoven fabrics. **H. Ono**, M. Nakamura, N. Okayama
9:00 144. Freestanding multilayer thin film of cellulose nanocrytals. **C. Jiang**
9:30 145. New hybrid materials from cellulose gel. **S. Kuga**, J. Cai, H. Narita, N. Isobe
10:00 Intermission.
10:15 146. Spruce galactoglucomannans are potential novel biopolymers for films, microcapsules and emulsions. K. S. Mikkonen, M. I. Heikkilä, P. Laine, K. Parikka, C. Xu, S. Willför, **M. Tenkanen**
10:45 147. Preparation of composite gels from cellulose and other polysaccharides with ionic liquids. **J-I. Kadokawa**
11:15 148. Ionic liquids for modification and processing of cellulose. **W. Mormann**, W. Leng, M. Wezstein

Section B

Marriott Downtown
Park City

Green Chemistry for Cosmetic, Detergent and Medical Applications

A. Cavaco-Paulo, Y. Gizaw, G. M. Guebitz, and G. Buschle-Diller, *Organizers*

8:25 Introductory Remarks.
8:30 149. Integration of green chemistry with sustainability in the formulation of consumer products. **D. J. Versteeg**, M. Macyruhe, D. Sabaliunas
9:00 150. Boosting the performance of biodetergent formulations with photozymes. **C. Díaz Blanco**, T. Tzanov
9:30 151. Green and clean: Uses of green chemistry in industrial cleaning. **A. V. A. Lombard**
10:00 Intermission.
10:15 152. Quantitative detection of radical species in oxidizing solutions. **C. Crestini**, J. Marsh
10:45 153. Selfsterilizing photobactericidal textile materials produced by simple dyeing process. **N. Liu**, G. Sun
11:15 154. Trigger enzymes for pectin based bioresponsive polymers. **K. Schneider**, A. Rollett, M. Schroeder, F. Kaufmann, G. Guebitz
11:45 155. In situ synthesis of magnetic cellulose microspheres for bioapplications. **L. Zhang**

Section C

Marriott Downtown
Deer Valley 1

Protein Adhesives, Hydrogels, Films, Sponges, and Scaffolds

J. M. Cardamone, *Organizer*

8:25 Introductory Remarks.
8:30 156. Keratin materials from wool. **J. M. Cardamone**
9:00 157. Modification of proteins by tyrosinase and laccase. **M-L. Mattinen**, E. Monogioudi, M. Hellman, E. Selinheimo, K. Kruus, H. Gruppen, J. Buchert
9:30 158. Rheological and tribological investigation of protein interactions in synovial fluid. **R. R. Klossner**, J. Liang, W. E. Krause
10:00 Intermission.
10:15 159. Switch on-switch off system for the inhibition of elastase on wound exudates. **A. Vasconcelos**, R. J. M. Silva, S. M. Barros, A. Cavaco-Paulo
10:45 160. Soyprotein fibers for potential use as substrates for tissue engineering. **Y. Yang**, N. Reddy
11:15 161. New general enzymatic fibre modification concept. **H-P. Call**, S. Call
11:45 162. Enzymatic process for multifunctional protein fibres. **K. M. G. Hossain**, M. Díaz González, G. Rocasalbas Lozano, T. Tzanov
12:15 Concluding Remarks.

TUESDAY AFTERNOON

Section A

Marriott Downtown
Solitude

Anselme Payen Symposium: Wood Components: Molecular Structure, Nanoarchitecture and Source for Functionalized Biomaterials Award Lecture Cosponsored by NANO

J. F. Kadla, O. J. Rojas, and T. Umezawa, *Organizers*

T. Rosenau and T. Kimura, *Organizers, Presiding*

2:00 163. Cellulose-DNA hybrid nanomaterials. **A. P. Mangalam**, J. Simonsen, A. S. Benight
2:30 164. Research and application of optically transparent wood-cellulose nanocomposites. **H. Yano**, Y. Okahisa, K. Abe, S. Iwamoto, M. Nogi
3:00 165. Cellulose interfacial behaviors and interactions. **O. J. Rojas**

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3:30 166. Functional versatility of cellulose derivatives having a hetero atom in the side chains: SH-containing derivatives as a shape memory-recovery material. **Y. Nishio**, D. Aoki, Y. Teramoto
4:00 167. White biotechnology of cellulose: Potential and new vistas. **D. O. Klemm**, F. Kramer, D. Kralisch, N. Heßler, R. Erdmann, W. Schmidt
4:30 Intermission.
4:40 168. Studies of wood components, cellulose, lignin and tannins based on organic synthetic strategy. **F. Nakatsubo**

Section B

Marriott Downtown
Park City

Green Chemistry for Cosmetic, Detergent and Medical Applications

A. Cavaco-Paulo, Y. Gizaw, G. M. Guebitz, and G. Buschle-Diller, *Organizers*

1:00 169. Functionalized biopolymer platforms for inhibition of chronic wound enzymes. **A. Frančesko**, G. Rocasalbas, M. Díaz González, T. Tzanov
1:30 170. Modification of polyurethane to reduce occlusion of enteral feeding tubes. **S. C. Goheen**, K. Gaither, B. J. Tarasevich
2:00 171. Purification and characterization of human hair melanin degradating enzymes. **K. Koike**
2:30 172. Functionalization of keratin matrixes for cosmetic and biotechnological applications. **M. Fernandes**, A. Cavaco-Paulo
3:00 173. Functionalization of lignocellulosic materials using laccase. **G. Guebitz**, T. Kudanga, N. P. Endry, J. Sipilä, P. Nousiainen, A. Kandelbauer, P. Widsten, G. S. Nyanhongo
3:30 174. Peptides microspheres preparation by ultrasound and their characterization. **R. J. M. Silva**, O. Grinberg, H. S. C. M. Ferreira, A. C. Gedanken, A. Cavaco-Paulo
4:00 175. Surface-modified electrospun nanofibers for biomedical applications. **Z. Xie**, G. Buschle-Diller

Section C

Marriott Downtown
Deer Valley 1

Nanotechnology and Biobased Nanocomposites Cosponsored by NANO

W. Y. Hamad, J. Simonsen, and L. A. Lucia, *Organizers*

1:25 Introductory Remarks.
1:30 176. Structure-property-yield interrelations in nanocrystalline cellulose extraction. **W. Y. Hamad**, T. Q. Hu
2:00 177. Generation of organic nanolayers on textile surfaces and their interactions with substrate components. **X. Liu**, O. J. Rojas, J. Genzer, B. Pourdeyhimi, T. Theyson
2:30 178. Structure and properties of electrospun cellulosic fibers from kraft pulp. **S. Yeoh**, W. Y. Hamad, F. Ko
3:00 179. Electrospun nanocomposites of cellulose nanocrystals in poly(caprolactone) and poly(vinyl alcohol) for various applications. **M. S. Peresin**, **J. Zoppe**, Y. Habibi, O. J. Rojas
3:30 180. Fabrication and characterization of self-assembled chitosan/lignin nanofilm. **R. Qin**, W. Tang, J. Dong, Q. Shen
4:00 181. Preparation of chitin nanofibers from crab shell and optically transparent composites reinforced with the nanofibers. **S. Ifuku**, M. Nogi, K. Abe, M. Yoshioka, M. Morimoto, H. Saimoto, H. Yano

WEDNESDAY MORNING

Section A

Marriott Downtown
Salon G

Micro- and Nanofibers from Renewable Materials Cosponsored by PMSE‡ and NANO

G. W. Selling and M. W. Frey, *Organizers*

7:55 Introductory Remarks.
8:00 182. Biodegradable nanofibers for controlled release chemical delivery. **M. W. Frey**, C. Xiang
8:30 183. Micrometer and submicrometer cellulose fibers from co-electrospinning. **W. L. E. Magalhaes**, X. Cao, L. A. Lucia
9:00 184. Cellulose acetate propionate electrospun scaffolds for cellular growth. M. T. Hunley, K. R. Barras, J. M. Layman, **T. E. Long**
9:30 185. Electrospun fluorescent cellulose triacetate fibers containing quantum dots. **T. Abitbol**, J. T. Wilson, D. G. Gray
10:00 Intermission.
10:15 186. Self-assembled amyloid fibrils from trypsin-hydrolyzed wheat gluten under benign conditions. **A. I. Athamneh**, J. R. Barone
10:45 187. Ultrafine fibers produced from immiscible polymer solution blend systems. **G. Sun**, L. Yu, L. Gu
11:15 188. Chemical interactions while electrospinning wheat gluten/thiolated additive blends from aqueous solutions. **J. Dong**, A. D. Asandei, R. Parnas

Section B

Marriott Downtown
Salon C

Advances in Chemistry and Utilization of Lignin

W. Glasser, *Presiding*

F. W. Liebner, *Organizer, Presiding*

7:55 Introductory Remarks.
8:00 189. Lignin utilization: Retrospect and prospect. **W. G. Glasser**
8:30 190. Lignin-based nanomaterials: A review. **Q. Shen**
9:00 191. New energy: Fuel resources from kraft pulping. **M. Nagy**, M. Kosa, A. J. Ragauskas, H. Theliander
9:30 192. Composition of technical hydrolitic lignins and their utilization ways. **I. Sumerskiy**, **S. Krutov**
10:00 Intermission.
10:15 193. Structural analysis of lignin in the area of biorefinery. **E. A. Capanema**, M. Y. Balakshin, H-M. Chang, H. Jameel
10:45 194. Changes in lignin and lignin-carbohydrate complex structures during wood saccharification. **M. Y. Balakshin**, E. A. Capanema, H-M. Chang, H. Jameel, V. L. Chiang
11:15 195. Near-IR surface enhanced Raman spectrum of lignin. **U. P. Agarwal**, R. S. Reiner, S. A. Ralph
11:45 196. Ether cleavage mechanisms of lignin as studied with dimers and trimers. **H. Kawamoto**

Section C

Marriott Downtown
Deer Valley 1

Nanotechnology and Biobased Nanocomposites Cosponsored by NANO

W. Y. Hamad, J. Simonsen, and L. A. Lucia, *Organizers*

8:00 197. Cellulose-polymer nanocomposites: Processing self-assembled templates. **C. Weder**, S. J. Rowan, J. R. Capadona, K. Shanmuganathan
8:30 198. Elastic properties of MFC: Advanced electron microscopy combined with micromechanical modeling. **B. S. Tanem**, Y. Li, K. Gamstedt, P. E. Vullum, J. C. Walmsley
9:00 199. Smart polyurethanes containing polyaniline-cellulose nanocrystals. M. L. Auad, N. E. Marcovich, T. Richardson, W. J. Orts, E. S. Medeiros, L. H. C. Mattoso, M. A. Mosiewicki, **M. I. Aranguren**
9:30 200. A new nanocomposite based on waterborne polyurethane and cellulose nanocrystals. **X. Cao**, L. A. Lucia
10:00 Intermission.
10:15 201. Cellulose nanocrystal dispersion stability. M. Taylor, **J. Simonsen**
10:45 202. Interfacial micromechanics of cellulose whisker polymer nanocomposites. **R. Rusli**, S. J. Eichhorn
11:15 203. Cellulosic nanowhiskers: One-step functionalization and use in ecologically benign nanocomposites. **B. Braun**, J. R. Dorgan

WEDNESDAY AFTERNOON

Section A

Marriott Downtown
Salon G

Micro- and Nanofibers from Renewable Materials Cosponsored by PMSE‡ and NANO

G. W. Selling and M. W. Frey, *Organizers*

1:30 204. Electrospun zein fibers using glyoxal or formaldehyde as the crosslinking reagent. **G. W. Selling**
2:00 205. Utilizing cotton stalks as a source for high quality natural cellulose fibers. **Y. Yang**, N. Reddy
2:30 206. Extraction and mechanical properties of bamboo fibrils. **Y. Wan**, F. Ko
3:00 Intermission.
3:15 207. Preparation of rod-like, network-structured, and spherical cellulose nanocrystals with excellent thermal and mechanical properties. **P. Lu**, Y-L. Hsieh
3:45 208. Preparation, modification and characterization of nanoscale cellulose fibers. **H. Ma**, R. Wang, N. Li, L. Rong, B. S. Hsiao, B. Chu
4:15 209. Properties of TEMPO-oxidized cellulose nanofiber film. **H. Fukuzumi**, T. Saito, A. Isogai
4:45 210. Wood pulp chemical composition effects on the development of microfibrillated cellulose. **K. L. Spence**, R. A. Venditti, O. J. Rojas, J. J. Pawlak
5:15 Intermission.
5:30 CELL Open Business Meeting.

Section B

Marriott Downtown
Salon C

Advances in Chemistry and Utilization of Lignin

F. W. Liebner, *Organizer*

E. A. Capanema and B. Kosikova Sr., *Presiding*

1:00 211. Novel lignin antioxidants for preventing oxidation damage DNA and for stabilizing polymeric composites. **B. Kosikova Sr.**
1:30 212. Phopholipid liposomes stabilization by lignosulfonates. **S. Kim**, R. J. M. Silva, G. Guebitz, A. Cavaco-Paulo
2:00 213. Ammonoxidized lignins: Man-made humic materials for sustainable rehabilitation of degraded soils. **F. W. Liebner**, G. Pour, T. Rosenau, L. Tyhoda, K. Fischer, E. Brendler
2:30 214. Nanofibrous structures from lignin and lignin polymer blends. J. F. Kadla, **I. Dallmeyer**, Y-S. Kim
3:00 Intermission.
3:15 215. Electron beam modification of starch with lignins: A study of radiation grafting using model blends. **X. Coqueret**, C. Bliard, P. Dole, S. Baumberger
3:45 216. Adjusting the structure and properties of polyaniline by lignin. **J. Dong**, R. Qin, H. Zhou, Q. Shen
4:15 217. Model compatibilizers for the lignin-polystyrene interface. **N. W. Henry**, M. D. Dadmun
4:45 Concluding Remarks.

Section C

Marriott Downtown
Deer Valley 1

Nanotechnology and Biobased Nanocomposites Cosponsored by NANO

W. Y. Hamad, J. Simonsen, and L. A. Lucia, *Organizers*

1:30 218. Nanocellulose and nanochitin reinforced polycaprolactone. **W. T. Winter**, J. D. Goodrich, Y. Takahashi
2:00 219. Nanocomposite-based lignocellulosic fibers: A simple route for lignocellulosic fiber reinforced inorganic composites. **S. Renneckar**, Z. Lin
2:30 220. Renewable (greener) nanocomposite polymer foams synthesised from Pickering emulsion templates: using nanocellulose as a building tool. **J. J. Blaker**, K. Y. Lee, A. Menner, A. Bismarck
3:00 Intermission.
3:15 221. On the tensile characteristics of model films and membranes with different MFC loadings. **K. Syverud**, G. Chinga-Carrasco, P. Stenius
3:45 222. Structure and properties of MFC reinforced nanocomposites: Advanced electron microscopy combined with micromechanical modeling. **B. S. Tanem**, Y. Li, K. Gamstedt, P. E. Vullum, J. C. Walmsley, P. M. Stenstad
4:15 223. Template synthesis of metal oxides on cellulose nanocrystal. **Y. Shin**, B. W. Arey, C. Wang, G. J. Exarhos
4:45 224. A new liquid state NMR technique for the building of adsorption isotherms for the cellulose-xyloglucan interaction. L. Heux, G. Chauve, **K. Mazeau**

THURSDAY MORNING

Section A

Marriott Downtown
Salon G

Micro- and Nanofibers from Renewable Materials Cosponsored by PMSE‡ and NANO

G. W. Selling and M. W. Frey, *Organizers*

8:30 225. Preparation and characterization of cellulose nitrate-acetate mixed ester fibers. **M. W. Frey**, L. Li
9:00 226. Cellulose nanofibers from plant sources: Preparation and comparison. **K. Abe**, H. Yano
9:30 227. Esterification of cellulose nanofibers with fatty acid chlorides. **L. Heux**
10:00 Intermission.
10:15 228. Individualization of nanosized plant cellulose fibrils achieved by TEMPO-mediated oxidation under neutral conditions. **T. Saito**, M. Hirota, N. Tamura, H. Fukuzumi, A. Isogai
10:45 229. Optically transparent paper from cellulose nanofibers. **M. Nogi**, S. Iwamoto, A. N. Nakagaito, H. Yano
11:15 230. All bacterial-based green nanocomposites. **A. Abbott**, A. Bismarck
11:45 Concluding Remarks.

The official technical program for the 237th National Meeting is available online at oasys2.confex.com/acs/237nm/techprogram/.

Section B

Marriott Downtown
Salon C

Green and Renewable Composite Materials

J. P. Hinestroza and A. N. Netravali, *Organizers*

8:25 Introductory Remarks.
8:30 **231.** Biological cellulosic microcomposite materials. R. Ernest, **J. J. Pawlak**, A. Grunden, A. A. Devine
9:00 **232.** Polyhydroxyalkanoate granules for surface treatment of paper. **R. Bourbonnais**, R. H. Marchessault
9:30 **233.** Light-weight composites from hop vines and polypropylene web. **Y. Zou**, N. Reddy, Y. Yang
10:00 Intermission.
10:15 **234.** "Green" composites from a conjugated linseed oil-based resin and wheat straw. **D. P. Pfister**, R. C. Larock
10:45 **235.** Fabrication and characterization of cellulose film incorporated of Solidago canadensis L. **Q. Shen**, **W-X. Zhang**, Y. Ren, Y-A. Zhang
11:15 **236.** Chemical modification of wheat proteins-based renewable/biodegradable polymer materials and its effect on material biodegradation. **X. Zhang**

THURSDAY AFTERNOON

Section A

Marriott Downtown
Salon G

Water Soluble Polymers from Cellulose: Materials and Applications

S. Murphy and M. J. Radler, *Organizers*

12:55 Introductory Remarks.
1:00 **237.** Solubility of cellulose ethers vs. substituent distribution. **T. Heinze**
1:30 **238.** Water-soluble nanocapsules based on blockwise methylated cello-oligosaccharides. **H. Kamitakahara**, F. Nakatsubo
2:00 **239.** Toward high molecular weight 3-O-methylcellulose derivatives. **A. K. Miller**, J. B. Stanislaus, S. J. Rowan
2:30 **240.** The role of interchain entanglements in the thermal gelation of aqueous methyl cellulose. **R. L. Sammler**, O. D. Redwine, J. D. Moore, D. Poche, D. Meunier, J. Sherman, M. J. Rinken
3:00 Intermission.
3:15 **241.** Effects of hydrophobically modified hydroxy ethyl cellulose to the colloidal stability of silica. **Y. Boluk**, L. Zhao
3:45 **242.** Accelerating cellulosic ether development with high throughput approaches. **C. E. Mohler**, R. L. Sammler, T. Boomgaard, L. K. Stoneburner, S. Gaynor, C. J. Tucker
4:15 **243.** Advanced characterization of molecular weight, molecular weight distribution and persistence length of cationic hydroxyl ethyl cellulose by SEC-MALS. **H. Shen**, R. L. Sammler, D. Meunier, B. Deshmukh, S. Gaynor, E. P. Wasserman
4:45 Concluding Remarks.

Section B

Marriott Downtown
Salon C

Green and Renewable Composite Materials

J. P. Hinestroza and A. N. Netravali, *Organizers*

1:30 **244.** Polyphenol-nanocellulose composites that biomimic the plant cell wall. Z. Li, **A. I. Athamneh**, J. R. Barone
2:00 **245.** Green processing of polyester materials. **A. O'Neill**, R. Araujo, M. Casal, M. Zinn, Q. Ren, A. Cavaco-Paulo
2:30 **246.** High strength wood flour composites based on tung oil-polyurethanes. **M. I. Aranguren**, U. Casado, N. E. Marcovich, M. A. Mosiewicki
3:00 Intermission.
3:15 **247.** Polymer blends and composites derived from biopolymers. **S. Sharma**, J. Hodges, I. Luzinov
3:45 **248.** A thermosensitive chitosan/poly(vinyl alcohol) hydrogel containing hydroxyapatite for protein delivery. **Y. Du**, Y. Tang, X. Wang, X. Hu

CHED

Division of Chemical Education

J. M. Smist, I. J. Levy, and W. S. Harwood, *Program Chairs*

OTHER SYMPOSIA OF INTEREST:

Teaching Chemistry to a Diverse Student Body (see *CMA*, Sun)

ACS Award for Encouraging Women into Careers in the Chemical Sciences: Symposium in Honor of Mary F. Singleton (see *WCC*, Tue)

Overcoming Issues in Graduate School (see *YCC*, Mon)

Starting a Successful Research Program at a Predominantly Undergraduate Institution (see *YCC*, Tue)

Hazardous Waste at Academic Laboratories: Final Rule Panel Discussion (see *CHAS*, Tue)

SOCIAL EVENTS:
High School Dinner: Mon, Tue
Reception: Sun

SUNDAY MORNING

Section A

Marriott City Center
Capitol B

Plagiarism: What is it? What Can We Do About It? Cosponsored by CHAL, ETHC, and CINF

G. M. Bodner, *Organizer*

T. R. LeBon, *Organizer, Presiding*

8:30 Introductory Remarks.
8:35 **1.** Helping students learn what is (and what is not) plagiarism. **G. M. Bodner**, G. Comstock
8:55 **2.** When the plagiarism of instructors meets copyright law. **T. Holme**
9:15 **3.** Plagiarism and epistemology: The odd couple of ethics? **G. Bhattacharyya**, A. Verdan, J. T. Ingallinera
9:35 Intermission.
9:45 **4.** Plagiarism in class or lab: A trip to the Dean's Office. **J. R. Appling**
10:05 **5.** Why not teach a science ethics course to undergraduates. **C. E. MacGowan**
10:25 **6.** Plagiarism: Is there a solution? **T. R. LeBon**
10:45 Intermission.
10:55 **7.** Better documentation and paraphrasing through peer group review. **J. A. Nash**
11:15 **8.** Do we really teach students what plagiarism is? N. E. Levinger, **E. R. Fisher**

Section B

Marriott City Center
Capitol A

Outstanding Outreach is Elemental: The Helen Free Award Symposium

P. Kerrigan, *Organizer*

C. B. Frech, *Organizer, Presiding*

8:30 Introductory Remarks.
8:35 **9.** Have you reviewed your obituary recently? **C. M. Lang**
8:55 **10.** Chemistry outreach: 2 to 102. **A. Hazari**
9:15 **11.** Chemical education research: A different kind of outreach. **D. M. Bunce**
9:35 Intermission.
9:45 **12.** Many paths travelled to bring science to the public. **M. W. Moy**
10:05 **13.** Reaching out through outreach. **M. Sarquis**
10:25 Panel Discussion.

Section C

Marriott City Center
Olympus A

Advances in Teaching Organic Chemistry

S. F. Hornbuckle, *Organizer, Presiding*

8:30 Introductory Remarks.
8:35 **14.** Using an online writing assignment to teach about resonance and acid strength. **L. S. Starkey**
8:55 **15.** Effectiveness of iPods in the organic chemistry teaching laboratory. **G. L. Anderson**, J. R. Yocom
9:15 **16.** Production of effective media for iPods in the organic chemistry teaching laboratory. **J. R. Yocom**, **G. L. Anderson**
9:35 Intermission.
9:45 **17.** Discussion based organic chemistry: Getting students to talk about organic chemistry. **T. A. Mobley**
10:05 **18.** Increasing student engagement in a large lecture hall. **A. Straumanis**, S. M. Ruder
10:25 **19.** Organic chemistry preconceptions: What they are and where are they coming from. **J. T. Wasacz**, K. A. O. Pacheco
10:45 Concluding Remarks.

Section D

Marriott City Center
Capitol C

Integrating Nanoscience into the College and High School Classroom
High School Classroom Cosponsored by NANO‡

A. E. Greenberg, *Organizer, Presiding*

8:30 Introductory Remarks.
8:35 **20.** What's so big about being small? The interdisciplinary opportunity of nanoscience. **M. Orgill**, K. Crippen
8:55 **21.** Nanotechnology in society: Issues, challenges and recommendations for high school and undergraduate level science education. **A. E. Sweeney**
9:15 **22.** Wiggling into traditional high school curriculum. **T. M. Stanford**
9:35 Intermission.
9:45 **23.** Teachers' beliefs, intentions, and uses of models of nanoscale phenomena for NSEE. **S. Daly**, L. Bryan
10:05 **24.** Integrating nanoscale science and engineering content into middle- and high-school classrooms: Challenges and successes. **K. M. Hutchinson**, S. Daly, L. Bryan
10:25 **25.** Nano ideas to macro inclusion: High school teachers learn about nanoscience and articulate its integration. K. Crippen, **M. Orgill**
10:45 Intermission.
10:55 **26.** Bringing current nanoscience research into the classroom via virtual laboratory tours and video interviews. **C. A. Nichol**, J. S. Hutchinson
11:15 **27.** Teachers' development of nanoscience lesson plans. **E. D. Wischow**, L. Bryan, G. Bodner

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SUNDAY AFTERNOON

Section A

Marriott City Center
Capitol B

Computers in Chemical Education

C. Metz, *Organizer*

S. C. Sendlinger, *Organizer, Presiding*

1:30 Introductory Remarks.
1:35 **28.** An online computational chemistry resource for educators. **S. C. Sendlinger**, C. Metz
1:55 **29.** Using Avogadro (and other free software) in chemical education. **J. H. Jensen**
2:15 **30.** Exposing students to the successes and challenges of molecular modeling and simulation. **T. D. Shepherd**
2:35 Intermission.
2:45 **31.** Use of an interactive simulation in the presentation of gas properties: The effect on students' conceptual learning. **J. Barbera**, L. M. Kowalski-Carlson
3:05 **32.** Molecular animations vs. simulations: Their effects on students' mental models. **S. Akaygun**, L. L. Jones
3:25 **33.** Virtual learning environments as a teaching tool for undergraduate thermochemistry courses. J. E. Tirano, **G. Camargo**, H. R. Zea
3:45 Intermission.
3:55 **34.** Chemistry lab procedures in iTunes. **N. J. Gardner**, W. Gajewski
4:15 **35.** Computer animations for etextbooks in chemistry. **F. M. Dunnivant**, J. Ginsbach

Section B

Marriott City Center
Capitol A

Microwave-Assisted Chemical Synthesis and Transformations

R. S. Varma, *Organizer, Presiding*

1:30 Introductory Remarks.
1:50 **36.** Microwave assisted synthesis and the classroom: A perfect match. **E. K. Barnhardt**, C. B. McGowan, N. E. Leadbeater
2:10 **37.** Quick and easy methods for microwave-assisted peptide synthesis and proteomics. **G. S. Vanier**
2:30 **38.** Microwave-assisted bismuth nitrate-catalyzed novel synthesis of pyrroles. **S. Rivera**, D. Bandyopadhyay, B. K. Banik
2:50 Intermission.
3:10 **39.** Microwave-assisted unprecedented stereocontrol of β-lactam formation derived from conjugated arylimine. **R. Rodriguez**, H. Aguilar, B. K. Banik
3:30 **40.** Microwave-assisted synthesis of organics and nanomaterials. **R. S. Varma**
3:50 **41.** Organo- and nano-catalyst in greener reaction medium: Microwave-assisted expedient synthesis of fine chemicals. **V. Polshettiwar**, R. S. Varma
4:10 Concluding Remarks.

Section C

Marriott City Center
Olympus A

Advances in Teaching Organic Chemistry

S. F. Hornbuckle, *Organizer, Presiding*

1:30 Introductory Remarks.
1:35 **42.** Strategies for promoting active learning in the introductory organic chemistry laboratory course. **J. A. Cramer**

Please refrain from using cellular telephones and cameras during technical sessions.