

INOR

Division of Inorganic Chemistry

N. Radu and S. Koch, *Program Chairs*

OTHER SYMPOSIA OF INTEREST:

Organometallics Distinguished Author Award (see *ORGN*, Mon)

Chemistry of Materials Lectureship & Best Paper Award (see *PMSE*, Mon)

Innovation & Commercialization in the Chemical Sector (see *SCHB*, Mon)

2018 ACS Catalysis Lectureship for the Advancement of Catalytic Science: Symposium in honor of Nicholas Turner (see *CATL*, Mon)

SUNDAY MORNING

Section A

Boston Convention & Exhibition Center
Room 252A

Undergraduate Chemistry Majors Inorganic Symposium

A. J. Morris, *Organizer, Presiding*

8:30 Introductory Remarks.

8:35 INOR 1. Women in nanotechnology. **A. De Bettencourt Dias**

8:50 INOR 2. Water splitting & solar fuels: Progress & challenges to widespread utilization. **K. Bren**

9:05 INOR 3. The Halpern legacy: Mechanism, catalysis & organotransition metal chemistry. **A.S. Goldman**

9:20 INOR 4. Recent advances in the photochemistry & photophysics of the P-block elements. **T. Hudnall**

9:35 INOR 5. Pathways for industrial chemists symposium. **L.M. Berreau**

9:50 INOR 6. Organometallics distinguished author symposium. **P.J. Chirik**

10:05 INOR 7. Inorganic Young Investigator Awards. **B.T. Donovan-Merkert**

10:20 INOR 8. Inorganic Nanoscience Award Symposium. **B. Cossairt**

10:35 INOR 9. Inorganic Chemistry Lectureship: Symposium in Honor of Leroy Cronin. **W.B. Tolman**

10:50 Intermission.

11:05 INOR 10. Graduate School Information Session. **A.J. Morris**

Section B

Boston Convention & Exhibition Center
Room 251

Recent Advances in Red & Black Phosphorus Chemistry

Financially supported by HORIBA Scientific

H. Ji, *Organizer, Presiding*
M. Shatruk, *Presiding*

8:30 Introductory Remarks.

8:35 INOR 11. Unusual allotropes of low-dimensional semiconductors beyond graphene. **D. Tomanek**

9:05 INOR 12. Rational surface modification of two-dimensional black phosphorus: Insights from first-principles calculations. T. Mou, **B. Wang**

9:35 INOR 13. Suspended black phosphorous nanostructures: From fundamentals to device technologies. **P. Feng**

10:05 Intermission.

10:20 INOR 14. Red phosphorous as an educt in near-room-temperature synthesis reactions in ionic liquids: Reaction monitoring by NMR spectroscopy. **E.W. Brunner**, J. Pallmann, A. Weiz, A. Wolff, M. Groh, S. Paasch, T. Doert, M. Ruck

10:50 INOR 15. Size-dependent properties of polyphosphide nanowires. C. Pak, S. Mañas, E. Coronado, **M. Shatruk**

11:20 INOR 16. Efficient and fast synthesis of few-layer black phosphorus via microwave-assisted liquid-phase exfoliation. **J. Shapter**

Section C

Boston Convention & Exhibition Center
Room 213

Organometallic Chemistry: Catalysis

N. S. Radu, *Organizer*
L. Geary, M. D. Wodrich, *Presiding*

8:30 INOR 17. One-pot production of methanol from CO₂ via tandem catalysis employing an encapsulated catalyst@MOF species. **T. Rayder**, Z. Li, E. Adillon, J.A. Byers, C. Tsung

8:50 INOR 18. Identifying highly active and regioselective homogeneous catalysts from molecular volcano plots. **M.D. Wodrich**, C. Corminboeuf

9:10 INOR 19. Mechanistic studies of single-step styrene production catalyzed by Rh complexes with diimine ligands: A reevaluation of the role of ligands. **W. Zhu**, J. Chen, Z. Luo, X. Jia, T. Gunnoe

9:30 INOR 20. Oxidative arene alkenylation catalyzed by palladium(II) catalyst: Studies on selectivity and air recyclability. **X. Jia**, A. Foley, B.A. Vaughan, B.A. McKeown, T.B. Gunnoe

9:50 INOR 21. Studies into the mechanism of alkene insertion and isomerization in cobalt-catalyzed hydroboration: Applications toward diastereoselective synthesis of 1,3-disubstituted indanes. **N.G. Leonard**, P.J. Chirik

10:10 INOR 22. Applications and mechanisms of external Lewis and Bronsted acid additives in organotransition metal chemistry. J. Becica, **G. Dobreiner**

10:30 INOR 23. Catalysis enabled by arsine and amine *N*-oxides and oxygen atom transfer. **L. Geary**

10:50 INOR 24. Preference of redox neutral over redox mechanism for titanium (IV) catalysis: The how, why, and implications. **Z. Wang**

11:10 INOR 25. Transition metal complexes supported by pyrrolide and imidazole ligands with pyridine donors. **J. Sampson**, G. Choi, M. Akhtar, E. Jaseer, R. Theravalappil, H.A. Al-Muallem, T. Agapie

11:30 INOR 26. Pyridine(diimine) molybdenum complexes and their applications to ethylene upconversion and catalytic arene and olefin hydrogenation. **M.V. Joannou**, M.J. Bezdek, P.J. Chirik

11:50 INOR 27. Catalytic asymmetric P-C bond formation via chiral Cu(I)- and Ni(II)-phosphido complexes. **S.K. Gibbons**, D.S. Glueck, A.L. Rheingold

12:10 INOR 28. Olefin and alkyne hydrosilation catalyzed by cationic iron complexes. **P. Smith**, T. Tilley

Section D

Boston Convention & Exhibition Center
Room 212

Inorganic Catalysts

S. A. Koch, *Organizer*
S. M. Kilyanek, *Presiding*

8:30 INOR 29. Computational study of a self-activate PSbP-Pt catalyzed 1,6-enyne

cycloisomerization: The role of a novel pincer ligand. **L. Dang**

8:50 INOR 30. Catalytic activation of sp³ C-H bonds by high-spin and spin-crossover Co(II) complexes. A. Bell-Taylor, **C.R. Goldsmith**

9:10 INOR 31. Continuous flow synthesis of carbide nanoparticle catalysts for renewable fuels. **E.J. Roberts**, L. Wang, F. Baddour, D. Ruddy, S. Habas, N. Malmstadt, R.L. Brutchey

9:30 INOR 32. Non-oxo complexes as oxygen transfer agents for oxidation of olefins: A computational study. **R. Parveen**, T.R. Cundari

9:50 INOR 33. Total oxidation of 2-propanol by mesoporous cobalt oxide catalysts. **S.L. Dissanayake**, N.D. Wasalathanthri, A.S. Amin, J. He, S. Poges, S.L. Suib

10:10 Intermission.

10:25 INOR 34. Activation of C-H and C-O bonds by the TaCl₅-PPh₃ cooperative Lewis pair. **M.M. Rahman**, D.V. Peryshkov, M.D. Smith

10:45 INOR 35. Electrochemical hydrogen evolution catalyzed by molecular molybdenum dioxo complexes. **S.M. Kilyanek**

11:05 INOR 36. DFT study of hydroaminoalkylation of alkenes with amidate tantalum complexes. **A. Nazemi**, T.R. Cundari

11:25 INOR 37. Direct anti-Markovnikov addition of water to olefin to synthesize primary alcohol: A DFT study. **Y.S. Ceylan**, T.R. Cundari

Section E

Boston Convention & Exhibition Center
Room 211

Coordination Chemistry: Synthesis & Characterization

A. Larsen, *Organizer*
L. H. Doerrer, D. M. Pinero Cruz, *Presiding*

8:30 INOR 38. Terminal oxo, hydroxo, and water ligands in 3d perfluoropinacolate complexes. J.K. Elinburg, S.L. Carter, J.E. Henebry, **L.H. Doerrer**

8:50 INOR 39. CO₂ activation with a binuclear nickel (0) bis(N-heterocyclic silylene) complex. **A. Bartrom**, H. Harman

9:10 INOR 40. Bimetallic Mabiq complexes for photocatalysis using earth abundant metals. **S. Stark**

9:30 INOR 41. Synthesis of cyclic polyoxovanadate-alkoxide clusters containing halide templates. **R. Meyer, E. Maston**

9:50 INOR 42. Heterometallic complexes with the polyfunctional ligand orotate: Products with different nuclearities and dimensionalities from the Ln/Co/orotate system. **L.R. Falvello, S. Royo, M. Tomas**
10:10 Intermission.

10:20 INOR 43. Mono and dinuclear complexes from salen based-ligands as building blocks for new polynuclear complexes. **D.M. Pinero Cruz, K. Gutierrez, S. Lin, Z. Chen**

10:40 INOR 44. Accessibility of 2-pyridinecarboxaldehyde n-oxide via oxidation of 2-pyridinecarboxaldehyde diacetal. **K.A. Goerl, P. Baran**

10:40 INOR 45. Structural resolutions of magic-size (CdSe)₁₃ twin clusters. **T. Hsieh, T. Yang, C. Hsieh, S. Huang, Y. Yeh, C. Chen, E. Li, Y. Liu**

11:00 INOR 46. Adventures in the coordination chemistry of heteroaromatic ketone hydrazonic compounds. **M.A. Bakir**

11:20 INOR 47. Non-coupled bimetallic complexes supported by unsymmetric redox-active ligands. **C. Hess**

Section F

Boston Convention & Exhibition Center
Room 209

Chemistry of Materials: Materials for Energy & Catalytic Applications

C. G. Lugmair, *Organizer*
E. M. Matson, G. Sauve, *Presiding*

8:50 INOR 48. Polyoxovanadate-alkoxide clusters as homogenous models for the investigation of oxygen-atom vacancies in reducible metal oxides. **B. Petel, E.M. Matson**

9:10 INOR 49. Synthesis and characterization of a layered Fe(III)/Mn(III) sulfate material: Applications for lithium-ion battery cathodes and OER catalysis. **K. Fridberg, M.P. Marshak**

9:30 INOR 50. Tailoring chemical composition to achieve enhanced methanol oxidation reaction and ethanol oxidation reaction performance in ultrathin Pt_xSn_{1-x} alloy systems. **L. Li, H. Liu, C.**

Qin, Z. Liang, A. Scida, S. Yue, X. Tong, R.R. Adzic, S.S. Wong

9:50 INOR 51. Engineering the position of transition metal dopant in solid hosts for enhanced photocatalytic properties. **P. Darapaneni, N. Moura, J.A. Dorman**

10:10 INOR 52. Self-assembled, metal-oxide clusters as charge carriers for non-aqueous redox flow batteries. **E.M. Matson, L.E. VanGelder, B. Petel**

10:30 INOR 53. Mechanism of laser-induced bulk and surface defect generation in ZnO and TiO₂ nanoparticles: Effect on photoelectrochemical performance. **A.M. Mueller**

11:10 INOR 54. Fluorination increases the electron mobility of zinc azadipyromethene-based electron acceptors and enhances performance of organic solar cells. **S. Pejić, A.M. Thomsen, F.S. Etheridge, R. Fernando, C. Wang, G. Sauve**

11:30 INOR 55. Water splitting electrocatalysis within zirconium phosphate layered inorganic nanomaterials. **J.L. Colon, M. Ramos-Garces, J. Sanchez, I. Barraza, Y. Wu, D.E. Del Toro, D. Villagran, T.F. Jaramillo**

11:50 INOR 56. Metalloconjugated polymer-carbon nanotube hybrids and their photophysical properties. **W. Chan, W. Xiong, L. Du, H. Shi, K. Lo, D. Phillips**

Section G

Boston Convention & Exhibition Center
Room 208

Bioinorganic Chemistry: DNA, RNA & Inorganic Drugs

S. A. Koch, *Organizer*
J. P. Caradonna, *Presiding*

8:30 INOR 57. Disulfide-masked iron prochelators: Antiproliferative activity in breast cancer cells. **R.D. Utterback, E.A. Akam, E. Tomat**
8:50 INOR 58. Platinum complexes as potential anticancer agents. **R. Khan, A.M. Alsalmé**

9:10 INOR 59. Design and synthesis of potent catalytic inorganic therapeutic agents for cancer. **J. Song, J. Mi, B. Liang, D.P. Jones, S. Nie, C.L. Hill**

9:30 INOR 60. Rhenium as an alternative to platinum for the treatment of cancer. **J.J. Wilson,**

S.C. Marker, C.C. Konkankit, K.M. Knopf

9:50 INOR 61. Ferrocene based thioureas as non-covalent DNA binders, synthesis, crystal structure, spectral and electrochemical characterization. **B. Lal, K.H. Mirani, A. Altaf, A. Badshah**
10:10 Intermission.

10:20 INOR 62. Spectroscopic and electrochemical studies of interaction between deoxyribonucleic acid and copper complex of triazolediamin Schiff's base. **A. Altaf, A. Badshah, N. Sahar**

10:40 INOR 63. Modeling the binding interaction of inorganic drugs with DNA and G-quadruplexes. **H. Gattuso, A. Spinello, G. Barone, M. Fumanal, C. Daniel, A. Monari**

11:00 INOR 64. Highly photoreactive Ir(III) complexes for theranostic applications. **R. Bevernaegie, L. Marcelis, B. Laramee-Milette, J. De Winter, A. Diman, A. Decottignies, P. Gerbaux, G. Hanan, B. Elias**

11:20 INOR 65. Leveraging the galactose recognition machinery for targeted hepatic copper delivery. **T.A. Su, C.J. Chang**

11:40 INOR 66. Targeted live-cell nuclear delivery of the DNA 'light-switching' Ru(II) complex via ion-pairing with chlorophenolate counter-anions: the critical role of binding stability and lipophilicity of the ion-pairing complexes. **B. Zhu**

Synthesis & Characterization of Nanomaterials for Sustainable Energy

Sponsored by MPPG, Cosponsored by INOR

Chemical Applications of Ultrafast X-ray/XUV Spectroscopy & Scattering Small-Molecule Photophysics

Sponsored by PHYS, Cosponsored by INOR

SUNDAY AFTERNOON

Section A

Boston Convention & Exhibition Center
Room 252A

Inorganic Young Investigator Awards

B. T. Donovan-Merkert, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 INOR 67. Trapping an iron(VI) water-splitting intermediate in nonaqueous media.

B.M. Hunter, N.B. Thompson, A.M. Mueller, G.R. Rossman, M.G. Hill, J.R. Winkler, H.B. Gray

2:00 INOR 68. Electron- and ion-conducting metal-organic frameworks. **S. Park, M. Dinca**
2:25 INOR 69.

Micro/nanorobotics: From locomotion to biomedical applications. **J. Li, J. Wang**
2:50 INOR 70. High-spin iron complexes for C-H amination: from electronic structure to catalysis. **D. Iovan, T. Betley**
3:15 Intermission.

3:25 INOR 71. Rational design of silicon structures for multiscale biointerfaces. **Y. Jiang, B. Tian**

3:50 INOR 72. Tuning the properties of transition metal complexes for applications involving redox-flow battery technologies and bioconjugation strategies. **J. Stauber**

4:15 INOR 73. Structural and electronic correlations in halide perovskites under pressure. **A. Jaffe, Y. Lin, W.L. Mao, H. Karunadasa**

4:40 INOR 74. Combinatorial synthesis of multimetallic heterostructured nanoparticles in polymer nanoreactors. **P. Chen, C.A. Mirkin**

Section B

Boston Convention & Exhibition Center
Room 251

Recent Advances in Red & Black Phosphorus Chemistry

Financially supported by HORIBA Scientific

H. Ji, *Organizer, Presiding*
M. Shatruk, *Presiding*

1:30 INOR 75. Chiral 3D structures of black phosphorus. **A. Tlaluice-Flores**

2:00 INOR 76. Oxidative environment derived surface study on black phosphorus. **D.**

Zemlyanov, W. Luo, C. Milligan, Y. Du, L. Yang, Y. Wu, P. Ye

2:30 INOR 77. Recent progress on stability and passivation of black phosphorus. **Y. Abate**

3:00 INOR 78. Degradation mechanism and protection strategies of few-layer black phosphorus. **J. Wang**

3:30 Intermission.

3:45 **INOR 79.** Integer and fractional quantum Hall effect in various few-layer black phosphorus transistors. **R. Chen, S. Tran, J. Yang, T. Taniguchi, K. Watanabe, H. Baek, D. Smirnov, C. Lau**

4:15 **INOR 80.** Towards strain tunable optoelectronic devices. **P. Gant, R. Frisenda, A. Castellanos-Gomez**

4:45 **INOR 81.** Horiba's new Raman on nanomaterials. **J. Lowry**

5:15 **INOR 82.** 2D red phosphorus film. **H. Ji**

Section C

Boston Convention & Exhibition Center
Room 213

Organometallics Distinguished Author Symposium

P. J. Chirik, *Organizer, Presiding*

1:30 Introductory Remarks.

1:35 **INOR 83.** Mechanisms of nickel-catalyzed cross-electrophile coupling reactions. **D.J. Weix**

2:10 **INOR 84.** New radical-mediated anti-Markovnikov selective alkene functionalizations. **V.A. Schmidt**

2:45 Intermission.

3:00 **INOR 85.** Exploiting the coordination non-innocence of antimony ligands to control the reactivity of transition metals. **F.P. Gabbai**

3:35 **INOR 86.** Catalysis at metal-metal bonds. **C. Uyeda**

Section D

Boston Convention & Exhibition Center
Room 212

Organometallic Chemistry: Applications to Materials & Polymer Science

N. S. Radu, *Organizer*

J. R. Robinson, *Presiding*

1:30 **INOR 87.** Flexible site-differentiated beta-diketimate frameworks and their catalytic activity in ring-opening polymerization (ROP). **J.R. Robinson, X. Dong, E.M. Tsotsos**

1:50 **INOR 88.** Advances in carbene migratory insertion directed toward transition-metal catalyzed polymer synthesis. **A.V. Zhukhovitskiy**

2:10 **INOR 89.** Metathesis of conjugated polyunsaturated materials. **G. Turczel, E.**

Csizmadia, E. Kovács, I. Tóth, P.T. Anastas, R. Tuba

2:30 **INOR 90.** Mechanistic studies into iron-catalyzed epoxide polymerization reactions. **K.R. Delle Chiaie, M. Qi, J.A. Byers**

2:50 **INOR 91.** Subensemble characterization of molecular polymerization catalyst activity through fluorescence microscopy. **Q. Easter, S. Blum**

3:10 **INOR 92.** New catalyst for alkene hydrosilylation reactions and crosslinking of silicones. **M. Puillet, V. Monteil, J. Raynaud, M. Bousquie**

3:30 **INOR 93.** Group VI metal alkylidene N-heterocyclic carbene complexes: Access to highly tactic and regioregular functional polymers. **M. Benedikter, C. Lienert, G. Frater, M. Buchmeiser**

3:50 **INOR 94.** Titanium amino-phenolate complexes in controlled methacrylate polymerization. **D. Coward, B. Lake, R. Poli, M.P. Shaver**

4:10 **INOR 95.** Deactivation of Z-selective olefin metathesis catalyst via 1,2-sulfide shift. **J. Lin, T.P. Montgomery, T. Ahmed, R.H. Grubbs, K.N. Houk**

4:30 **INOR 96.** Approaches to polymers derived from bis-pincer complexes. **C. Yu, O. Ozerov**

Section E

Boston Convention & Exhibition Center
Room 211

Electrochemistry

N. S. Radu, *Organizer*

C. J. Ziegler, *Presiding*

1:30 **INOR 97.** E-switchable ring-opening polymerization of lactide and an epoxide. **M. Qi, Q. Dong, D. Wang, J.A. Byers**

1:50 **INOR 98.** Electrodeposition of neodymium using room temperature ionic liquids. **P. Bagri, H. Luo, J. Dehaut, S. Dai**

2:10 **INOR 99.** Directed electrochemical nanowire assembly (DNA): A facile individual nanowire growth method for sensor applications. **B. Ozturk, S. Alotaibi, I. Unlu, G. Basnet, B. Flanders, S. Pokharel, A. Lisfi, A. Guver, J. Samba**

2:30 **INOR 100.** Development of potential pulse deposition (PPD) of CdTe and its application on Au nanorods. **X. Zhang**

2:50 **INOR 101.** Electrochemical reduction of phosphorus(V) with

triaryl borate Lewis acids. **J.S. Elias, C. Cyrille, D.G. Nocera**

3:10 **INOR 102.** Enhancing the utilization of fluorinated cross-linked polymers for corrosion protection. **W. Yaseen**

3:30 **INOR 103.** New ferrocene reagents for redox flow battery applications. **B.R. Schrage, Z. Zhao, J.A. Bonezzi, A. Boika, C.J. Ziegler**

3:50 **INOR 104.** Achieving selective CO electroreduction to fuels by understanding the role of proton transfer. **M. Schreier, Y. Surendranath**

Section F

Boston Convention & Exhibition Center
Room 209

Coordination Chemistry: Synthesis & Characterization

A. Larsen, *Organizer*

G. Mezei, C. Milsman, *Presiding*

1:30 **INOR 105.** Developing design principles for early transition metal photosensitizers. **C. Milsman, Y. Zhang, A. Gowda, D. Leary**

1:50 **INOR 106.** Mn-Ce clusters from reductive aggregation: Unusual long-range Mn---Mn exchange-coupling through Ce^{IV}. **S. Das Gupta, K.A. Abboud, G. Christou**

2:10 **INOR 107.** Covalent modification of molybdenum-blue polyoxomolybdates with amino acids. **W. Xuan, D. Long, L. Cronin**

2:30 **INOR 108.** Spin polarization of spin-triplet transition metal complexes. **M. Fataftah, B.T. Phelan, M.D. Krzyaniak, M.R. Wasielewski, D.E. Freedman**

2:50 **INOR 109.** Synthesis, x-ray crystallography, spectroscopic and cytotoxicity studies of higher coordinate Gold(I) phosphine complexes. **Z. Assefa, K. Brown, M. Kanipes-Spinks, C. Roroe**

3:10 Intermission.

3:20 **INOR 110.** Postsynthetic nanojar functionalization by pyrazolate/carboxylate and pyrazolate/pyrazolate ligand exchange. **G. Mezei, C.K. Hartman**

3:40 **INOR 111.** Reactivity of 2-electron reduced formazanate boron compounds with electrophiles: Facile N-H/N-C bond homolysis due to formation of

stable ligand radicals. **R. Mondol, E. Otten**

4:00 **INOR 112.** Excited state delocalization in polynuclear Ru(II) multiterpyridine complexes. **S. Cerfontaine, L. Marcéls, B. Laramée-Milette, G. Hanan, F. Loiseau, J. De Winter, P. Gerbaux, B. Elias**

4:20 **INOR 113.** Towards organometallic nanoclusters: Ketimide-stabilized low-valent transition metal clusters. **A.W. Cook, P. Damon, R.A. Lewis, T.W. Hayton**

4:40 **INOR 114.** Using mono- and bimetallic pyridine diimine scaffolds to study transient reactive intermediates. **D. Gygi, S. Hwang, K. Xia, D.G. Nocera**

Section G

Boston Convention & Exhibition Center
Room 208

Chemistry of Materials: Metal Organic Frameworks

C. G. Lugmair, *Organizer*

T. Gadzikwa, L. Wang, *Presiding*

1:30 **INOR 115.** Utilizing MOFs to improve the efficiency and capabilities of catalytic converters. **R. Tovar, P. Farias, Y. Liu**

1:50 **INOR 116.** Growth of UiO-66-NH₂ and Cu-TCPP metal-organic frameworks on metal oxide-coated polymer fibers for catalytic hydrolysis of chemical warfare agent simulants and toxic gas adsorption. **D. Lee, J. Zhao, H. Barton, J. Jamir, C.J. Oldham, G. Peterson, G. Parsons**

2:10 **INOR 117.** Heterogeneous scorpionate site in MOF: Small molecule binding and activation. **L. Wang**

2:30 **INOR 118.** Aperture-opening encapsulation of a transition metal catalyst in a metal-organic framework for CO₂ hydrogenation. **Z. Li, T.M. Rayder, E. Adillon, J.A. Byers, C. Tsung**

2:50 **INOR 119.** Supramolecular photocatalysis within confined environment of metal-organic framework. **C. Duan, T. Zhang**

3:10 **INOR 120.** One-pot nanoparticle encapsulation by use of crystalline capping agent UiO-66-NH₂ and their application in selective catalysis. **A.P. Young, J. Yang, L. Chou, M. Golden, C. Tsung**

3:30 Intermission.

3:45 INOR 121. Tackling unusual selectivity of photocatalytic trifluoromethylation for protection of metabolic sites of drugs by enzyme-mimicking dye-based metal-organic frameworks. **T. Zhang**, C. Duan

4:05 INOR 122. Developing commercial products that utilize metal-organic frameworks: Challenges, lessons learned, and future opportunities. **W. Morris**, O.K. Farha, M. Weston, P. Siu, J. Arno

4:45 INOR 123. Uniformly bifunctional metal-organic framework materials. **T. Gadzikwa**, C.S. Satterfield, K.P. Samarakoon

5:05 INOR 124. Near IR excited fluorescent Nd-MOF conquering concentration quenching problem. **J. Li**, Y. Gu, H. Zhou

Synthesis & Characterization of Nanomaterials for Sustainable Energy

Sponsored by MPPG, Cosponsored by INOR

Chemical Applications of Ultrafast X-ray/XUV Spectroscopy & Scattering Biological Applications

Sponsored by PHYS, Cosponsored by INOR

SUNDAY EVENING

Section A

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Recent Advances in the Photochemistry & Photophysics of the P-Block Elements

T. Hudnall, F. Jaekle, *Organizers*
5:30 - 7:30

INOR 125. Exploring the photochemistry of diamido and related electrophilic carbenes. **B. Gildner**, T.A. Perera, T. Hudnall
INOR 126. Doublet emitters derived from stable carbenes for potential OLED applications. **G. Harmon**, C. Barragan, R.N. Arias, T. Hudnall

INOR 127. Solvent effects on the polarization transfer between a photo-excited spin-polarized radical pair and a TEMPO radical. **C.E. Avalos**, G. Stevenato, S. Richert, G. Karthikeyan, O. Ouari, C.R. Timmel, L. Emsley

INOR 128. *N,N*-diaryl dihydrophenazine photoredox catalysts: Applications in efficient ring-opening atom transfer radical polymerization. **D. Chen**, G. Miyake

INOR 129. Ladderization of π -conjugated molecules facilitated by boron-nitrogen coordinative bonds. **A. Mu**, L. Fang

INOR 130. Environment-sensitive azepane-substituted β -diketones and difluoroboron complexes with restricted C-C bond rotation. **F. Wang**, D. Song, C.L. Fraser

Section B

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Solid-State Inorganic Chemistry

C. Lugmair, V. Poltavets,
Organizers

5:30 - 7:30

INOR 131. Strong enhancement of emission efficiency in GaN light-emitting diodes by plasmon-coupled light amplification of graphene. **S. Hwang**

INOR 132. Ultrafast logic computation using nanostructured Ge-Sb-Te phase-change memory materials. **D. Loke**, J. Skelton, W. Wang, T. Lee, R. Zhao, T. Chong, S. Elliott

INOR 133. Visible absorbance variation in Dion-Jacobson perovskites upon acid exchange. **R. Bittues**, **L. Smith**

INOR 134. Synthesis and thermoluminescence characterization of copper and silver co-doped lithium tetraborate phosphors. **G.m. Celik**, N. Yazici, A. Yilmaz

INOR 135. Strong luminescence in lanthanide-free magnesium nitride chloride with the layered structure. **E. Kim**, H. Kang, H. Yang, S. Yoon, W. Chae, N.H. Hur

INOR 136. Rapid synthetic strategy for Cu₂O hexapod synthesis. **Y. Zubarev**, L. Smith

INOR 137. Photodynamic therapy metal organic frameworks (PDT-MOFs). **N. Azbill**, R.W. Larsen

INOR 138. Structure and band gap analysis for new Dion-Jacobson perovskite RbBiKNb₃O₁₀. **W. Nason**, L. Smith

INOR 139. Doping toward unconventional superconducting states in the layered Mott insulator SrF₂Fe₂OS₂. **K. Bayliff**, C. Huang, E. Morosan

INOR 140. Three-dimensional maps of helium nanobubbles in a palladium alloy. **N.R. Catarineu**, D.B. Robinson, N.C. Bartelt, W.L. York, S. Vitale, J.D. Sugar, E.L. Bouknight, K.L. Shanahan

Section C

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Organometallic Chemistry: New Ligand Platforms

N. S. Radu, *Organizer*

5:30 - 7:30

INOR 141. Investigation on proton coupled electron transfer of heteroflavonol. **X. Han**

INOR 142. Structural consequences of adding electrons to boron-doped nanographene. **Z. Zhou**, X. Wang, Z. Wei, K. Muellen, M.A. Petrukhina

INOR 143. Selective sensing of citrate with a macrocycle-based dinuclear receptor. M.H. Hasan, M. Rhaman, A. Alamgir, R. Tandon, **A. Hossain**

INOR 144. Mechanochemical synthesis of bis(imino)pyridine ligands and related compounds. **T.E. Shaw**, L. Garayeva, L. Shultz, T. Jurca

Section D

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Main Group Chemistry

T. Hudnall, *Organizer*

5:30 - 7:30

INOR 145. Around the periodic table at 600 RPM:

Mechanochemical synthesis of organometallic species. **R.F.**

Koby, T.P. Hanusa

INOR 146. Synthesis and reactivity of amino-hydroborane frustrated Lewis pairs. **E. Rochette**, F.G. Fontaine

INOR 147. Group 13 complexes of nitroxide ligands: Novel redox-active complexes of Al, Ga, and In. M. Smith, A.J. Woodside, A. Clark, **C.R. Graves**

INOR 148. First stable Cu(III) N-heterocyclic carbene accessible from simple copper(II) acetate. **S. Holzl**, M.R. Anneser, F.E. Kuehn

INOR 149. A bench stable Cu(III) N-heterocyclic carbene accessible from simple copper(II) acetate. **S. Holzl**, S. Inoue, F.E. Kuehn

INOR 150. Preparation and chemistry of 1,3,2-diazaborole-

derived carbene complexes of boron. **K. Luedecke**, H. Hickox, Y. Wang, G.H. Robinson

INOR 151. Higher molecular weight cyclic chlorophosphazenes. **C. Salmon**, C. Tessier, S. Crabtree

INOR 152. Synthesis and characterization of iodododecaborates with hydroxyl substituents. **Z. Lincoln**, J.A. Dopke, R.J. Staples

INOR 153. Greener methods of P-N bond synthesis. **S. Crabtree**, M.L. Stromyer, C. Tessier

INOR 154. Green, facile method for the synthesis of phosphine sulfides and selenides. **D. Vang**, A.B. Olichwier, J.K. West

INOR 155. Primary phosphines: New synthetic methods and new targets. **B.A. Palen**, E. Landgreen, J.K. West

INOR 156. Computational evaluation of substituent effects on the predicted air-sensitivity of aryl primary phosphines. **E. Landgreen**, B.A. Palen, J.K. West

Section E

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Lanthanide & Actinide Chemistry

A. De Bettencourt Dias, *Organizer*
5:30 - 7:30

INOR 157. Synthesis of mixed-ligand lanthanide-based organometallic magnets. **J. Greenough**, Z. Zhou, Z. Wei, R. Clerac, M.A. Petrukhina

INOR 158. Photophysical characterization of a highly luminescent divalent-lanthanide-containing azacryptate. **T.C. Jenks**, M. Bailey, P.D. Martin, H.B. Schlegel, M.J. Allen, F.A. Rabuffetti, B.A. Corbin, A.N. Kuda-Wedagedara

INOR 159. Green synthesis of ultrathin CeO₂-doped FeOOH-Co(CO₃)OH/rGO nanohybrids for oxygen evolution reaction. **X. Zhang**

INOR 160. Energy transfer mechanism in Y₂O₃ nanoparticles doped with europium and terbium ions. **S. Sadyk**, T.S. Atabaev

INOR 161. Rare earth oxides and rare earth nitrides via vapor phase approaches using tailored metalorganic precursors. **H. Parala**, K. Xu, S. Cwik, A. Devi

INOR 162. High-nuclearity Ni-Ln (Ln = lanthanide) heterometallic clusters – Synthesis and magnetic studies. **M. Fairley**, L. Qin, Y. Zheng, Z. Zheng

INOR 163. Effects of pyridinium counter-ions on the structure and properties of novel UCl_6^{2-} compounds. **S. Han**, J.N. Wacker, K.E. Knope

INOR 164. Force field parameters for modeling the soft crystals of lanthanides (Nd, Eu, Gd, Tb, and Ho) complexes. **N. Nakayama**, S. Obata, H. Gotoh, M. Hasegawa

Section F

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Inorganic Catalysts

S. A. Koch, *Organizer*

5:30 - 7:30

INOR 165. Gel-like cooperated with freeze-drying strategy to construct hierarchically porous polyoxometalate-based metal-organic framework catalysts. **S. Liu**, X. Li

INOR 166. Bioinspired manganese complexes with tetradentate pyridine-appended biperidine ligands catalyze olefin epoxidation. **F. Zhu**, G. Yang, A. Zoll, S. Thompson, J. Jackson, P. Milne, E.V. Rybak-Akimova

INOR 167. Heterogeneous nanocrystalline metal oxide catalysts for aldol condensations derived from pyruvic acid oxime and oxalate precursors. **A.A. Alayyaf**

INOR 168. Mixed-valence $\{V_{16}\}$ clusters based hybrid material as a nanocatalyst for highly efficient olefin epoxidation in the air. **S. Liu**, S. Wang, Z. Zhang

INOR 169. A kinetic isotope effect study on a bifunctional nickel based catalyst for the CO_2 reduction and hydrogen evolution reactions. **J. Nganga**

INOR 170. Synthesis of mesoporous MgO for Knoevenagel and Claisen-Schmidt condensation reactions. **D. Dissanayake**, **D. Rathnayake**, S.L. Suib

INOR 171. Highly efficient cobalt catalyzed hydroboration of alkenes and carbonyl compounds. **D. Bedi**, M. Findlater, S.R. Tamang, S. Haghghi

INOR 172. Synthesis, characterization, and oxidation catalysis studies of cobalt-

containing pyridine-aza macrocyclic (PyMac) bleomycin model complexes. **S.G. McKenzie**, H. Seidel, E.V. Rybak-Akimova

INOR 173. Electrochemical investigation of the effect of mode of inclusion of guest metal ions Fe and Al on oxygen evolution catalysis at $Ni(OH)_2/NiOOH$ films in borate and KOH. **R. Farhat**, J. Dhainy, R. Fayad, H. Ghandour, **L.I. Halaoui**

INOR 174. Mechanistic studies of hydrogen peroxide activation with non-heme iron aminopyridine complexes: Fe(III), Fe(IV), and beyond. **M. Piquette**, G. Yang, O.V. Makhlynets, E.V. Rybak-Akimova

INOR 175. Amino acid as a chiral modifier in metal-organic framework for asymmetric hydrogenation reaction. **C. Ward**, J. Goh

INOR 176. Syntheses of structurally rigid Mo-Calix[6]azacryptand complexes and studies of dinitrogen reduction.

L.A. Wickramasinghe
Weerakkodi, R.R. Schrock, C. Tsay, P. Mueller

INOR 177. Application of a unique, multifrequency sonication system to improve nanomaterials synthesis through the heterodyne effect. **A. Falco**

INOR 178. Novel rhenium(I) phosphazane complexes with applications towards electrocatalytic CO_2 reduction.

M.R. Crawley, T.R. Cook

INOR 179. Application of cationic rhodium and ruthenium complexes to catalytic hydrogenation and allylic isomerization. **K. Morris**, P.T. Maragh, T.P. Dasgupta, K. Abdur-Rashid

INOR 180. Air-stable dicopper(I,I)-naphthyridinediimines: Catalytic applications in reactions involving C-H activation of terminal alkynes. **R. Conger**, S. Fox

INOR 181. Intercalation of rhenium bipyridine complexes with zirconium phosphate nanoparticles for energy-related reactions. **D.E. Del Toro-Pedrosa**, M. Ramos-Garces, J.L. Colon, T.F. Jaramillo, J.A. Perez, L. Riera, S. Fombona, R. Arevalo

INOR 182. Adding molecular diodes into homogeneous photocatalytic systems. **T. Finley**, D. Boston

Section G

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Bioinorganic Chemistry: DNA, RNA & Inorganic Drugs

S. A. Koch, *Organizer*

5:30 - 7:30

INOR 183. Design of deferasirox peptide-conjugated ligands for a selective delivery of anticancer Ti(IV) compounds. **L.V. Fernandez**, A.D. Tinoco, M. Pandrala

INOR 184. Transition metals coordination and biological investigations of alpha-pyridoin-benzylhydrazide derivatives. **D.A. Alwaheeb**

INOR 185. Asymmetric cobaltocenium derivatives for mediated electrochemical biocatalysis. **J. Najjar**, C. McCully, A.K. Udit

INOR 186. Fluconazole needs copper or iron to generate reactive oxygen species and damage DNA. **A.A. Gaertner**, L. Kozubowski, J.L. Brumaghim

INOR 187. Development of prostate cancer targeted prodrugs based on the copper chelator disulfiram. **A. Dharani**, S. Bakthavatsalam, K.J. Franz

INOR 188. Synthesis and reactivity of gold (I) tetrathiomolybdate complexes. **D. Humaidy**, G.S. Garusinghe, A.E. Bruce, M.R. Bruce

INOR 189. Bifunctional ligands of Ac-225 for potential applications in antibody-targeted alpha radiotherapy of cancer. **S. Ren**, C. Kang, X. Sun, H. Song, Y. Liu, Y. Chen, H.S. Chong

INOR 190. Nanomedicine for trans-epithelial oral delivery of Ivermectin for Zika. **B. Surnar**, S. Dhar

INOR 191. Tuning the excited state properties of tridentate ruthenium(II) complexes for use in photodynamic therapy by employing N-heterocyclic carbenes. **R. Ryan**, K.C. Stevens, D.K. Heidary, E.C. Glazer, J.P. Selegue

MONDAY MORNING

Section A

Boston Convention & Exhibition Center
Room 252A

Inorganic Chemistry Lectureship: Symposium in honor of Leroy Cronin

W. B. Tolman, *Organizer, Presiding*

8:30 INOR 192. Nanoscaled inorganic clusters and inorganic-organic hybrid macromolecules - ideal models for solution physical chemistry. **T. Liu**

8:55 INOR 193. Polyoxometalates and beyond: Lessons learned from working with Lee Cronin. **C. Streb**

9:20 INOR 194. Phosphine, arsine and related metal-organic frameworks: Unique catalyst support materials. **S.M. Humphrey**, S.G. Dunning, R.E. Sikma, J.E. Reynolds, R. Riparetti, W. Chai, G. Henkelman

9:45 Intermission.

9:55 INOR 195. Polyoxometalates: From artificial enzymes to protein based supramolecular hybrid materials. **T.N. Parac-Vogt**, H.T. Ly, L. Vandebroek

10:20 INOR 196. Water oxidation with cobalt compounds: A quest for essentials. **G.R. Patzke**, F. Song, S. Luber, J. Li

10:45 INOR 197. Inorganic metal-oxo clusters: Breaking down the metal-ligand wall. **M.D. Nyman**

11:10 INOR 198. Exploring the self-assembly of molecular metal oxide nanoclusters. **L. Cronin**

11:40 Concluding Remarks.

Section B

Boston Convention & Exhibition Center
Room 251

Recent Advances in Red & Black Phosphorus Chemistry

Financially supported by HORIBA Scientific

H. Ji, *Organizer, Presiding*
M. Shatruk, *Presiding*

8:30 INOR 199. A versatile and efficient red phosphorus photoelectrode. **Z. Hu**, **J.C. Yu**

9:00 INOR 200. Black phosphorus optoelectronics and electronics. **F. Xia**

9:30 INOR 201. Mid-infrared tunable black phosphorus phototransistor for on-chip sensing applications. **K. Ang**, L. Huang, B. Dong, C. Lee

10:00 Intermission.

10:15 INOR 202. 2D black phosphorus photodetector for near-

infrared imaging applications. **C. Wang, J. Miao**
10:45 INOR 203. Black phosphorous for high-performance photodetectors. **A.B. Kaul**
11:15 INOR 204. Black phosphorous-based photocatalysts for efficient H₂ and O₂ evolution from water under visible and near infrared light irradiation. **T. Majima**

Section C

Boston Convention & Exhibition Center
Room 213

Women in Nanotechnology

Cosponsored by WCC

J. Hahm, Organizer

A. De Bettencourt Dias, Organizer, Presiding

J. Hahm, Presiding

8:30 Introductory Remarks.

8:35 INOR 205. Conversion reactions of atomically-precise semiconductor clusters. **B.M. Cossairt, J. Stein, M. Friedfeld, A. Ritchhart**

8:55 INOR 206. Surface assembly configurations and packing preferences of various proteins on block copolymer nanodomains. **J. Hahm**

9:15 INOR 207. Escaping flatland: Noncovalent monolayers on 2D materials as a foundation for nanoscale 3D design. **S.A. Claridge**

9:35 Intermission.

9:45 INOR 208. Nanoscale colors: The art and science of colloidal gold. **C.J. Murphy**

10:05 INOR 209. Soft surface engineering: The nanoliter aqueous droplet. **S. Lee**

10:25 INOR 210. Fracture healing is expedited via preferential upregulation of Wnt/ β -catenin using targeted nanoparticle GSK3 β inhibitor delivery. **Y. Wang, M. Newman, M. Baranello, T. Sheu, J. Puzas, D. Benoit**

10:45 Intermission.

10:55 INOR 211. DNA-boundaries enhance the binding affinity and proteolytic activity of thrombin. **E. Schöneweiß, K. Bravo-Rodriguez, P. Sokkar, E. Sanchez-Garcia, B. Sacca**

11:15 INOR 212. Engineered nanostructures as a new cue to regulate cellular signaling processes. **G. Liu**

11:35 INOR 213. How nanoscopic surface features on microparticles

produce rotation-sensitive adhesion and particle rolling motion in flow. **M.M. Santore**

Section D

Boston Convention & Exhibition Center
Room 212

The Halpern Legacy: Mechanism, Catalysis & Organotransition Metal Chemistry

A. S. Goldman, Organizer
C. R. Landis, Organizer, Presiding

8:30 Introductory Remarks.

8:40 INOR 214. Mechanistic studies inspired by Jack. **J.E. Bercaw**

9:10 INOR 215. The Halpern Files: Publications from Jack Halpern that guide organometallic chemistry education and research. **M.Y. Darensbourg**

9:40 INOR 216. Selective stoichiometric and catalytic reactions in water-soluble host-guest supramolecular systems. **R.G. Bergman**

10:10 INOR 217. Design and development of a synthetic enzyme for use as a pharmaceutical agent to reduce the undesired side effects of radiation treatment in cancer therapy. **D.P. Riley**

10:40 INOR 218. Unusual coordination chemistry regulates vitamin B₁₂ trafficking. **R. Banerjee**

11:10 INOR 219. The synthesis of CalixAzaCryptand molybdenum complexes for the catalytic reduction of dinitrogen to ammonia with protons and electrons. **R.R. Schrock, L.A. Wickramasinghe**

11:40 INOR 220. Resuscitation of neutrophilic hypochlorous acid-induced damage of mammalian cells by thiocyanate. **M.T. Ashby**

Section E

Boston Convention & Exhibition Center
Room 211

Coordination Chemistry: Synthesis & Characterization

A. Larsen, Organizer
S. Fox, R. J. Gilliard, Presiding

8:30 INOR 221. Dicopper(I,I)-naphthyridinediimine-bis-mercaptides as model complexes of reduced copper A. **S. Fox, R. Conger**

8:50 INOR 222. Tunable secondary sphere hydrogen

bonding for small molecule reduction by first row transition metals. **J. Wilson, N.K. Szymczak**

9:10 INOR 223. Cellulose-Co(II)-bis-terpyridine hybrid colorimetric sensor for micromolar level aqueous cyanide. **C.R. Collins, S. Love, D.J. Boston, I. Bhowmick**
9:30 INOR 224. Slow magnetization of axial Dy(III) complexes and their relaxation in zero field. **A. Upadhyay, M. Nippe**

9:50 INOR 225. Probing steric and electronic effects in substituted trispyridylphosphine ligands using molybdenum carbonyl complexes. **J. Leonard, M. Bezpalko, W.S. Kassel**

10:10 Intermission.

10:20 INOR 226. Low-valent bismuth complexes enroute to bismuth hydride. **G. Wang, L. Freeman, R.J. Gilliard**

10:40 INOR 227. High-Pressure methane storage in carbazole-based porous cages. **C.A. Rowland, B.A. Trump, C.M. Brown, E.D. Bloch**

11:00 INOR 228. Molybdenum-based porous molecular cages for gas storage and solvatochromic sensing. **G.R. Lorz, E.D. Bloch**

11:20 INOR 229. Design and synthesis of highly porous coordination cages. **C.A. Rowland, E. Gosselin, O. Barreda, G.R. Lorz, G.E. Decker, E.D. Bloch**

11:40 INOR 230. Confinement effects on chemical equilibria: Pentacyano(pyrazine)ferrate(II) stability changes within nanosized droplets of water. **D.C. Crans, T. Borunda, A. Myers, M.D. Johnson, M.J. Fisher**

Section F

Boston Convention & Exhibition Center
Room 209

Inorganic Catalysts

S. A. Koch, Organizer
T. R. Cook, S. K. Hurst, Presiding

8:30 INOR 231. Synthesis of a series of palladium and platinum derivatives. **S.K. Hurst**

8:50 INOR 232. Impact of metal identity and supporting ligand on acetylene hydration by group six catalyst models. **A. Najafian, T.R. Cundari**

9:10 INOR 233. Electro- and photo- catalytic carbon dioxide reduction using the homogeneous transition metal complexes. **Y.**

Hameed, G. Rao, B. Gabidullin, D.S. Richeson

9:30 INOR 234. Formation, spectroscopy, and oxidase/oxygenase reactivity of two fluorinated {Cu₃O₂} species. **S.E. Neville, E. Norwine, V. Oswald, N. Orth, I. Ivanovic-Burmazovic, M. Domin, D. Rukser, F. Biebl, B. Grimm-Lebsanft, G. Praedel, M. Teubner, M. Rubhausen, P. Liebhauser, T. Rosener, J. Stanek, A. Hoffmann, S. Herres-Pawlis, L.H. Doerrer**
9:50 Intermission.

10:10 INOR 235. The role of the metal in the dual-metal catalysed hydrophenoxylolation of diphenylacetylene. **A. Poater**

10:30 INOR 236. Covalent electrocatalyst immobilization on high surface area carbon materials. **C. Knell, L.A. Berben, S.L. Scott, B. Johnson**

10:50 INOR 237. Small molecule activations with self-assembled polynuclear catalysts. **T.R. Cook, A.N. Oldacre**

11:10 INOR 238. Hydrogen production catalyzed by molecular Co complexes with polydentate ligands in aqueous solution. **X. Zhao, P. Wang, X. Hu, G. Liang, P. Li, C. Mokry, S. Lei, M. Sow, C. Otero, C.E. Webster**

11:30 INOR 239. Computational modeling of rhenium electrocatalysts featuring charged functional groups in the secondary coordination sphere for CO₂ reduction. **J. Panetier, X. Li, S. Sung, M. Nippe**

Section G

Boston Convention & Exhibition Center
Room 208

Chemistry of Materials: Metal Organic Frameworks

C. G. Lugmair, Organizer
R. W. Larsen, C. Mottillo, Presiding

8:30 INOR 240. Two-dimensional transition metal dichalcogenides as metal source of metal-organic frameworks. **Y. Liu, Y. Sun, S. Hu, X. Guo, C. Song**

8:50 INOR 241. Extended DLVO interactions of a metal-organic framework: Implications on colloidal dispersion. **E.L. Butler, B. Reid, C. Petit, P.F. Luckham, A.G. Livingston, S. Guldin**

9:10 INOR 242. Fabrication of MOF@polymer architecture

towards precise functional composite materials. **T. Li, S. He, H. Wang**

9:30 INOR 243. The design and synthesis of optically active coordination polymers and metal organic frameworks. **P. Julien, H.M. Titi, T. Friscic, R.D. Rogers**

9:50 INOR 244. Electrochemical synthesis of metal-organic frameworks on modified electrode surfaces. **G.E. Decker, W. Wu, E.D. Bloch**

10:10 Intermission.

10:25 INOR 245. MOF-polymer composite nonwovens by solution blow spinning. **J. Deneff, K.S. Walton**

10:45 INOR 246. Metal-organic frameworks with multi-components in order. **B. Tu, Q. Li**

11:05 INOR 247. Modulating the photophysics of ruthenium polyimine complexes through encapsulation in metal organic frameworks: A time dependent density functional theory study. **R.W. Larsen, L. Wojtas, T.J. Green**

11:25 INOR 248. Nanocasting in metal-organic framework materials. **A. Stein, C. Malonzo, Z. Wang, W. Zhao, T. Webber, R. Penn**

11:45 INOR 249. Clean and scalable synthesis of microporous metal-organic frameworks in supercritical carbon dioxide. **C. Mottillo, J. Marrett, S. Girard, J. Do, C.W. Nickels, D. Gandrath, L. Germann, R. Dinnebier, A.J. Howarth, O.K. Farha, T. Friscic, C. Li**

Innovation & Commercialization in the Chemical Sector

Sponsored by SCHB, Cosponsored by INOR

Chemical Applications of Ultrafast X-ray/XUV Spectroscopy & Scattering

Spin Crossover & Transition Metal Photophysics

Sponsored by PHYS, Cosponsored by INOR

Chemistry of Materials

Lectureship & Best Paper Award

Sponsored by PMSE, Cosponsored by INOR

MONDAY AFTERNOON

Section A

Boston Convention & Exhibition Center
Room 252A

Water Splitting & Solar Fuels: Progress & Challenges to Widespread Utilization

K. Bren, T. D. Krauss, *Organizers, Presiding*

1:30 Introductory Remarks.

1:35 INOR 250. Solar production of C8+ fuels. **D. Loh, S.N. Nangle, P. Silver, D.G. Nocera**

2:05 INOR 251. First-row transition metal catalysts for water splitting and CO₂ reduction. **Z. Han**

2:35 INOR 252. Multifaced mechanisms of CO₂ reduction to CO by iridium(III) phenyl-pyridine photo- and electro-catalysts. **G. Manbeck, E. Fujita, D.E. Polyansky**

3:05 INOR 253. Recent studies of the electrochemical reduction of CO₂ by Mn, Re, and Ni complexes. **C.P. Kubiak**

3:35 Intermission.

3:50 INOR 254. Robust catalysts for solar-driven water splitting. **H.B. Gray**

4:20 INOR 255. Changes in nanocrystal surface chemistry upon ligand exchange and the addition of charge carriers. **J.L. Dempsey, C. Hartley, M. Kessler, H. Starr, K. Rountree, R. Knauf**

4:50 INOR 256. Ligand-controlled synthesis and electrochemistry of colloidal copper and iron oxide nanocrystals. **D.A. Brewster, M. Tariq, J.W. Andrews, D.J. Sarappa, K.E. Knowles**

Boston Convention & Exhibition Center
Room 251

Recent Advances in the Photochemistry & Photophysics of the P-Block Elements

T. Hudnall, *Organizer*
D. W. Johnson, *Presiding*

1:30 INOR 257. Strongly reducing visible light organic photoredox catalysts. **G. Miyake**

1:50 INOR 258. Tellurium-containing aerobic photocatalysts. **T. McCormick**

2:10 INOR 259. Photoswitchable carbenes: Using light to control organo- and metal-mediated transformations. **C. Bielawski**

2:30 INOR 260. Metal-free nanomaterials as photosensitizers for hybrid photocatalytic systems. **C.A. Caputo, H.L. Bell, C.A. Ayotte, S. Hollen**

2:50 Intermission.

3:00 INOR 261. Pyrylium and thiopyrylium catalysts for photoredox-mediated ring-opening metathesis polymerization. **A.J. Boydston, L.M. Pascual, P. Lu**

3:20 INOR 262. Irradiation of white phosphorus as a means to access the chemistry of diphosphorus. **D. Tofan, A. Velian, C.C. Cummins, L. Wang, J. Chen, T.A. Van Voorhis**

3:40 INOR 263. Synthesis and photoreduction of heteronuclear late transition metal/main group element complexes. **F.P. Gabbai**

4:00 INOR 264. Supramolecular assemblies and anion recognition: Going p-block. **C. Deng, J. Lohrman, J. Bard, M.M. Haley, D.W. Johnson**

Section C

Boston Convention & Exhibition Center
Room 213

Women in Nanotechnology

Cosponsored by WCC

J. Hahm, Organizer

A. De Bettencourt Dias, Organizer, Presiding

J. Hahm, Presiding

1:30 Introductory Remarks.

1:35 INOR 265. The effect of extreme spatial confinement on the glass transition and thermal stability of polymers infiltrated in nanoparticle films. **Z. Fakhraai, H. Wang, J. Hor, D. Lee**

1:55 INOR 266. Controlling nanoscale disorder in soft materials. **T.W. Odum**

2:15 INOR 267. Carbon nanomaterial electrodes for neurotransmitter detection. **B.J. Venton, C. Yang, P. Puthongkham, Q. Cao**

2:35 Intermission.

2:45 INOR 268. The role of interfaces for water and binary systems under confinement. **T.L. Head-Gordon**

3:05 INOR 269. Synthesis of nanoparticles with strained alloyed surfaces as effective catalysts. **S.E. Skrabalak, J. Gamler, H. Ashberry**

3:25 INOR 270. Polymer ultrathin films: Preparation, stability, and morphology. **W. Chen**

3:45 Intermission.

3:55 INOR 271. Controlling the chemical environment of robust nanodiamond supports for noble metal nanoparticle catalysts. **J.S. Shumaker-Parry, D. Parker, M. Bornstein, I. Zharov**

4:15 INOR 272. Tetrahedrite nanomaterials: Characterization of synthesis and thermoelectric performance. **D.P. Weller, G.E. Kunkel, A.M. Ochs, D.T. Morelli, M.E. Anderson**

4:35 INOR 273. Arrays of high-aspect ratio nanostructures for biological applications. **K.L. Martinez**

Section D

Boston Convention & Exhibition Center
Room 212

The Halpern Legacy: Mechanism, Catalysis & Organotransition Metal Chemistry

C. R. Landis, *Organizer*
A. S. Goldman, *Organizer, Presiding*

1:30 INOR 274. Mechanistic analysis of homogeneous, catalytic C-H bond functionalization processes. **J.F. Hartwig**

2:00 INOR 275. C-H and C-C bond cleavage, and catalytic dehydrogenative C-C coupling by iridium-pincer complexes. **W.D. Jones, M. Wilklow-Marnell, W.W. Brennessel**

2:30 INOR 276. Mechanistic studies of C-H activation by a superoxonickel complex. **C.G. Riordan**

3:00 INOR 277. Reactions of late transition metal complexes with molecular oxygen. **K.I. Goldberg**

3:30 INOR 278. Kinetic and mechanistic understanding of oxidative addition and reductive elimination of Pt(II) and Pt(IV) complexes. **E. Bowes, K. Altus, J. Love**

4:00 INOR 279. Mechanism of insertion of two isonitriles into M-C bonds of group 4 dialkyl complexes. **J. Chen, N. Yassin, J.R. Norton, M. Rauch**

4:30 INOR 280. Promotion of CO insertion into metal-alkyl bonds by nucleophiles: Elucidation of an unanticipated mechanism of the "Halpern insertion reaction". **T. Zhou, S.L. Webb, K. Krogh Jespersen, A.S. Goldman**

5:00 INOR 281. Mechanistic studies of nickel catalyzed cross-

coupling and cross-electrophile reactions. **N. Hazari**

Section E

Boston Convention & Exhibition Center
Room 211

Pathways for Industrial Chemists Symposium

L. M. Berreau, N. S. Radu, *Organizers, Presiding*

1:30 Introductory Remarks.

1:35 INOR 282. Is it Candy Land or Sugar Rush? **D. Mason**

2:00 INOR 283. An academic chemist in the industrial world. **C.R. Mulzer**

2:25 INOR 284. Surfing the whitewash of the metallocene wave. **J.F. Walzer**

2:50 INOR 285. Basic research, technology commercialization, business management...and back. **R.A. Fisher**

3:15 Intermission.

3:25 INOR 286. Navigating a career in industrial research. **K.G. Moley**

3:50 INOR 287. The road less traveled: How being open to unique career pathways makes all the difference. **T.N. Hoerter**

4:15 INOR 288. Innovating great Ideas. **H. Nienaber**

4:40 INOR 289. Insights into R&D careers in the chemical industry. **A.V. Davis**

5:05 Panel Discussion.

Section F

Boston Convention & Exhibition Center
Room 209

Organometallic Chemistry: Applications to Organic Transformations

N. S. Radu, *Organizer*

J. M. O Connor, *Presiding*

1:30 INOR 290. Conjugated 1,3-dien-5-yne cycloaromatization triggered by carbon-hydrogen bond activation. **J.M. O Connor**, D.M. Hitt, P. Qin, H. Steger, K.K. Baldrige

1:50 INOR 291. Palladium-catalyzed cross-coupling of aryl esters. **A. Dardir**, P.R. Melvin, N. Hazari

2:10 INOR 292. Synthesis and reactivity of proazaphosphatrane-supported palladium complexes: Elusive intermediates in cross-coupling. **M. Johnson**

2:30 INOR 293. Platinum(II)-catalyzed additions to conjugated alkynes. **J.W. Hartman**, B. Howard

2:50 INOR 294. Development of an iron-catalyzed Suzuki-Miyaura cross-coupling reaction between alkyl halides and unactivated aryl boronic esters. **M.P. Crockett**, C.C. Tyrol, A.S. Wong, J.A. Byers

3:10 INOR 295. Surface Fe(III)-bipyridine catalysts for selective oxidation of styrene. **J. Rondeau**, M. Louis, S. Lavallee, G. Li

3:30 INOR 296. Metal coordination to conjugated trienes: Di-, tetra-, and hexapto coordination and associated chemical reactivity. **J.M. O Connor**, P. Qin, K.M. Veccharelli, H. Steger, L. Wang, K.K. Baldrige

3:50 INOR 297. Molybdenum imido, tungsten imido, and tungsten oxo alkylidene N-heterocyclic carbene catalysts: Highly active, functional group-tolerant catalysts for olefin metathesis. **M. Buchmeiser**

4:10 INOR 298. PNP transition metal catalyzed sustainable chemistry. **M. Nielsen**

4:30 INOR 299. Aerobic C-C and C-O bond formation reactions mediated by high-valent organometallic nickel(III/IV) species. **S.M. Smith**, L.M. Mirica

4:50 INOR 300. Highly enantioselective activated imine hydrogenation by an iron P-NH-P' catalyst. **S.G. Seo**, S. Smith, A.J. Lough, R.H. Morris

5:10 INOR 301. Exploring group 4 metal complexes as catalysts for C-N coupling reactions. **D.R. Manke**

Section G

Boston Convention & Exhibition Center
Room 208

Chemistry of Materials: Nanomaterials

C. G. Lugmair, *Organizer*
H. V. Kumar, J. Lee, *Presiding*

1:30 INOR 302. Synthesis of shaped intermetallic nanoframes through the low-temperature annealing of core-sandwich-shell nanoparticles. **B.P. Williams**, A.P. Young, I. Andoni, M. Golden, C. Tsung

1:50 INOR 303. Functionalization of boron nitride nanotubes for aerospace applications. **K.K. Smith**, N. Redeker, J.C.

Marcischak, J.R. Alston, A.J.

Guenther, K.B. Ghiassi

2:10 INOR 304. Etching of transition metal dichalcogenide monolayers into nanoribbon arrays.

Z. Wang, X. Zhang, J. Hatchel, A. Apte, C. Tiwary, R. Vajtai, J. Idrobo, R. Ozturk, A.M. Pulickel

2:30 INOR 305. Characterization and applications of exfoliated nanosheets at interface. **H.V. Kumar**, A. Palmieri, F. Ansari, W.E. Mustain, D.H. Adamson

2:50 INOR 306. Chirality-related applications of helical nanoparticles with Sub-10-nm helical pitches. **Z. Huang**

3:10 INOR 307. Patterned molybdenum disulfide growth by ion-beam induced hydroxylation of silicon dioxide substrates. **S.F. Bartolucci**, J.A. Maurer

3:30 INOR 308. Studying the effect of electrospinning parameter and aging time on average diameter and fiber homogeneity for pure electrospun SiO₂-TiO₂ nanofibers via response surface methodology. **B. Motealleh**, J. Grosseohme, C.J. Cornelius

3:50 INOR 309. Controlling the growth of thermally treated nanocrystal seeds on the surface of the substrate. **M.A. Mahmoud**, **M. Abdul-moquet**

4:10 INOR 310. Synthesis and characterization of colloidal Fe(III)-doped strontium titanate nanocrystals. **M. Abdullah**, H. Mansoor, K.R. Kittilstved

4:30 INOR 311. Reducing-agent-free and template-free synthesis of metal nanostructures in aqueous microdroplets. **J. Lee**, D. Samanta, H. Nam, R.N. Zare

Synthesis & Characterization of Nanomaterials for Sustainable Energy

Sponsored by MPPG, Cosponsored by INOR

Chemical Applications of Ultrafast X-ray/XUV Spectroscopy & Scattering Spin Crossover & Transition Metal Photophysics

Sponsored by PHYS, Cosponsored by INOR

Undergraduate Research Posters Inorganic Chemistry

Sponsored by CHED, Cosponsored by INOR and SOCED

MONDAY EVENING

Section A

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Sci-Mix

S. A. Koch, N. S. Radu, *Organizers*
8:00 - 10:00

23, 91, 96, 127, 128, 140-141, 143, 163, 173, 176, 178, 183, 189-190, 293-295. See previous listings.

343, 355, 357-358, 440, 442, 454-455, 475-478, 483, 486-488, 494-495, 499, 507, 509-510, 520-521, 589, 591, 595, 622, 625, 675, 677, 682, 690, 692, 696, 699, 704, 715, 719-720, 724, 727, 729, 734, 737-738, 744-745, 750, 752, 754, 757-758, 762, 766-767, 771. See subsequent listings.

TUESDAY MORNING

Section A

Boston Convention & Exhibition Center
Room 252A

Water Splitting & Solar Fuels: Progress & Challenges to Widespread Utilization

K. Bren, T. D. Krauss, *Organizers, Presiding*

9:00 INOR 312. Eisenberg-inspired smart sensing materials. A.E. Norton, M.K. Abdolmaleki, C.K. Williams, S. Barzegar, S.D. Taylor, J.A. Krause, **W.B. Connick**

9:30 INOR 313. How to turn iron into ruthenium. T. Jiang, Y. Bai, Q. Han, D.B. Mitzi, **M.J. Therien**

10:00 INOR 314. Ultrafast structural and electronic changes in monomeric and aggregated chalcogenorhodamine dyes used for solar hydrogen production. M.F. Mark, Z. Piontkowski, G. Li, M. Kryman, M. Detty, R. Eisenberg, **D.W. McCamant**

10:30 Intermission.

10:45 INOR 315. Bimetallic complexes for enhanced sunlight capture: Role of metal-metal distance on excites state properties. **C. Turro**, T.J. Whittemore, C. Xue

11:15 INOR 316. Probing the electronic properties of a new type of partial paddlewheel dirhodium compound: Trans- versus cis-bridges in di-imine formamidinate compounds. **K.R. Dunbar**

11:45 INOR 317. Photochemical and photoelectrochemical H₂ production using systems sensitized by rhodamine-platinum diimine

dithiolate dyads. **G. Li**, M.F. Mark, D.W. McCamant, R. Eisenberg

Section B

Boston Convention & Exhibition Center
Room 251

Recent Advances in the Photochemistry & Photophysics of the P-Block Elements

T. Hudnall, *Organizer*
Z. M. Heiden, *Presiding*

8:30 INOR 318. Synthesis and characterization of 3-aryl-1,3,2-benzoxazaboroles. **D.E. Gross**

8:50 INOR 319. 1,3-Benzoxaphospholes and related compounds as luminescent materials. **J.D. Protasiewicz**

9:10 INOR 320. The synthesis of boron-containing heteroarenes and examination of their photophysical properties. **C. Martin**

9:30 INOR 321. Stimuli responsive difluoroboron β -diketonate dyes in different environments. **C.L. Fraser**, F. Wang, M. Zhuang, C.A. DeRosa, T. Butler, C. Kerr, M. Daly, D. Song, N. Manu

9:50 INOR 322. Utilization of BODIPY dyes to introduce redox and photochemistry into main group complexes. **Z.M. Heiden**, I. Kieffer, R. Allen, J. Deobald, B. Thompson, J. Fernandez

10:10 Intermission.

10:20 INOR 323. Donor-acceptor facilitated diarylethene photoisomerization. Y. Shi, S. Møllerup, S. Wang

10:40 INOR 324. Doublet emitters derived from singlet carbenes as potential OLED materials. **T. Hudnall**, G. Harmon, C. Barragan, G. Braun, R.N. Arias

11:00 INOR 325. Electron-deficient arylboranes as building blocks for optoelectronic materials. **F. Jaekle**

11:20 INOR 326. Triarylborane π -electron systems with intramolecular charge-transfer transitions. **C. Zhao**

Section C

Boston Convention & Exhibition Center
Room 213

Inorganic Nanoscience Award Symposium

Financially supported by
University of South Carolina

NanoCenter
B. M. Cossairt, *Organizer*
B. Cossairt, *Presiding*

8:30 Introductory Remarks.

8:35 INOR 327. Colloidal quantum wells for energy manipulations on fast timescales. **R.D. Schaller**

9:05 INOR 328. Novel three-dimensional and low-dimensional metal halide perovskites: from light emission to hard radiation detection. **M. Kovalenko**, O. Nazarenko

9:35 INOR 329. Synthesis of light-emitting perovskite nanocrystals and their application in optoelectronic devices. **A. Rogach**

10:05 Intermission.

10:20 INOR 330. Valence and hybridization in artificial atoms: Controlling coupling and superstructure through shape directed nanocrystal assembly. **C.B. Murray**, T. Paik, S. Najmr, M. Zhang, C. Zeng, K.C. Elbert, D. Jishkariani, C.R. Kagan, Y. Wu

10:50 INOR 331. Building devices from colloidal semiconductor nanocrystal assemblies. **C.R. Kagan**

11:20 INOR 332. Manufacturing by self-organization. **N. Kotov**

11:50 INOR 333. Engineering of nanoparticle surface for self-assembly and catalysis. **E. Shevchenko**

Section D

Boston Convention & Exhibition Center
Room 212

The Halpern Legacy: Mechanism, Catalysis & Organotransition Metal Chemistry

A. S. Goldman, *Organizer*
C. R. Landis, *Organizer, Presiding*

8:30 INOR 334. Organoboron-modified cyanometalates for use in nonaqueous redox flow batteries. **H.B. Gray**, B.J. McNicholas, E. Despagne-Ayoub

9:00 INOR 335. Proton-coupled electron transfer activation of a tungsten hydride complex. **J.L. Dempsey**, T. Huang

9:30 INOR 336. Activation of hydrogen and the photogeneration of hydrogen: How Jack's mechanistic thinking informed artificial photosynthesis. **R. Eisenberg**

10:00 INOR 337. Making and breaking iron hydride bonds. **R. Bullock**, D.E. Prokopchuk, G.M. Chambers, E.D. Walter, E.S. Wiedner

10:30 INOR 338. Surface science meets homogeneous catalysis. Surfaces as ligands and activators. **T.J. Marks**

11:00 INOR 339. Self-assembled multinuclear catalysts for the copolymerization of ethylene and polar vinyl monomers. **R.F. Jordan**

11:30 INOR 340. Mechanistic studies of ethylene/polar vinyl monomer copolymerizations using well-defined Ni(II) and Pd(II) complexes. **M. Brookhart**

Section E

Boston Convention & Exhibition Center
Room 211

Organometallic Chemistry: New Ligand Platforms

N. S. Radu, *Organizer*
D. A. Laviska, L. Tahsini, *Presiding*

8:30 INOR 341. Adding planar handle to a carbon bowl: Structure, aromaticity and reduction chemistry of naphthocorannulene. **Z. Zhou**, S.N. Spisak, A.Y. Rogachev, Z. Wei, M.A. Petrukhina

8:50 INOR 342. Influence of BODIPY dye containing ligand scaffolds on metal complex reactivity. **Z.M. Heiden**, N.R. Treich, B. Thompson

9:10 INOR 343. Pursuing two electron chemistry with first-row transition metals using a biologically inspired redox-active ligand. **I. Huerfano**, M. Pink, C. Chen, K.G. Caulton

9:30 INOR 344. New sulfonated CNN-pincer ligands for Pt-CH₃ bond making and breaking: reactivity trend. **J. Ruan**, P.Y. Zavalij, A.N. Vedernikov

9:50 INOR 345. Tales of two isomers: Probing the mechanism of C-H addition to ^tBuPCPIr by comparing the products of reactions with naphthalene and azulene. **D.A. Laviska**, K.A. Grice, T.J. Emge, A.S. Goldman

10:10 INOR 346. Bond activation with PBP pincer complexes of group 9 metals. **O. Ozerov**, Y. Cao, W. Shih

10:30 INOR 347. Dihydrogen activation on a monovalent cobalt

center supported by PNP ligands. **J. Choi**, Y. Lee

10:50 INOR 348. Redox-active behavior of a PPP ligand with a cobalt center. **S. Kim**, Y. Lee

11:10 INOR 349. P-P bond employed in metal-ligand cooperation as an active 1-electron reservoir. **Y. Kim**, Y. Lee

11:30 INOR 350. Monochelating β -diketonate ligands. A.S. Crossman, S.M. Krajewski, **M.P. Marshak**

11:50 INOR 351. Electronic and structural modulation of pincer bis(N-heterocyclic carben) copper complexes: Application in strong bonds activation and catalysis. **L. Tahsini**, R. Latifi, D. Domyati, J. Minnick

12:10 INOR 352. Iron compounds incorporating pyrrole-based pincer ligands: Reactivity and applications in catalysis. **C.V. Thompson**, Z.J. Tonzetch

Section F

Boston Convention & Exhibition Center
Room 209

Inorganic Spectroscopy

C. Popescu, *Organizer*
M. George, *Presiding*

8:30 INOR 353. Time-resolved IR and XAFS studies in organometallic photochemistry: Alkane and noble gas complexes and solvation. **M. George**

8:50 INOR 354. Virtual error bars for property predictions in computational inorganic spectroscopy. **J. Proppe**, M. Reiher

9:10 INOR 355. Spectroscopic chameleons – speciation and vibrational characterization of aluminate and its dimeric analogues using ab initio molecular dynamics. **M. Pouvreau**, M. Dembowski, S.B. Clark, J.G. Reynolds, K.M. Rosso, G.K. Schenter, C. Pearce, A.E. Clark

9:30 INOR 356. Characterizing the effect of ligand tail group over the electronic structure of gold thiolate “staples”. **A. Cirri**, H. Morales, C. Kmiotek, C.J. Johnson

9:50 INOR 357. ²⁰⁷Pb NMR of ferroelectric perovskite lead germanate at and below the paraelectric phase transition. **C.E. Avalos**, B. Walder, J. Viger-Gravel, L. Emsley

10:10 INOR 358. Bridge-mediated intramolecular electron transfer in

opposite directions. **E. Piechota**, L. Troian-Gautier, R. Sampaio, K. Hu, M.K. Brennaman, C.P. Berlinguette, G.J. Meyer

10:30 Intermission.

10:35 INOR 359. Elemental quantification of a standard nanocarbon material subjected to alkaline oxidation. **F.F. Simoes**, N. Batra, P. Costa

10:55 INOR 360. Magneto-phonon interactions in single-molecule magnets by far-IR and Raman with magnetic field. **D.H. Moseley**, Z. Xue, S. Stavretis, K. Thirunavukkuarasu, Z. Lu, M. Ozerov, D. Smirnov

11:15 INOR 361. New cyanide fluorescence sensors based on fluorescein and aza-BODIPY for selective detection in aqueous media and living cells. **N. Wanichacheva**, P. Piyanuch, Y. Tachapermporn, P. Sinthuprasert

11:35 INOR 362. Probing ion coordination and energy exchange in chelate complexes with ultrafast vibrational spectroscopy. **S.C. Edington**, C. Baiz

Section G

Boston Convention & Exhibition Center
Room 208

Chemistry of Materials: Metal Organic Frameworks

C. G. Lugmair, *Organizer*
J. Dou, *Presiding*

8:30 INOR 363. Flexible metal-organic frameworks for gas separation: A mechanistic investigation. **W. Zhou**

8:50 INOR 364. Investigation of gas adsorption in metal-organic framework materials using neutron diffraction. **H. Wu**

9:10 INOR 365. Tubular shape metal-organic framework for controlled drug release. **Q. Wang**, H. Zhou

9:30 INOR 366. Mechanism of rapid NH₃ adsorption by Prussian blue analogues. **S. Manakasettharn**, A. Takahashi, T. Nakamura, **T. Kawamoto**

9:50 INOR 367. Fabrication of free-standing COF membranes for separation application. **Z. Wang**, Y. Chen, **Z. Zhang**

10:10 INOR 368. Cooperative adsorption of carbon disulfide in diamine-appended metal-organic frameworks. **C. McGuirk**

10:30 Intermission.

10:45 INOR 369. Recent advances in porous liquids. **S. James**

11:05 INOR 370. Role of guest-host and guest-guest interactions in selective gas adsorption in MOF materials: Theoretical aspects. **R. Belosludov**

11:25 INOR 371. Carbon dioxide detection with 2D conductive metal-organic frameworks. **J. Dou**

11:45 INOR 372. Chemical warfare agent simulant interactions of Zr-MOFs and the effects of battlefield contaminants on CWA uptake: From fundamental studies to applied research. **C.H. Sharp**, T. Grissom, D.M. Driscoll, P. Usov, A. Ebrahim, D. Troya, A. Frenkel, A.J. Morris, J.R. Morris

12:05 INOR 373. Copper (II) doped zeolitic imidazolate framework-8 (Cu/ZIF-8) as a pH responsive drug carrier: Co-enhancement of bioavailability and activity of curcumin in aqueous media. **T. Dutta**, D. Bagchi, S. Pal

Mechanisms of Binding, Transport & Biotransformation of Toxic Metals

Sponsored by TOXI, Cosponsored by INOR

Chemical Applications of Ultrafast X-ray/XUV Spectroscopy & Scattering

Photocatalysis & Photovoltaics

Sponsored by PHYS, Cosponsored by INOR

TUESDAY AFTERNOON

Section A

Boston Convention & Exhibition Center
Room 252A

Water Splitting & Solar Fuels: Progress & Challenges to Widespread Utilization

K. Bren, T. D. Krauss, *Organizers*
K. E. Knowles, D. W. McCamant, *Presiding*

1:30 INOR 374. Structure/function analysis of a series of bimetallic, hydrogenase-inspired, HER electrocatalysts. **S. Ding**, P. Ghosh, M.B. Hall, **M.Y. Darensbourg**

2:00 INOR 375. Heteroleptic catalyst design for proton reduction. **T. McCormick**

2:30 INOR 376. Catalyst sensitized metal oxides for photocatalytic hydrogen generation. **W.R. McNamara**

3:00 INOR 377. Approaches to sustainable energy based on pincer complexes capable of metal-ligand cooperation. **D. Milstein**

3:30 Intermission.

3:45 INOR 378. Hydrogen storage and release with organic molecules: Heterolytic C-H and N-H/O-H activation. **W.D. Jones**, S. Chakraborty, R. Xu, J. Yuwen, S.M. Bellows, M. Wilklow-Marnell

4:15 INOR 379. Noble-metal-free catalysts for hydrogen production and water oxidation: from molecular systems to nanomaterials. **D. Jiang**, Z. Sun, L. Zhang, **P. Du**

4:45 INOR 380. Efficient photocatalytic and photoelectrochemical generation of hydrogen in noble-metal-free systems. **H. Lv**, R. Eisenberg

5:15 Concluding Remarks.

Section B

Boston Convention & Exhibition Center
Room 251

Recent Advances in the Photochemistry & Photophysics of the P-Block Elements

T. Hudnall, *Organizer*
D. S. Seferos, *Presiding*

1:50 INOR 381. Tunable optical properties and electrochemistry of ladder-type conjugated molecules bridged by dynamic B—N coordination. **L. Fang**, C. Zhu, A. Mu

2:10 INOR 382. Polymeric phosphorescent materials based on tellurium and bismuth. **E. Rivard**, S. Parke, Y. Tsuchiya, E. Hupf

2:30 INOR 383. A trip down the group 16. **D.S. Seferos**

2:50 INOR 384. Phosphorus-containing fluorophores for bio-imaging. **S. Yamaguchi**

3:10 Intermission.

3:20 INOR 385. The enduring utility of azobenzene as a photocontrol unit in hybrid macromolecular systems. **W.J. Brittain**, S.K. Rastogi, S. Zauscher

3:40 INOR 386. Modulating the electronic structure of ligating groups using photochromic molecules: An experimental and theoretical foray. **M.C. Andrews**, **A.F. Cozzolino**

4:00 INOR 387. Ultrafast investigations of photoinduced electron transfer and bond

formation in organic/inorganic hybrid materials. **A.E. Bragg**
4:20 INOR 388. Redefining melanin starting with eumelanin-inspired optical materials. **T.L. Nelson**

Section C

Boston Convention & Exhibition Center
Room 213

Bioinorganic Chemistry: Proteins & Enzymes & Model Systems Emerging Leader in Bioinorganic Chemistry Award Presentation

S. A. Koch, *Organizer*
B. T. Donovan-Merkert, M. D. Liptak, *Presiding*

1:30 Introductory Remarks.

1:35 INOR 389. Investigations into denitrification with bio-inspired iron complexes. **A.R. Fout**, T.J. Miller

2:05 INOR 390. Murine calprotectin sequesters Mn(II) at a hexahistidine site. **R.C. Hadley**, D. Gagnon, R.D. Britt, E.M. Nolan

2:25 INOR 391. Concentration-dependent binding behavior of CdSe quantum dot on SH3 domain. **D. Bell**, S. Kang, R. Zhou

2:45 INOR 392. Binding site for coenzyme A revealed in the structure of pyruvate:ferredoxin oxidoreductase from *Moorella thermoacetica*. **P. Chen**, H. Aman, M. Can, S.W. Ragsdale, C.L. Drennan

3:05 INOR 393. Mimicking class Ib Mn₂-ribonucleotide reductase: Mn^{II} complexes and their reaction with superoxide. **A.R. McDonald**
3:25 Intermission.

3:35 INOR 394. Targeting Fe-S protein to fight neglected tropical diseases. **P.R. Feliciano**, C.L. Drennan, M.C. Nonato

3:55 INOR 395. Metalloprotein design using genetic code expansion. **J. Wang**

4:15 INOR 396. Spectroscopic evidence for electronic control of heme hydroxylation by *Staphylococcus aureus* IsdG. **M.D. Liptak**

4:35 INOR 397. Characterization of protein-protein interactions in 3-ketosteroid-9 α -hydroxylase necessary for protein electron transfer. **S.R. Soltan**

4:55 INOR 398. Elucidating the role of substrate positioning in non-heme Fe(II) and alpha-ketoglutarate dependent halogenase

SyrB2: A computational study. **R. Mehmood**, H. Qi, H.J. Kulik
5:15 INOR 399. Syntheses and characterization of cobalt(II) SNS pincer model complexes for liver alcohol dehydrogenase. **J.R. Miecznikowski**, J.P. Jasinski, M. Kaur, M.A. Lynn

Section D

Boston Convention & Exhibition Center
Room 212

The Halpern Legacy: Mechanism, Catalysis & Organotransition Metal Chemistry

C. R. Landis, *Organizer*
A. S. Goldman, *Organizer, Presiding*

1:30 INOR 400. Mechanism driven catalyst development. **R.H. Grubbs**

2:00 INOR 401. Mechanistic studies of cation-tunable catalytic olefin isomerization. **A.J. Miller**, J.B. Smith, M.R. Kita, A.M. Camp, J. Grajeda, H.M. Dodge

2:30 INOR 402. Asymmetric catalytic hydrogenation of quinolines leading to compounds with high anti-cancer activity and low toxicity. **A. Chan**, J. Tang
3:00 INOR 403. Understanding the mechanism of cobalt-catalyzed asymmetric hydrogenation: Halpern's lessons from rhodium redux? **P.J. Chirik**

3:30 INOR 404. Kinetic investigations into the mechanism of Ti-catalyzed nitrene transfer reactions: What can we learn from the Halpern academic tree? **I. Tonks**

4:00 INOR 405. The synthesis of CO₂-based polycarbonates with functionalities. **D.J. Darensbourg**

4:30 INOR 406. Operando methods, off-cycle species, and rate-controlling pathways in catalytic, enantioselective hydroformylation. **C.R. Landis**
5:00 INOR 407. Designing self-powered nanobots. **A. Sen**
5:30 Concluding Remarks.

Section E

Boston Convention & Exhibition Center
Room 211

Chemistry of Materials: Nanomaterials

C. G. Lugmair, *Organizer*
G. Nolis, M. Zhou, *Presiding*

1:30 INOR 408. Comprehensive magnetic study of nanostructured mesoporous manganese oxide materials and implications for catalytic behavior. **E. Moharreri**, W. Hines, S. Biswas, D. Perry, J. He, D. Murray-Simmons, S.L. Suib
1:50 INOR 409. Effect of soft template variation on the synthesis, physical and electrochemical properties of manganese oxide nano-materials. **M. Danish, M. Tayyab**

2:10 INOR 410. Nickel boride nanocrystals: promising electrocatalysts for water splitting. **A. Herve**, T. CHAN CHANG, M. HAN, B. LASSALLE, C. Sanchez, S. Carencio, D. PORTEHAULT

2:30 INOR 411. Size dependent thermal decomposition of prussian blue analogue as precursors for magnetic nanoparticles. **D.A. Hardy**, S.E. Parrish, G.F. Strouse

2:50 INOR 412. Disproof of a surface-ligand thermodynamic effect in the synthesis of Co₃O₄ nanoparticles. **M. Zhou**, S. Folkman, M. Nicki, R.G. Finke

3:10 INOR 413. Colloidal Mn-O phase space as a function of temperature and oxidizing agent. **G. Nolis**, J. Cabana

3:30 INOR 414. Asking big questions in nanocrystal research. **M.P. Campos**

3:50 INOR 415. Prussian blue analogues as a precursor for facile synthesis of iron-cobalt and iron-cobalt carbide catalytic nanoparticles. **C. Dyer**, G.F. Strouse

4:10 INOR 416. Working in stealth mode: Towards the development of biomolecular corona-resistant hydrophilic nanomaterials for biomedical applications. **T. Joshi**, A. Nsubuga, K. Zarschler, H. Stephan

4:30 INOR 417. Design, self-assembly, and switchable wettability in hydrophobic, hydrophilic, and Janus dendritic ligand-gold nanoparticle hybrid materials. **K.C. Elbert**, D. Jishkariani, J.D. Lee, Y. Wu, C.B. Murray

4:50 INOR 418. Target-specific fluorescent gold nanoclusters for inhibition of bacterial growth. **K. Chen**, S. Tan, T. Chang, J. Kuo, X. Pan, T. Kuo

5:10 INOR 419. In situ study of the transformation of lead halide nanocrystals into lead halide

pervoskite nanocrystals using fluorescent microscopy. **B. Yin**

Section F

Boston Convention & Exhibition Center
Room 209

Lanthanide & Actinide Chemistry

A. De Bettencourt Dias, *Organizer*
E. Boros, M. T. Dumas, E. V. Govor, D. E. Smiles, *Presiding*

1:30 INOR 420. Investigation of the electronic structure and evaluation of the covalency of cerocene, (C₈H₈)₂Ce, using carbon K-edge X-ray absorption spectroscopy. **D.E. Smiles**, R.A. Andersen, E.R. Batista, D.L. Clark, J.M. Keith, S.A. Kozimor, R.L. Martin, D.K. Shuh, S.E. Stieber, T. Tylyszczak, S.G. Minasian

1:50 INOR 421. Luminescent properties of lanthanide complexes with perfluorinated pinacolate and *t*-butoxide ligands. C.M. Kotyk, J.E. Weber, **A.S. Hyre**, J. McNeely, J. Montiero, M. Domin, A.L. Rheingold, A. De Bettencourt Dias, L.H. Doerr

2:10 INOR 422. Mechanism of liquid-liquid solvent extraction of uranyl by tributyl phosphate: A study using vibrational sum frequency generation spectroscopy. **R. Kusaka**, M. Watanabe

2:30 INOR 423. Actinide separation from LiCl-KCl molten salt using sacrificial Gd anode. **P. Bagri**, J. Ong, C. Zhang, M.F. Simpson

2:50 INOR 424. Efficient energy transfer from near-infrared emitting gold nanoparticles to pendant ytterbium(III). **S. Crawford**, C.M. Andolina, D. Kaseman, B. Ryoo, A. Smith, K. Johnston, J. Millstone
3:10 INOR 425. Exploring the synthesis and reductive chemistry of bimetallic rare-earth complexes. **M.T. Dumas**, J.W. Ziller, W.J. Evans

3:30 INOR 426. Understanding and controlling the emission brightness and color of molecular cerium luminophores. **Y. Qiao**, D. Sergentu, H. Yin, A. Zabula, T. Cheisson, A. McSkimming, B.C. Manor, P. Carroll, J.M. Anna, J. Autschbach, E.J. Schelter

3:50 INOR 427. Reactivity of imino-functionalized indoles with rare-earth metal amides and alkyls: Catalysis for isoprene controllable polymerization. **S. Wang**

4:10 INOR 428. Self-illuminated luminescent lanthanides as multimodal imaging probes. A. Cosby, S. Ahn, **E. Boros**

4:30 INOR 429. Exploring aryloxide ligands in the synthesis of complexes of new +2 ions of the rare-earth metals. **S.A. Moehring**, J.W. Ziller, W.J. Evans

4:50 INOR 430. Binding and extraction of trivalent lanthanides by tripodal sulfonamides and pyrazoles: structural, theoretical and spectroscopic studies. **E.V. Govor**, A.N. Morozov, T. Jonah, G.A. Flores, A.M. Mebel, R.G. Raptis, K. Kavallieratos

5:10 INOR 431. Recent advances in f-block metallocenophane chemistry: Development of mono- and multi- lanthanide-[1]ferrocenophane single-molecule magnets. **T. Latendresse**, V. Lieru, B. Wilkins, N.S. Bhuvanesh, L. Chibotaru, M. Nippe

5:30 INOR 432. Lanthanide(III)-binding proteins as sensors for molecular fMRI. **P. Harvey**, V. Hsieh, A. Jasanoff

Section G

Boston Convention & Exhibition Center
Room 208

Solid-State Inorganic Chemistry

C. G. Lugmair, V. Poltavets, *Organizers*
C. Thompson, *Presiding*

1:30 INOR 433. Printable thin-film lead zirconate titanate (PZT) deposition using an aerosol deposition printing method. **A.R. Marotta**, S. Williams

1:50 INOR 434. The dawn of the chemistry of quantum materials: Discovery, synthesis, and behavioral insights. **T. McQueen**

2:10 INOR 435. Chemical and electrochemical lithium intercalation in the layered tetravalent pnictides GeAs and SiAs. **J. Mark**, K. Woo, K. Kovnir

2:30 INOR 436. Layered intergrowth compounds for ultralow thermal conductivity. **A. Banik**, K. Biswas
2:50 INOR 437. Deposition of solid-state precursors for cobalt-doped zinc oxide. **A.W. Apblett**, T. Reed

3:10 INOR 438. Investigation of structural and magnetic properties of GdT₂Al compounds (T = Sc, Cr, Co). **G. Agbaworvi**

3:30 INOR 439. Structural and magnetic properties of 4d and 5d double perovskites, SrLaBB'O₆ (B = Mg, Mn, Zn; B' = Ru, Os). **A. Bowser, C. Mauws, M. Rutherford, C. Boyer, C. Wiebe, C. Thompson**

3:50 INOR 440. Interplay between charge density wave behavior and antiferromagnetic order in the intermetallic single crystal system Eu(Ga_{1-x}Al_x)₄. **M. Stavinoha, J. Cooley, S. Minasian, T. McQueen, S. Kauzlarich, C. Huang, E. Morosan**

4:10 INOR 441. Hybrid 2D Dion-Jacobson perovskites and application in solar cells. **L. Mao, W. Ke, L. Pedesseau, Y. Wu, C. Katan, J. Even, M.R. Wasielewski, C. Stoumpos, M.G. Kanatzidis**

4:30 INOR 442. Data-mined ion substitutions in crystals: Reassessment of Goldschmidt's rules of ion substitution. **O.C. Gagne, R.M. Hazen**

TUESDAY EVENING

Section A

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Organometallic Chemistry: Synthesis & Characterization-Late Transition Metals

N. S. Radu, *Organizer*

5:30 - 7:30

INOR 443. Experimental thermodynamic studies of displacement of phosphine ligand with pyridine and acetonitrile in iridium pincer complexes. **S. Haghghi, M. Findlater**

INOR 444. Fundamental studies of high- and low-valent nickel compounds. **J.B. Dicciani, T. Diao**

INOR 445. Synthesis and reactivity of a rhenium dioxo complex. **A.K. Oanta, T.D. Lohrey, R.G. Bergman, J. Arnold**

INOR 446. Redox communication in bis(PNP) complexes as a function of the connecting bridge. **C. Yu, O. Ozerov**

INOR 447. Carbazole based non-innocent ligand metal complexes: Synthesis, characterization, and redox behavior. **A.M. Lugosan, D. Dickie, M. Zeller, W. Lee**

INOR 448. Synthesis and characterization of new pincer-supported group 9 metal complexes. **M. Hung, O. Ozerov**

INOR 449. Synthesis, characterization, and photophysical

properties of cyclometalated N-heterocyclic carbene platinum(II) complexes. **F. Mastrocinque, C.M. Anderson, J. Tanski**

INOR 450. Formation of an iridium benzylidene with azaquinone methide character via alkoxycarbene cleavage. **B. Mueller, Y. Zhang, N. Schley**

INOR 451. Systemic electronic effects of palladium, platinum and other metal-containing phenyl terpy complexes. **H. Pigg, M.D. Wheeler, J. Herring, S.K. Hurst**

INOR 452. Exploiting cyclometalation reactions to yield novel transition metal complexes modeled on structural motifs found in efficient luminescent materials. **D.A. Laviska, S.X. Battaglia, D.L. Gamarro, A.G. Rodriguez**

INOR 453. Catalytic aerobic oxidation of alcohols by copper complexes bearing redox-active ligands with tunable H-bonding groups. **K. Rajabimoghadam, I. Garcia-Bosch**

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Organometallic Chemistry: Applications to Materials & Polymer Science

N. S. Radu, *Organizer*

5:30 - 7:30

INOR 454. B(C₆F₅)₃ activated Mo and W oxo alkylidenes for stereospecific ring-opening metathesis polymerization. **T. Yan, R.R. Schrock**

INOR 455. Bimetallic xylyl-linked multi-functional beta-diketiminato frameworks and their catalytic activity in ring-opening polymerization (ROP). **X. Dong, J.R. Robinson**

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Nanoscience

B. G. Trewyn, *Organizer*

5:30 - 7:30

INOR 456. Synthesis of early transition metal oxide nanomaterials and their conversion to nitrides. **A.P. Purdy, A. Kastl**

INOR 457. Improved antimicrobial properties of copper and ascorbic acid based nanoparticle systems: Advanced drugs for a post-

Section B

antibiotic era. **T. Dassanayake Mudiyansele, S. Huang**

INOR 458. Atomic scale observation of phase transformation in Ag₂S nanoparticles. **J. Liu, Y. Wang**

INOR 459. One-step and controllable synthesis of heteroatom-doped graphene nanosheets by mechanochemical ball-milling. **C. Jun-Xiang**

INOR 460. Vapochromic response of heterometallic nanoparticles in the design of chemical sensors. **A.D. Nicholas, F. Barnes, M.A. Sturner, R.D. Pike, H.H. Patterson**

INOR 461. Molecular functionalization of MoS₂ by a cobalt dithiolene complex. **A. Gupta, F. Mujid, J. Park, M.D. Hopkins**

INOR 462. Robust water soluble gold-carbon nanoparticles as a catalyst for the reduction of 4-nitrophenol. **A.A. Ahmad, S. Panicker, A. Mohamed, A.E. Bruce, M.R. Bruce**

INOR 463. Hydrothermal studies for photophysical properties of hydrochar and biochar materials. **A. Alamgir, S. Begum, A. Pramanik, P.C. Ray**

INOR 464. Towards spin transition composites: Synthesis and analysis of passive/active iron triazole-oxide composites. **A. Blanco, T. Rostamzadeh, L. Spinu, J.B. Wiley**

INOR 465. Palladium nanoparticle-halloysite nanocomposites. Synthesis, characterization and catalytic activity. **J. Hamdi, A. Blanco, J.B. Wiley, M. Trudell**

INOR 466. Fruit based green synthesis of multicolor nanoprobe for tracking breast cancer heterogeneity. **S. Begum, A. Pramanik, P.C. Ray**

INOR 467. Synthesis and characterization of europium-doped cerium oxide nanotubes as drug delivery vector. **A. D'Achille, J.L. Coffey**

INOR 468. Analysis of sonochemical parameters and various ligands effects on (Zn_xAg_yIn_z)₂S₂ synthetic mechanism. **S. Yeon, S. Sul, H. Seo, J. Park, J. Jung**

INOR 469. Self-assembled porphyrin monolayers for non-covalent functionalization of monolayer molybdenum disulfide. **A.P. Grorud, F. Mujid, J. Park, M.D. Hopkins**

INOR 470. Synthesis of zirconium or tantalum-doped titanate nanofibers for enhanced bone tissue engineering. **P. Cole, M. Malloy, L. Roeder, Z.R. Tian**

INOR 471. Multifunctional therapeutic nanoparticles for atherosclerosis. **M. Banerjee, B. Surnar, B. Banik, S. Dhar**

INOR 472. Colloidal synthesis of highly luminescent lithium silicate nanoparticles and their chemical transformation into different crystal structures. **E. Eladgham, T.A. Nakagawara, U. Ozgur, D.O. Demchenko, I.U. Arachchige**

INOR 473. *In situ* synthesis, photophysical, and catalytic properties of "ligand-less" nanoparticle@FMOF-1 nanostructures formed via liquid phase epitaxy/ripening. **B.L. Kamras, M. Omary**

INOR 474. Tetrafluoroborate surface ligand affects on the plasmonic behavior of copper sulfide nanoparticles. **H.K. Le, Z. Zeng, K. Plass**

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Environmental & Energy-Related Inorganic Chemistry

S. A. Koch, *Organizer*

5:30 - 7:30

INOR 475. Evaluation of gas formation and crossover in high voltage lithium-ion batteries with Ni-rich NMC cathodes. **T. Christensen, R. Ruther, C. Mao**

INOR 476. Triplet energy transfer dynamics at the bilayer-solvent interface for application in molecular upconversion DSSCs. **T. Dilbeck, K. Hanson**

INOR 477. Investigation of Lewis acid/metalloocene mediated chemical O₂ reduction. **M.J. Lueckheide, J.R. Robinson**

INOR 478. Bronsted- and Lewis acid effects on copper-catalyzed chemical O₂ reduction. **K.H. Pham, M.J. Lueckheide, J.R. Robinson**

INOR 479. Host-guest encapsulation of alkali metals by Al-pdc-AA cages. **A. May, P. Usov, A.J. Morris**

INOR 480. Examining the effect of air-sea gas exchange on dissolved oxygen concentrations at varied physical conditions in a wind-wave tank. **H.R. Alt, C. Krevanko, E.**

Section D

Lambert, A.W. Smith, B.K. Haus, R.H. Stanley

INOR 481. Neurotoxin degradation and phosphorus recovery by molybdenum(VI) complexes through heterogeneous and homogeneous catalysis. **L.Y. Kuo**
INOR 482. Lewis-acid promoted homogeneous electrocatalytic oxygen reduction mediated by molecular Cu-complexes. **N.P. Vargo**

INOR 483. Water oxidation catalysis by manganese oxide/cobalt oxide @iron oxide core-shell nanocomposites. **L. Achola**, A. Ghebrehiwet, S.L. Suib
INOR 484. Ligand functionalization to tune water uptake and stability in metal-organic frameworks. **A. Kuznicki**, E.D. Bloch, C. Charles

INOR 485. Tracking reduced nitrogen from electrocatalytic reduction of nitrate by a Cu-based precatalyst. **E.M. Laaker**, J.K. Elinburg, R.W. Fulweiler, L.H. Doerrer

INOR 486. Fast electron-ion transport in inorganic ionic matrices. **A.C. Marschilok**, E.S. Takeuchi, K.J. Takeuchi

INOR 487. Synthesis and characterization of deep eutectic solvents (DES) and their application in CO₂ capture and solubilization. **K. Kazall**, S.E. Ahmed, M.M. Abu Siba, H.I. Nimir

INOR 488. Metal-modified zirconium phosphate monolayers for the oxygen evolution reaction. **M. Ramos-Garces**, J. Sanchez, T.F. Jaramillo, J.L. Colon

INOR 489. Synthesis, structural characterization, and growth mechanism of Li_{1+x}V₃O₈ submicron fibers for lithium-ion batteries. **S. Yue**, J. Li, L. Wang, B. Haider, E. Stach, S.S. Wong

Section E

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Electrochemistry

N. S. Radu, *Organizer*
5:30 - 7:30

INOR 490. Composition-dependent electrocatalytic activity of cobalt sulfides for triiodide reduction in dye-sensitized solar cells. **M. Kim**, J.H. Bang
INOR 491. Preparation and characterization of Pt-based alloy

nanoparticles with chain-like morphologies for electrocatalytic oxygen reduction reaction. **Z. Kong**, Z. Wu, S. Shan, S. Yan, J. Luo, G. Yu, C. Zhong

INOR 492. Aluminum doped vanadium oxide films:

Hydrothermal synthesis and photoelectrochemical properties. **S. Alhadmoul**, A.A. Alothman

INOR 493. New electrochemically active metallocene-based compounds for redox flow battery applications. **B. Schrage**, Z. Zhao, C.J. Ziegler, A. Boika

INOR 494. An electrochemical investigation of the unique redox properties of single atom bridged polyoxometalates using gadolinium as the bridge. **J.F. Kirby**, I. Tariq

INOR 495. Heterogeneous hydrogen evolution with novel nickel ATSM catalysts and the effect of surface morphology. **N.S. Vishnosky**, A. Gupta, M.S. Mashuta, R.M. Buchanan, G. Gupta, C.A. Grapperhaus

Section F

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Coordination Chemistry: Synthesis & Characterization

A. Larsen, *Organizer*
5:30 - 7:30

INOR 496. Solvent orientation in the crystal lattice producing distinct magnetic dynamics in two binuclear Dy(III) polymorphs with a polydentate Schiff base ligand. **Z. Jiang**

INOR 497. Physical and chemical properties of iron 2-oximinocarboxylate complexes. **W. Alamier**, A.W. Apblett

INOR 498. Platinum-based metallosupramolecular nanoparticles designed for cancer therapy. **H. Wang**, Z. Yue, Z. Qiu, Y. Zheng

INOR 499. Di, tri and tertanuclear ruthenium complexes of a heterocyclic and quinonoid bridging ligand: Valence and spin alternatives for the metal/Ligand/metal arrangement, non-innocence and mixed valency. **A.A. Ansari**, G.K. Lahiri, W. Kaim

INOR 500. Synthesis and characterization of ruthenium-hydrazine complexes. **A. Peloquin**, A. Holland, S.T. Iacono, K.B. Ghiassi

INOR 501. Synthesis of lanthanide molybdates via reaction of molybdenum(VI) oxide with aqueous acetate salts. **K. Alrashidi**

INOR 502. Palladium complexes featuring a sterically-demanding salan ligand. **B. Wile**, M.C. Nathaniel, B.M. Nicole

INOR 503. Facile and efficient synthesis of thiosemicarbazone derivatives with functionalized pendant amines. **A.E. Davis**, C.A. Calvary, C.A. Grapperhaus, R.M. Buchanan

INOR 504. Synthesis and characterization of new rhenium-oxo complexes supported by bidentate phosphine ligands. **M.L. Parr**, N. Mizgier, A. Thibodeaux, A. Cocco, L. Tran, M. Lu

INOR 505. Sensing of cobalt by a simple dipodal Schiff's base. **S. Alamgir**, M. Rhaman, **A. Hossain**

INOR 506. Aluminium complexes of nitrogen-based redox-active ligands. **L. Heinzerling**, J. Raab, **C.R. Graves**

INOR 507. New Mn/Ln (Ln = Gd, Tb, Dy, Ho) single-molecule magnet families from the introduction of bulky groups into 2-(hydroxymethyl)pyridine. **L. Pham**, K.A. Abboud, W. Wernsdorfer, G. Christou

INOR 508. Polypyridyl complexes of uracil derivatives attached to 2,2'-pyridyl. **H. Nguyen**, C. Moore, **D. Rillema**

INOR 509. Redox chemistry of pyridine bispyrrolide iron complexes. **B.M. Hakey**, C. Milsman

INOR 510. Synthesis and electrochemical characterization of NiATSM derivatives with pendant hindered amine bases. **C.A. Calvary**, O. Hietsoi, C.A. Grapperhaus, R.M. Buchanan, M.S. Mashuta

INOR 511. Ring-size and steric effects on the coordination chemistry of guanidine ligands with late transition metals. **B.L. Taylor**, N.A. Piro

INOR 512. Exploration of group 14 monometallic and bimetallic systems. **M. Barrientos**, H. Harman

INOR 513. Ruthenium polypyridyl complexes with mercaptopurine: Synthesis, characterization and cytotoxicity evaluation. **A.O. Rajee**, J.A. Obaleye, K.R. Dunbar

INOR 514. Intramolecular hydrogen exchange and topological

rearrangements at rhenium(V) pentahydride complexes supported by two triphenyl phosphine ligands and an amine. **G.A. Moehring**, D. Streisel, A. Petrou, A. Scorzelli, B. Macalush

INOR 515. Understanding the kinetics and thermodynamics of ligand exchange in porous molecular cages. **G.A. Taggart**

INOR 516. Expanding the synthetic scope of heterobimetallic lantern complexes. **L.A. Zuckerman**, S.A. Beach, L.H. Doerrer

INOR 517. Characterization and reactivity of bimetallic copper(I) complexes towards small molecule activation. **M. Bezpalko**, W.S. Kassel

INOR 518. Exerting extreme π -acidity of organic isocyanide ligands: A nonfluorinated rival of C₆F₅NC has been discovered. **Z.A. Wood**, M.D. Hart, J.J. Meyers, N. Gerasimchuk, M.V. Barybin

INOR 519. Coordination chemistry of late first-row transition and lanthanide metal complexes with tris(2-pyridyl)phosphine, tris[2-(6-bromopyridyl)]phosphine and associated Au(I)Cl complexes. **L. Warring**

INOR 520. Activity of several ruthenium tris(2-pyridyl)phosphine complexes as water oxidation catalysts. **L. Wilkinson**, W.S. Kassel, M. Bezpalko

INOR 521. Transition metal complexes bearing ligands with secondary sphere hydrogen bonds for small molecule reduction. **J. Wilson**, N.K. Szymczak

WEDNESDAY MORNING

Section A

Boston Convention & Exhibition Center
Room 252A

Chemistry of Materials: Nanomaterials

C. G. Lugmair, *Organizer*
G. Dey, Y. Fang, *Presiding*

8:30 INOR 522. Mechanistic study of drug adsorption to biodegradable hybrid nanoscaffolds using chemical modeling. **G. Dey**

8:50 INOR 523. Magnetic nanocomposite materials for the archeological waterlogged wood conservation. **E. Aluri**, E. Shofield, S. Corr

9:10 INOR 524. Nanoparticle-based platforms for glucose

detection and interference from sucralose. **B. Yust**, N. Parenti
9:30 INOR 525. Manipulating subcellular distribution of porous coordination cages for cancer nanotherapy. **Y. Fang**, H. Zhou
9:50 INOR 526. Light activated nano-antibiotic for biofilm treatment. **D. Bagchi**, S. Pal
10:10 INOR 527. Environment-friendly alkalis bismuth perovskite nanocrystals with high photoluminescence quantum yield and high stability. **J. Xie**, J. Song, W. Lu, W. Chen
10:30 INOR 528. Vapor phase growth of ZnO nanocolumns and the effect of Cu doping on their photoelectric properties, morphology, and structure. **T.M. Trad**, H. Rivera-Marrer, N. Ohannesian
11:10 INOR 529. Designing ultrastable single quantum emitters for telecom wavelengths. **A. Singh**, S. Krishnamurthy, Z. Hu, A. Singh, Y. Kim, M. Sykora, H. Htoon, J.A. Hollingsworth
11:30 INOR 530. Low frequency Raman spectroscopy of layered organometal halide perovskites. **N. Dahod**, W. Paritmongkol, A. Stollmann, W.A. Tisdale
11:50 INOR 531. Site-selective solder deposition on multi-segment nanowires for nanowire joining and bonding. **E.S. Fratto**, J. Wang, H. Sun, Z. Gu
12:10 INOR 532. Exactly doped semiconductor quantum dots prepared by the cluster seed method. **A. Hassan**, X. Zhang, C. Liu, **P. Snee**

Section B

Boston Convention & Exhibition Center
 Room 251
Chemistry of Materials: Synthesis & Properties

C. G. Lugmair, *Organizer*
 J. P. Dombrowski, A. E. Norton, *Presiding*
8:30 INOR 533. High nuclearity molecular Pb/Mn oxo clusters: Syntheses, structures and magnetic properties. **E.B. Earlywine**, K.A. Abboud, G. Christou
8:50 INOR 534. Silsesquioxane cages: Syntheses and applications. **V. Ervithayasuporn**
9:10 INOR 535. Gold carbene complexes as precursors for gold incorporation in small or medium pore zeolites *via* metal entrapment

during zeolite synthesis. **J.P. Dombrowski**, M. Kung, H. Kung
9:30 INOR 536. Harnessing Fe (III) carboxylate photochemistry for surface modification on materials. **A.E. Norton**, J. Karunarathna, **G. Giammanco**, A. Ostrowski
9:50 INOR 537. In-situ grown metal oxide nanostructured catalysts on substrate for efficient CO oxidation. **B. Liu**
10:10 Intermission.
10:25 INOR 538. Electrochemical intercalation into layered cluster materials. **J.C. Russell**, X. Roy
10:45 INOR 539. Synthesis and investigation into the formation mechanism of Ni-Fe layered double hydroxides for oxygen evolution reaction. **S. Jaskaniec**, C. Hobbs, J. Coelho, **D. Tyndall**, V. Nicolosi
11:05 INOR 540. Metal hopping and reversible crystal transformation in a cobalt citrate SMM molecular solid. **M. Tomas**, J. Campo, L.R. Falvello, E. Forcén-Vázquez, I. Mayoral, F. Palacio, C. Sáenz de Pipaón

Section C

Boston Convention & Exhibition Center
 Room 213

Coordination Chemistry: Characterization & Applications

A. Larsen, *Organizer*
 J. A. Phillips, J. J. Wilson, *Presiding*
8:30 INOR 541. Coordination chemistry to protect against reperfusion injury. **J.J. Wilson**, J.J. Woods, S.R. Nathan, J. Spivey
8:50 INOR 542. Reduction of high oxidation state nitrogen oxyanions using a pre-reduced redox active pincer ligand. **D.M. Beagan**, N. Maciulis, M. Pink, K.G. Caulton
9:10 INOR 543. Mediation of a disrupted nitrogen cycle: rational ligand design to promote nitrate and nitrite reduction. **A. Cabelof**, C. Chen, M. Pink, K.G. Caulton
9:30 INOR 544. Structure, spectroscopy, and reactivity studies of a transient Ru(III) azide. **S.V. Park**, J.F. Berry
9:50 INOR 545. Ray-Dutt and Bailar twists in Fe(II)-tris(2,2'-bipyridine): Spin states, sterics, and Fe-N bond strengths. **D. Ashley**, E. Jakubikova
10:10 Intermission.

10:20 INOR 546. Structural and energetic properties of H₃N-MX₃R complexes: Computations and low-temperature IR spectra. **J.A. Phillips**
10:40 INOR 547. Halogenation affects driving forces, reorganization energies and “rocking” motions in strained [Fe(tpy)₂]²⁺ complexes. **D. Ashley**, C. Liu, J. González-Delgado, E. Jakubikova
11:00 INOR 548. New chelators capable of supporting multiple Mn oxidation states for biochemically responsive MRI contrast agent. **H. Wang**, P. Caravan, E. Gale
11:20 INOR 549. Silver(I) complexes of 2,2' -bipyridine and 1,10-phenanthroline: Synthesis, spectroscopic characterization and antimicrobial properties. **M. Monim-Ul-Mehboob**
11:40 INOR 550. Phosphorescent chromophores as sensors of metal ions and oxygen. **P. Ceroni**, M. Villa, M. Gingras

Section D

Boston Convention & Exhibition Center
 Room 212

Environmental & Energy-Related Inorganic Chemistry

S. A. Koch, *Organizer*
 A. W. Apblett, P. Deria, *Presiding*
8:30 INOR 551. Super large Stokes shift and “turn-on” fluorescent probe for Cu²⁺ detection. **N. Kaewnok**, A. Petdum, J. Sirirak, A. Charoenpanich, W. Panchan, S. Sahasithiwat, T. Sooksimuang, N. Wanichacheva
8:50 INOR 552. 3D MnO₂ hollow microspheres as ozonation catalysts for elimination of endocrine disrupting compounds in water purification. **C. He**, Q. Zhang, W. Yang, H. Xu
9:10 INOR 553. Framework-topology controls excitonic properties in MOFs. **P. Deria**, J. Yu, A. V. Wyk, J. Park
9:30 INOR 554. Structural analog approach to decode a heterotrimetallic structure. **H. Han**, Z. Wei, A.M. Abakumov, E.V. Dikarev
9:50 INOR 555. Dye-sensitized hydrobromic acid splitting for solar fuels production. **M.D. Brady**, L. Troian-Gautier, R. Sampaio, G.J. Meyer

10:10 INOR 556. P-type gallium phosphide particles as hydrogen evolution photocatalysts. **Z. Zhao**, F.E. Osterloh, E. Willard
10:30 Intermission.
10:40 INOR 557. Computational modeling of earth-abundant electrocatalysts featuring macrocyclic redox-active ligands for CO₂-to-CO conversion. **J. Panetier**, K. McCardle, X. Su, J.W. Jurss
11:00 INOR 558. Nontraditional porphyrinoid scaffolds as efficient electrocatalysts for the oxygen reduction reaction. **J. Rosenthal**
11:20 INOR 559. Approaching the elusive N₂ reduction to N₂H₂: a strategy involving intramolecular H-bonding and PCET. **E. Gardner**, S. Zhang, C.R. Cobb, S.C. Marguet, H.S. Shafaat, T.H. Warren
11:40 INOR 560. Bioinspired heterogeneous electrocatalysts for CO₂ reduction: Energy-efficient carbon-carbon coupling rivaling enzymes. **G.C. Dismukes**, K.U. Calvinho, A.B. Laursen

12:00 INOR 561. Co-sensitized porphyrin system for high-performance solar cells with TOF-SIMS analysis. **J. Li**
12:20 INOR 562. Coordination polymers for sorption of arsenic and phosphate from contaminated waters. **A.W. Apblett**, D. Corter, A.P. Piquette

Section E

Boston Convention & Exhibition Center
 Room 211

Bioinorganic Chemistry: DNA, RNA & Inorganic Drugs

S. A. Koch, *Organizer*
 A. M. Angeles Boza, L. A. Yatsunyk, *Presiding*
8:30 INOR 563. Organometallic iridium(III) complexes: Highly cytotoxic and selective towards colorectal cancers. **R. Lord**, M. Zegke, I. Henderson, P. McGowan
8:50 INOR 564. At the intersection of host defense peptides and metal ions. **A.M. Angeles Boza**
9:10 INOR 565. Ruthenium(III) and rhodium(III) dihalide complexes: Showing high potency and cancer cell selectivity for *trans* isomers. **M. Zegke**, A. Basri, P. McGowan, **R. Lord**
9:30 INOR 566. The role of Zn(II) in stabilizing WRKY and treble

clef DNA binding domains. **M. Cukan**, D. Wilcox

9:50 INOR 567. Development of electrochemiluminescent platforms to monitor biomolecule binding phenomena. **A. Marangoz**, W. Wu, J. Burch, C.L. Grimes, J. Rosenthal

10:10 INOR 568. Structural studies of CAGAGG repeats from difficult-to-replicate regions of the mammalian genome. **L.A. Yatsunyk**, B. Powell, D. Jordan, Y. Chen, J.B. Chaires, W. Dean, E. Brown

10:30 Intermission.

10:40 INOR 569. Synthesis, spectroscopic characterization, pharmacological investigation and DFT study of ferrocene-modified acyl ureas. **F. Asghar**, A. Badshah, I.S. Butler

11:00 INOR 570. Selective targeting of microtubules in cultured human cells with simple ruthenium(II) polypyridyl complexes: A new class of microtubule stabilizing agents with potential therapeutic applications. **F.M. MacDonnell**, N. Alatrash, F. Issa, A.S. Dayoub

11:20 INOR 571. The change of acidity and basicity of damaged DNA base pairs, a DFT study. **A. Fattahi**

11:40 INOR 572. Ruthenium(II) polypyridyl/N-heterocyclic carbene complexes as cytotoxic pro-drugs. **J.P. Selegue**, R. Ryan, J. Mahmoud, E.C. Glazer, D.K. Heidary, K.C. Stevens, S. Parkin

12:00 INOR 573. Nontraditional tetrapyrrole complexes as efficient photochemotherapeutic agents with remarkably high phototoxicity indices. **J. Rosenthal**, A.M. Potocny, M. Martin

12:20 INOR 574. Enzyme-responsive biosensors for the detection of cancer biomarkers. **M. Burnett**, S. Rodich, K.N. Green

Section F

Boston Convention & Exhibition Center
Room 209

Nanoscience

B. G. Trewyn, *Organizer*
T. A. Dreier, P. Kunal, *Presiding*

8:30 INOR 575. High-yield production of MoS₂ and WS₂ quantum sheets from their bulk materials. **Y. Zhang**

8:50 INOR 576. Production of magnetic nanoparticle arrays on

surfaces from solution using top-down patterning and bottom-up biotemplating for future nanodevices. **R. Jarraled**, A. Rawlings, M. Tanaka, M. Okochi, G.J. Leggett, S. Staniland

9:10 INOR 577. Precise placement of nanoparticles in polymer composites via pre-coordination. **T.A. Dreier**, B. Ringstrand, M.A. Firestone

9:30 INOR 578. Nd³⁺ activated KY₃F₁₀ nanoparticles for high sensitivity nanothermometry. **G. Lucchini**, P. Cortelletti, M. Pellegrini, L. Rolla, A. Skripka, F. Vetrone, L. Marciniak, D.H. Hreniak, A. Speghini

9:50 INOR 579. Large-area ultrathin metal-oxide semiconductor nanoribbon arrays fabricated by chemical lift-off lithography. **C. Zhao**, X. Xu, S. Bae, Q. Yang, W. Liu, J.N. Belling, K.M. Cheung, Y.S. Rim, Y. Yang, A.M. Andrews, P.S. Weiss

10:10 INOR 580. Controlled synthesis and characterization of metal alloy nanoparticles and their size-dependent phase diagrams. **J. Pinkas**, V. Vykoukal, T. Boruvka, A. Kroupa

10:30 INOR 581. Synthesis and catalytic applications of Rh multipod nanoparticles using flow methods and CuM, (M=Rh, Pd) bimetallic nanoparticles in batch reactors under microwave heating. **P. Kunal**, E.J. Roberts, C. Riche, H. Li, C. Yan, J. Troutman, H. Guo, M. Duncan, N. Malmstadt, R.L. Brutchey, C.J. Werth, G. Henkelman, S.M. Humphrey

10:50 INOR 582. Carbon bond structure in fumed nanodiamonds. H. Kim, **K.H. Lee**

11:10 INOR 583. Targeting orthotopic gliomas with renal-clearable luminescent gold nanoparticles. **C. Peng**, J. Xu, B. Du, M. Yu, J. Zheng

11:30 INOR 584. Quantifying the thermodynamics of ligand binding to CsPbBr₃ quantum dots. **S.R. Smock**, R.L. Brutchey

11:50 INOR 585. Colloidal synthesis, energy gap tuning, and carrier dynamics of GeSiSn alloy quantum dots with visible to near IR photoluminescence. E.H. Eladgham, T.A. Nakagawara, D.O. Demchenko, U. Ozgur, **I.U. Arachchige**

12:10 INOR 586. Lewis acidic Z-type ligands and the surface

chemistry of nanocrystal materials. **N.C. Anderson**, J.S. Owen
12:30 INOR 587. Multipolar plasmon expansion for small nanoparticles of arbitrary shapes. **M.A. Ochoa**

Section G

Boston Convention & Exhibition Center
Room 208

Organometallic Chemistry: Synthesis & Characterization

N. S. Radu, *Organizer*
G. Dobereiner, N. A. Piro, *Presiding*

8:30 INOR 588. Synthesis and ion-pairing properties of moderately-coordinating anions for organometallic chemistry. D.I. Wozniak, W.A. Sabbers, **G. Dobereiner**

8:50 INOR 589. NHC supported dinuclear nickel(I) hydride monocation complex. **Y. Cao**, J. Bacsá, J.P. Sadighi

9:10 INOR 590. Synthesis, structure, and reactivity studies on late-metal metallacyclobutene complexes. **J.M. O Connor**, P. Qin, K. Bunker, R.L. Holland, K.K. Baldrige

9:30 INOR 591. Methodologies to extend the pi conjugation in metallocenes. **U.R. Pokharel**, J. Bergeron, D. Daigle, J.P. Selegue

9:50 INOR 592. Synthesis and characterization of aluminum-based heterobimetallic complexes. **T. Yokley**

10:10 INOR 593. Dehydrogenative coupling of 4-substituted pyridines mediated by a zirconium(II) synthon: Reaction pathways and dead ends. **L.S. Merz**, H. Wadepohl, E. Clot, L.H. Gade

10:30 INOR 594. Exploring N₂ activation of [(PNP)Cl(CO)W]₂-μ-N₂] with reducing agents and Brønsted acids. **N. Maciulis**, B. Schlusshass, C. Wuertele, M. Pink, S. Schneider, K.G. Caulton

10:50 INOR 595. Copper chemistry associated with oxidation reactions carried out by complexes of a bis(guanidiny)pyridine ligand. J.E. Allen, B.L. Taylor, **N.A. Piro**

11:10 INOR 596. Solving key challenges of C₂ + N₁ aziridination through improved catalyst design. C.L. Keller, J.L. Kern, G. Elpitiya, P.P. Chandrachud, S. Roy, **D.M. Jenkins**

11:30 INOR 597. Aromatic C-H borylation catalyzed by pincer

complexes of iridium. **M. Hung**, L. Press, O. Ozerov
11:50 INOR 598. Catalytic C(sp²)-H bond activation and stoichiometric oxidation of arenes with O₂ mediated by sulfonated Pt^{II} pincer complexes: A mechanistic characterization. D.B. Watts, P.Y. Zavalij, **A.N. Vedernikov**

12:10 INOR 599. Platinum-catalyzed ligand-directed C-H functionalization reactions. **S. Huo**
12:30 INOR 600. Direct dynamics reveals a blurred line between C-H activation and functionalization mechanistic steps. **R. Carlsen**, D. Ess

Chemical Applications of Ultrafast X-ray/XUV Spectroscopy & Scattering Theory of Excited-State X-ray Spectra

Sponsored by PHYS, Cosponsored by INOR

WEDNESDAY AFTERNOON

Section A

Boston Convention & Exhibition Center
Room 252A

Bioinorganic Chemistry: Proteins & Enzymes & Model Systems

S. A. Koch, *Organizer*
E. Kim, H. R. Lucas, *Presiding*

1:30 INOR 601. Phage-displayed inhibitor peptides against Sortase A: A novel antibiotic molecules. **N. Ersoz**, F. Dudak

1:50 INOR 602. Metal redox chemistry promotes distinct structural assemblies of N-acetylated α-synuclein. **H.R. Lucas**

2:10 INOR 603. Chemoproteomic interrogations of endogenous bacterial metal-ligation. **D. Bak**, E. Weerapana

2:30 INOR 604. Selective conversion of CO₂ to CO at a single nickel center. **Y. Lee**

2:50 INOR 605. Kinetic and spectroscopic investigation of oxygen activation at a single iron center via Gibbs free energy coupling: Generation of an active alkane oxidation catalyst. **L. Cunningham**, J.T. Babicz, W. Tucker, J.L. McCracken, E.V. Rybak-Akimova, E.I. Solomon, J.P. Caradonna

3:10 INOR 606. Role of allosteric activation on the active site properties of phenylalanine

hydroxylase (PheH). **D. Nolan, G. Anarat-Cappillino, J.L. McCracken, J.P. Caradonna**
3:30 INOR 607. Reactivity of late first-row transition metals in a tetrapodal ligand containing a secondary coordination sphere. **M.J. Drummond, A.R. Fout**
3:50 Intermission.
4:00 INOR 608. Principles of metal selectivity bias in metallothionein metal-thiolate clusters. **J. Calvo, V. Lopez, G. Meloni**
4:20 INOR 609. Mechanistic studies of a biomimetic small-molecule catalyst capable of O₂-dependent alkane oxidations. **M. Malloy, W. Tucker, L. Cunningham, J.P. Caradonna**
4:40 INOR 610. Uncoupled oxygen activation by the alpha-ketoglutarate dependent oxygenase FIH. **M. Knapp, V. Chaplin**
5:00 INOR 611. Lewis acid assisted O-atom transfer chemistry with biomimetic molybdenum complexes. **L.T. Elrod, S. Chen, E. Kim**
5:20 INOR 612. Active site dynamical effects in the hydrogen transfer rate-limiting step in the catalysis of linoleic acid by soybean lipoxygenase-1 (SLO-1): Primary and secondary isotope contributions. **S.S. Iyengar**
5:40 INOR 613. Revealing ion- and mutation-dependent structure and dynamics in calmodulin's ion binding sites with ultrafast vibrational spectroscopy. **S.C. Edington, C. Baiz**

Section B

Boston Convention & Exhibition Center
 Room 251

Organometallic Chemistry: Synthesis & Characterization-Late Transition Metals

N. S. Radu, *Organizer*
 D. C. Powers, *Presiding*

1:30 INOR 614. Comparing interactions of a three-coordinate Pd cation with common weakly-coordinating anions. **D.I. Wozniak, W.A. Sabbers, K. Weerasiri, L. Dinh, J.L. Quenzer, G. Dobreiner**
1:50 INOR 615. Molecular cage synthesis and substitution chemistry of rhodium based molecular gyroscopes. **A.L. Estrada, J. Bluemel, J.A. Gladysz**

2:10 INOR 616. Hume-Rothery inspired bimetallic clusters: Organometallic chemistry at the borderline between molecular compounds and intermetallic solid state phases. **J. Hornung, H. Banh, C. Gemel, R. Fischer**
2:30 INOR 617. Photosynthesis and direct characterization of reactive metal-ligand multiply bonded intermediates. **D.C. Powers**
2:50 INOR 618. Divergent synthesis of well-defined copper (0) and copper hydride nanoclusters. **J.L. Peltier, R. Jazzar, G. Bertrand**
3:10 INOR 619. "Eppur si muove! And yet it moves!": The intermolecular dynamic behaviour of multidentate ferrocenyl phosphines and their metal complexes in solution. **C.A. Urbina-Blanco, B. Kovács, J. Guillaud, J.C. Martins, J. Hierso, M. Saeys**
3:30 INOR 620. Synthesis, characterization, and reactivity of cationic gold diarylallenylidene complexes and related gold (I) carbene systems. **N. Kim, R. Widenhoefer**
3:50 INOR 621. Characterization of monomeric copper(I) and silver(I) hydrides. **E.A. Romero, P. Olsen, R. Jazzar, M. Soleilhavoup, M. Gembicky, G. Bertrand**
4:10 INOR 622. Unsymmetrical dicopper complexes: Synthesis and enhanced reactivity. **A. Nicolay, T. Tilley**
4:30 INOR 623. Synthesis of cobalt-organoazide adduct complexes and their C-H amination reactivity. **Y. Baek, T. Betley**
4:50 INOR 624. Synthesis, reactivity, and oxidative rearrangements of a two-coordinate nickel silyl complex. **R. Witzke, T. Tilley**
5:10 INOR 625. Stepwise reduction of NO₃⁻ to N₂ at a single nickel center. **J. Gwak, Y. Lee**

Section C

Boston Convention & Exhibition Center
 Room 213

Chemistry of Materials: Synthesis & Properties

C. G. Lugmair, *Organizer*
 M. Azim, A. Devi, *Presiding*

1:30 INOR 626. Design, synthesis, and characterization of novel porous coordination complexes. **E. Gosselin, C.A. Rowland, E.D. Bloch, K.P. Balto**
1:50 INOR 627. Iron β-ketoiminates as a versatile class of precursors for nanostructured iron oxide films via vapor phase and solution based methods. **A. Devi, A. Sadlo, D. Peeters**
2:10 INOR 628. Ionic liquids as a mold to cast crystalline microporous aluminophosphates. **M. Azim, A. Stark**
2:30 INOR 629. Ligand-based phase control in porous molecular assemblies. **O. Barreda, G. Bannwart, E.D. Bloch**
2:50 Intermission.
3:05 INOR 630. Plasmon resonance in low dimensional Sr_{1-x}Ti_yNb_{1-y}O_{3+δ} nanoparticles. **T. Ofoegbuna, P. Darapaneni, W. Shelton, J.A. Dorman**
3:25 INOR 631. Investigation of spin dynamics in photodoped Cr:SrTiO₃ colloidal nanocrystals. **W. Harrigan, K.R. Kittilstved**
3:45 INOR 632. Nitrogen and Iron(III) doped TiO₂-hydrocalcite composites, synthesis and photocatalytic properties. **M. Jitianu, A. Hernandez-Mujica, L. Kuhlman, E. Edouarzin, N. O'Connor, A. Jitianu**
4:05 INOR 633. Investigation of Pt(II) precursors for electron beam-induced deposition of Pt nanostructures. **H. Lu, J.A. Spencer, F. Ferreira da Silva, O. Ingólfsson, H. Fairbrother, L. McElwee-White**

Section D

Boston Convention & Exhibition Center
 Room 212

Coordination Chemistry: Characterization & Applications

A. Larsen, *Organizer*
 D. P. Harrison, J. Moberly, *Presiding*

1:30 INOR 634. Coordination chemistry of phosphonate-derivatized ruthenium polypyridyl complexes adsorbed on metal oxide surfaces. **D.P. Harrison, M. Raber, M.D. Brady, L. Troian-Gautier, S.L. Marquard, G.J. Meyer, T. Meyer**
1:50 INOR 635. Tuning the optical and electrochemical properties of zirconium based molecular

photosensitizer. **Y. Zhang, D. Leary, C. Milsmann**

2:10 INOR 636. Luminescent Cr(0) and Mo(0) Complexes. **O.S. Wenger**

2:30 INOR 637. Synthesis of targeted heptamethine cyanine dyes as potential PET/NIR multimodal imaging agents and evaluation of their role as oxygen sensors. **F. Cortezon-Tamarit, H. Ge, S. Pascu**

2:50 INOR 638. Integration of self-assembled metal-organic polyhedra in polymeric mixed-matrix materials for enhanced membrane gas separation. **C.P. Fulong, J. Liu, V.J. Pastore, H. Lin, T.R. Cook**
3:10 Intermission.

3:20 INOR 639. Obstacles in 1:2 metal-ligand coordination complexes: Approaches to navigating the degree of freedom landscape. **S.R. Wolfe, M. Chakraborty, N.J. Rueb, N.A. Johnson, M.F. Roll, K.V. Waynant, J. Moberly**

3:40 INOR 640. Solid state synthesis of vanadyl(IV) complexes: Simple design with high potency towards cancerous cells. **M. Zegke, H. Spencer, R. Lord**

4:00 INOR 641. Synthesis and structures of a family of dinuclear silver(I)pyzولاتes: Assessment of their antibacterial efficacy against *P. aeruginosa* with a soft tissue and skin infection model. **S. Kandel, I. Chakraborty, J. Stenger, R.G. Raptis**

4:20 INOR 642. Syntheses, spectroscopic, crystal structures, biological potency, magnetic and EPR properties of some metal(II) complexes of carboxylate groups and their Co-ligands. **J.A. Obaleye, A.A. Ajibola, B. Van Brecht, A. Ozarowski, A.O. Rajee, A.A. Aliyu, O.R. Eso**

4:40 INOR 643. Role of charge and oxidation states in the structure and reactivity of a family of bis(imino)pyridine iron alkoxides. **S. A. Gonsales, K.R. Delle Chiaie, A.B. Biernesser, M. Thompson, J.A. Byers**

Section E

Boston Convention & Exhibition Center
 Room 211

Main Group Chemistry

T. Hudnall, *Organizer*
G. Pantos, *Presiding*

1:30 INOR 644. Anionic N-heterocyclic dicarbenes: A surprising connection between N-heterocyclic carbenes and thiolates. **Y. Wang**, K.M. Luedecke, N.L. Dominique, H. Hickox, G.H. Robinson

1:50 INOR 645. Interaction of xenon trioxide (XeO₃) with halide ions. **V.G. Hänsch**, J.T. Goettel, G.J. Schrobilgen

2:10 INOR 646. Broazatruxenes - stable borazine derivatives with tuneable properties. **G. Pantos**, S. Limberti, L. Emmett

2:30 INOR 647. Advances in the chemistry of primary phosphines. **J.K. West**, B.A. Palen, E. Landgreen, T. Bell

2:50 Intermission.

3:00 INOR 648. Associative phosphinidene transfer from dibenzo-7-phosphanorbornadiene compounds. **W. Transue**, M.B. Geeson, C.C. Cummins

3:20 INOR 649. Phosphorylation using peptide coupling reagents: Synthetic routes to new ligand architectures and bioactive molecules. **S.M. Shepard**, C.C. Cummins

3:40 INOR 650. Luminescent cyclic amine substituted β -diketones and difluoroboron complexes. **F. Wang**, D. Song, C.L. Fraser

4:00 INOR 651. Synthesis and ligand-based redox chemistry by molecular group 13 complexes. **T. Sherbow**, L.A. Berben

Section F

Boston Convention & Exhibition Center
Room 209

Chemistry of Materials: Metal Organic Frameworks

C. G. Lugmair, *Organizer*

T. J. Kempa, S. Stoian, *Presiding*

1:30 INOR 652. Encapsulation of single metal nano-particle in single-crystalline MOFs by controlling surfactants at interface. **Y. Li**, F. Zhang, X. Liu, C. Tsung

1:50 INOR 653. Dynamic structural flexibility of Fe-MOF-5 evidenced by field-dependent Moessbauer and HFEPR. **S. Stoian**, M. Dinca, A. Ozarowski, C.K. Brozek

2:10 INOR 654. *Quo vadis niobium?* Multifaceted

coordination behavior of MOF-5. **M.D. Korzynski**, L. Braglia, E. Borfecchia, A. Baldansuren, C.H. Hendon, C. Lamberti, M. Dinca

2:30 INOR 655. Luminescent conductive metal-organic frameworks. **G. Skorupskii**, M. Dinca

2:50 INOR 656. Azolate frameworks involving unusual metal nodes. **J. Marrett**, H.M. Titi, D. Gandrath, I. Huskic, T. Friscic

3:10 INOR 657. Gas-phase synthesis of hierarchically structured and responsive metal-organic frameworks. **T.J. Kempa**, F.J. Claire, S. Tenney, M. Solomos

3:30 Intermission.

3:45 INOR 658. Investigating UiO-66 based mixed matrix membranes for membrane separations. **Y. Katayama**, S. Cohen

4:05 INOR 659. Two-dimensional metal-organic frameworks for biomimetic catalysis and bio-related separation. **Z. Gu**

4:25 INOR 660. Characterization of undercoordinated Zr defect sites and μ_3 hydroxyls in UiO-66 with vibrational spectroscopy of adsorbed CO. **D.M. Driscoll**, D. Troya, P. Usov, A.J. Maynes, A.J. Morris, J.R. Morris

4:45 INOR 661. Creating composite materials by embedding the antimicrobial metal-organic framework MOF-199 into a cellulose matrix: A biomimetic adsorbent material for water remediation. **D. Kissel**

5:05 INOR 662. Welding phthalocyanines into bimetallic molecular meshes for low-power chemiresistive detection. **M. Zheng**

Section G

Boston Convention & Exhibition Center
Room 208

Environmental & Energy-Related Inorganic Chemistry

S. A. Koch, *Organizer*

M. E. Hagerman, D. Villagran, *Presiding*

1:30 INOR 663. Polyoxovanadate-alkoxide application in non-aqueous redox flow batteries: Solutions for grid-scale energy storage. **L.E. VanGelder**, A.M. Kosswattarachchi, T.R. Cook, E.M. Matson

1:50 INOR 664. Water oxidation in refineries as an example of applied solar fuels research. **S.W. Sheehan**, C. Chen, J.K. Kotyk

2:10 INOR 665. Developing well-defined base metal molecular electrocatalysts for CO₂ valorization. J. Luo, B. Hu, **T. Liu**

2:30 INOR 666. Driving force dependence of iodide oxidation in termolecular {Ru:2I⁻} ruthenium excited-states. **S.A. Wehlin**, L. Troian-Gautier, R. Sampaio, G.J. Meyer

2:50 INOR 667. Efficient CO₂ reduction using the bismuth alloy Rose's metal in the presence of room-temperature ionic liquid electrolytes. **T. Kunene**, A. Atifi, J. Rosenthal

3:10 Intermission.

3:30 INOR 668. Hypervalent iodine oxides and chloride for the conversion of light alkanes to mono-functionalized products: A radical-based process for selective partial oxidation. **N. Schwartz**, N.C. Boaz, G. Fortman, S.E. Kalman, J.M. Goldberg, R. Fu, R.J. Nielsen, W.A. Goddard, J.T. Groves, T.B. Gunnoe

3:50 INOR 669. Rational design of pyridine-oxazoline ligands in metal-based CO₂-reduction catalysts. **A.M. Angeles Boza**

4:10 INOR 670. Next generation electrolytes for safer sodium ion batteries. **P. Fischer**, M. Do, M. Srinivasan, **F.E. Kuehn**

4:30 INOR 671. Morphology and conductivity studies of laponite/single-walled carbon nanotube nanonetworks. **M.E. Hagerman**, R. Cortez, L. Valdman, D. Dobbs

4:50 INOR 672. Electrocatalytic water splitting with organic macrocycles. **D. Villagran**, Y. Wu, N. Rodriguez, I. Barraza

5:10 INOR 673. FRET colorimetric fluorescence sensing system based on [5]helicene and rhodamine 6G for selective determining Hg²⁺ ions. **A. Petdum**, W. Panchan, A. Charoenpanich, J. Sirirak, V. Promarak, T. Sooksimuang, N. Wanichacheva

Chemical Applications of Ultrafast X-ray/XUV Spectroscopy & Scattering Frontiers in X-ray Methods

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WEDNESDAY EVENING

Section A

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Organometallic Chemistry: Catalysis

N. S. Radu, *Organizer*

5:30 - 7:30

INOR 674. Highly enantioselective iron-catalyzed synthesis of oxaheterocycles via reduction of α -haloketones. **C.K. Blasius**, V. Vasilenko, L.H. Gade

INOR 675. Heterogenized fluoro phthalocyanine photocatalysts. **M. Pelmus**, C. Colomier, H.H. Patel, X.C. Olivia, R. Foglia, M. Suazo, S.M. Gorun

INOR 676. Synthesis and reactivity of a structurally well-defined gold(III) complex in a metal-organic framework. **J.S. Lee**, E.A. Kapustin, D. Toste

INOR 677. Toward copper-catalyzed asymmetric P-C bond formation using chiral NHCs. **L. Mendelsohn**, S. Gibbons, G. Wang, D. Glueck, A.L. Rheingold

INOR 678. Synthesis and characterization of new Schrock-type Mo-alkylidene complexes supported by dithiolate ligands. **H. Tafazolian**, R.R. Schrock

INOR 679. Synthesis, characterization, and reactivity of nickel complexes of primary amido-functionalized N-heterocyclic carbene ligands. **T.V. Roach**, M.L. Schmitz, V.A. Leach, M.D. Miller, B.C. Chan, **S.E. Kalman**

INOR 680. Nickel catalyzed 1,4-selective hydroboration of pyridines and N-heteroarenes. **A. Singh**, S.R. Tamang, M. Findlater

INOR 681. Kinetics and mechanism of halide exchange between CpRu(PPh₃)₂Cl and methyl iodide. **A. Duran**, R.U. Kirss

INOR 682. Catalytic upgrading of ethanol using pincer type complexes. **R.M. Padilla**, E. Christensen, M. Nielsen

INOR 683. Catalytic synthesis of "super" linear alkenyl arenes using a Rh(I) catalyst supported by a "capping arene" ligand: Access to aerobic catalysis. **J. Chen**, R.J. Nielsen, W.A. Goddard, B.A. McKeown, T. Gunnoe

INOR 684. Theoretical study on the reaction mechanisms of

platinum-catalyzed acylation reaction. **E. Warden**, L.J. Bartolotti, Y. Li, S. Huo

INOR 685. Palladium-catalyzed allylic alkylation of 2-aryl-1,3-dithianes, an umpolung synthesis of β,γ -unsaturated ketones. **N. Trongsirawat**

INOR 686. Synthesis of high oxidation state Mo=CHX complexes (X = Cl, CF₃, CN) relevant to Z-selective electron poor olefin metathesis. **S. VenkatRamani**, K. Bukhryakov, R.R. Schrock, A.H. Hoveyda, C. Tsay, P. Mueller

INOR 687. Synthesis of molybdenum oxo alkylidene complexes through addition of water to alkylidyne complexes. **F. Zhai**, K. Bukhryakov, R.R. Schrock

INOR 688. Zirconium MOF hydrates: Remediating organophosphorus contaminants. **Y. Kalinovsky**, B. Blight, S.J. Holder, N.J. Cooper, M. Main

INOR 689. Study of axial steric effects on reductive elimination from (PNP)Rh^{III} complexes. **S. Gu**, K.H. Taylor, J. Chen, G. Fortman, R.J. Nielsen, W.A. Goddard, T. Gunnoe

INOR 690. Exploring C–N coupling promoted at group 4 metal centers. **D. Javier-Jimenez**, A. Kreider-Mueller, D.R. Manke

INOR 691. Comparative nitrene-transfer chemistry to olefinic substrates mediated by a library of anionic Mn(II) triphenylamido-amine reagents and M(II) congeners (M = Fe, Co, Ni): An experimental and computational study. **Z. Sun**, A. Kalra, T.R. Cundari, P. Stavropoulos

INOR 692. Chemical and electrochemical activation modes of a [Cp*Rh] monohydride. **E. Boyd**, K.V. Prather, D. Lionetti, J.D. Blakemore

INOR 693. Multifunctional aryloxide β -diketiminato rare-earth complexes for the ring-opening polymerization of cyclic esters. **K.C. Casey**, J.K. Appiah, J.R. Robinson

Section B

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Organometallic Chemistry: Applications to Organic Transformations

N. S. Radu, *Organizer*
5:30 - 7:30

INOR 694. C–C and C–heteroatom coupling reactions at high valent nickel. **C. Roberts**, N. Camasso, E. Bowes, M.S. Sanford

INOR 695. Non-directed C-H activation and formation of C-N and C-O bonds using Cp*Ir and Cp*Rh catalysts. **M. Kerr**, E. Hickey, E. Mattson, S. Rosario, V. Fratanonio

INOR 696. Development of palladium-catalyzed allylation of aromatic imidates. **S.R. Waetzig**, B. McLernon, P. O'Connor

Section C

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Coordination Chemistry: Characterization & Applications

A. Larsen, *Organizer*
5:30 - 7:30

INOR 697. Density functional theory study of potential NO donors [RuCl(NO)(cyclam)]²⁺ and [Ru(EDTA)NO]⁻. **J. Jorolan**, C. Cabigon

INOR 698. Effects of intramolecular spin polarization on the thermodynamic properties of tetraoxolene exchange-coupled systems. **S. Li**, J.K. McCusker

INOR 699. A new set of Cd(II) coordination polymers with mixed ligand of dicarboxylate and pyridyl substituted diaminotriazine: selective sorption towards CO₂ and cationic dye. **S. Chand**

INOR 700. Rhodamines-functionalized silsesquioxanes cages as optical sensor for highly sensitive and selective detection of Hg²⁺ ion in aqueous solution. **P. Piyanuch**, R. Kunthom, V. Ervithayasuporn, N. Wanichacheva

INOR 701. A highly selective ON-OFF fluorescence detection of Cu²⁺ ions in aqueous solution based on core-substituted naphthalene diimides (cNDIs). **P. Praikaew**, S. Langford, S. Maniam, J. Sirirak, N. Wanichacheva

INOR 702. Aluminium and titanium metal complexes: Synthesis, characterisation and their application in ring opening metathesis polymerisation (ROMP). **R. Lord**, F. Janeway, P. McGowan

INOR 703. Coupling UV-Vis and NMR titration models to determine

association constants of arylazothioformamide ligands with various copper(I) salts. **S.R. Wolfe**, M. Chakraborty, N.A. Johnson, N.J. Rueb, C. Kingsley, M.F. Roll, **K.V. Waynant**, J. Moberly

INOR 704. Molybdenum nitride basicity effects on nitrogen reduction. **A. Hickey**, C. Tsay, P. Mueller, R.R. Schrock

INOR 705. Supramolecular complexes of nucleotides with a macrocycle-based molecular host. **A. Hossain**, M. Rhaman, A. Jahan, D.R. Powell

INOR 706. Selective binding of cyanide with a dinuclear metal complex. **A. Alamgir**, M. Rhaman, D.R. Powell, **A. Hossain**

INOR 707. Cu(II) and Zn(II) complexes of 4-hydroxy-N-((3-hydroxy-5-(hydroxymethyl)-2-methylpyridin-4-yl)methylene)benzohydrazide: Synthesis, characterization, DNA binding, DNA cleavage and antibacterial studies. **V. Chittireddy**

INOR 708. Coordination number effects on copper-mediated aliphatic carbon-carbon bond cleavage reactions of chlorinated β -diketones. **J.G. Elsberg**, S. Saraf, L.M. Berreau

INOR 709. Transition metal ion encapsulation via micelles of diblock copolymers. **C. Chen**, A. Ringuette, H. Koota, L. Cai, S.L. Goh, **C. Goh**

INOR 710. Properties, reactivity, and applications of *trans*-dichlorobis(ethylenediamine)cobalt(III) chloride, *trans*-[Co(en)₂Cl₂]Cl. **C.S. Lin Latt**, **J.P. Lanorio**

INOR 711. Organophosphate sensing using the 3d metal coordination complexes. **S. Love**, I. Bhowmick

INOR 712. Transition metal complexes: Toward catalysis and small molecule therapy. **E. Delgado**, E.R. Paulson, D.B. Grotjahn

INOR 713. Development of macrocyclic Fe(III) T₁ MRI contrast agents. **D. Asik**, **E. Snyder**, J. Sperryak, J.R. Morrow

INOR 714. Copper based organometallic light-emitting luminophores. **Y. Kim**, Y. Lee

Section D

Boston Convention & Exhibition Center
Exhibit Hall B2/C

Chemistry of Materials

C. G. Lugmair, *Organizer*
5:30 - 7:30

INOR 715. Stable homo-interpenetrated triazolate-based MOF for H₂ storage. **Q. Wang**, H. Zhou

INOR 716. Fabrication of ϵ -Fe₂N catalytic sites in porous carbons derived from an iron-triazolate crystal. **Y. Fujiwara**, M. Tsujimoto, K. Kanokwan, N. Tabori, S. Horike, S. Kitagawa

INOR 717. Highly sensitive, transparent, and flexible temperature sensors based on silver fractal dendrites. **J. Kim**, Y. Lee

INOR 718. Silver nanoparticle inks for fine patterns using reverse offset printing. **K. Park**, Y. Lee

INOR 719. Design and applications of dendritic ligands for nanoparticle stability, assembly, and property tuning. **K.C. Elbert**, J.D. Lee, N.M. Krook, D. Jishkariani, Y. Wu, C.B. Murray

INOR 720. Porous gold nanoparticles for inhibiting viral membrane fusion of Influenza A virus. **J. Kim**, S. Haam, D. Song

INOR 721. Design of extended phosphonate ligands to increase porosity and stability of metal-organic frameworks. **W.S. Pantoja Romero**, V. López-Mejias

INOR 722. Efficient thermal atomic layer deposition process enhancing by precursors containing long chains electron-donating ligand. **Y. Zhang**, L. Du, Y. Ding

INOR 723. Modified silicon nanoparticles as advanced anode materials and the improved electrochemical performance for lithium-ion battery. **N. Bao**, Y. Liu, C. Zhong, J. Tian

INOR 724. Synthesis and characterization of ZnO nanoparticles and their use to photocatalyze the degradation of malachite green. **A.E. Harris**, C.C. Pena, J.E. Cowan, J.D. Harris

INOR 725. Electrochemiluminescence of Ru doped metal-organic frameworks. **Q. Loague**, M. Cai, A.J. Morris

INOR 726. Thermal decomposition of (Cat⁺)₂[WSe₄] for facile formation of WSe₂. **J. Kim**, B. Park, T. Chung, C. Kim

INOR 727. Electrochemical reductive grafting and photothermal properties studies of bis(diazonium) gold(III) salts. **S.**

- Isah, B.** Workie, A. Marcano, S. Panicker, A. Mohamed
INOR 728. Mesoporous NNN-pincer metal-organic framework as readily prepared noble metal-free catalyst. **Y. Zhang, J. Li, X. Yang, H. Zhou**
- INOR 729.** 2-Hydroxy-4-methoxybenzophenone-5-sulfonate intercalated layered double hydroxide: 2D restriction-induced luminescence and its application as a fluorescent biosensor. **J. Lu, R. Ma, P. Zhang**
- INOR 730.** Synthesis and design of new type 3 porous liquids. **J. Cahir, M. Tsang, S. James, J. Jacquemin, D. Rooney**
- INOR 731.** Zeolite-supported bismuth oxyiodide visible-light-active photocatalysts for dehydrodimerization of cyclohexane. **R. Arthur, R. Warner, C. Vaughn, J. Hamilton, H.H. Patterson**
- INOR 732.** Solvothermal synthesis of FeSe-SrTiO₃ nanocomposites and their magnetic properties. **K. Kim, S. Huh, K. Song, H. Park, Y. Sur, K. Kim, N.H. Hur**
- INOR 733.** Solvent-free synthesis of nitrogen-doped carbon sheets derived from glucose for CO₂ capture. **K. Lee, S. Lee, H. Kim, S. Bang, B. Lee, N.H. Hur**
- INOR 734.** Fabricating iron oxide magnetic features using an iron MOD coordination complex by inkjet printing. **O. Almalki, S. Williams**
- INOR 735.** Effect of nitro group on the photophysical properties of porphyrin dyes. **A. Aggarwal**
- INOR 736.** Atmospheric-pressure sulfur-based microplasma for material synthesis. **F. Zoghieb, S. Stephen, S. Al Hassan**
- INOR 737.** Solution phase synthesis of highly crystalline Bi chalcogenide nanostructured materials. **V.V. Pillai, V. Tzitzios, S. Stephen, S. Al Hassan**
- INOR 738.** Red phosphorus thin films for energy applications. **P. Martins Amaral, H. Ji, G. Schwenk**
- INOR 739.** Using metal-organic frameworks as multi-functional platforms for the studies of medicinal and cosmetic materials. **M. Zhuo, Y. Chen**
- INOR 740.** Solvothermal synthesis of pure-phase NU-901: The effects of zirconium salt and carboxylic modulator components on MOF topology and phase purity. **S.J. Garibay, T. Islamoglu, O.K. Farha, J. DeCoste**
- INOR 741.** Synthesis and characterization of lead halide perovskites for solid state lighting. **E.T. Nguyen, D.A. Hardy, R.A. Tigaa, G.F. Strouse**
- INOR 742.** Conductivity of borane salts: Characteristics of amino borane cages and hydroxylated versions. **D. Stasko, G. Bosworth, C. Hillebrand, J.N. Woodford**
- INOR 743.** Incorporation of corrole and porphyrin based ligands into metal-organic frameworks. **J. Alatis**
- INOR 744.** Comparative toxicity of ZnO nanoparticles synthesized using different amines. **J.D. Harris, C.C. Pena, J.E. Cowan, K. Cornell**
- INOR 745.** Study of haziness in silica wet-gels and in mechanically strong, thermally insulating polymer-crosslinked aerogels. **C. Mandal, S. Donthula, C. Sotiriou-Leventis, N. Leventis**
- INOR 746.** Structural reorganization of silica wet-gels upon drying: Why aerogels shrink? **C. Mandal, S. Donthula, C. Sotiriou-Leventis, N. Leventis**
- INOR 747.** Design and synthesis of WO(OR)₃L precursors for chemical vapor deposition of WO_x films. **X. Su, D.C. Bock, L. McElwee-White**
- INOR 748.** Sturdy, monolithic SiC and Si₃N₄ aerogels from compressed polymer-crosslinked silica xerogel powders. **P. Rewatkar, T. Taghvaei, A. Saeed, S. Donthula, C. Mandal, N.K. Chandrasekaran, T. Leventis, S. T. K., C. Sotiriou-Leventis, N. Leventis**
- INOR 749.** Fabrication and characterization of cerium-copper-silica and cerium-copper-alumina catalytic aerogels. **T.F. Andre, M.K. Carroll, A.M. Anderson, B.A. Bruno**
- INOR 750.** Electrode-assisted synthesis (EAS) of metal-organic frameworks. **A. Antonio, E.D. Bloch, J. Rosenthal**
- INOR 751.** Functionalization of UiO-66 MOF composites to enhance catalytic performance for the photoelectrochemical water splitting cell. **J.J. Shanahan, D.S. Kissel, J.J. Keleher**
- INOR 752.** Exploring the electrosynthesis of MIL-100(Fe) derivatives. **A.I. Arnoff, E.D. Bloch, J. Rosenthal**
- INOR 753.** Heterodinuclear metal-organic framework materials for photocatalytic carbon dioxide reduction. **H. Brooks, B. Yan**
- Section E
- Boston Convention & Exhibition Center
Exhibit Hall B2/C
- Organometallic Chemistry: Synthesis & Characterization-Early Transition Metals**
- N. S. Radu, *Organizer*
5:30 - 7:30
- INOR 754.** Reimagine early transition metal luminescent metallocenes with built-in redox-active ligands. **P.N. Do, M.E. Nally, Y. Zhang, C. Milsmann**
- INOR 755.** Constructing a scandocene donor series with ⁴⁵Sc solid state NMR. **D. Culver, W. Huynh, M.P. Conley**
- Section F
- Boston Convention & Exhibition Center
Exhibit Hall B2/C
- Inorganic Spectroscopy**
- C. Popescu, *Organizer*
5:30 - 7:30
- INOR 756.** Magnetic effect on photoluminescence in lanthanide-doped nanospinels. **M.C. Ellis, D. Hardy, R.A. Tigaa, S. McGill, G.F. Strouse, N.S. Dalal**
- INOR 757.** Alkyl arylinium iodocuprate networks: Structural and spectroscopic diversity. **R.D. Pike, A.M. Wheaton, A.D. Nicholas, F. Barnes, H.H. Patterson**
- INOR 758.** Exploring Al speciation and interactions in caustic conditions by accurate ²⁷Al NMR shielding tensor calculations. **E. Martinez Baez, C. Pearce, G.K. Schenter, A.E. Clark**
- INOR 759.** Optical memory in 1D chain noble metal thiocyanate complexes. **A.D. Nicholas, B.A. Otten, M.A. Omary, R.D. Pike, H.H. Patterson**
- INOR 760.** Non-covalent interactions of halides with a nitrophenyl-functionalized hexaurea receptor. **M.H. Hasan, B. Portis, C.R. Johnson, A. Gardner, R. Tandon, A. Hossain**
- INOR 761.** Spectroscopic studies of a dinuclear copper(II) complex for halide binding. **M. Rhaman, M.H. Hasan, A. Hossain**
- INOR 762.** Using ²⁰⁷Pb NMR to investigate temperature dependent nuclear spin relaxation and Pb-O bond covalency in relaxor ferroelectrics. **C.E. Avalos, B. Walder, L. Emsley**
- Section G
- Boston Convention & Exhibition Center
Exhibit Hall B2/C
- Bioinorganic Chemistry: Proteins & Enzymes & Model Systems**
- S. A. Koch, *Organizer*
5:30 - 7:30
- INOR 763.** Reduction coordination thermodynamics: Developing and applying a method to quantify metalloprotein electron transfer thermodynamics using copper proteins. **K. Connelly, M.L. Croteau, D. Wilcox**
- INOR 764.** Modulating the catalytic activity of bioorthogonal nanozymes through surface engineering. **R. Cao-Milán, L.D. He, S. Shorkey, G. Tonga, L. Wang, X. Zhang, I. Uddin, R. Das, M. Sulak, V.M. Rotello**
- INOR 765.** Development of photoactivatable sensors for detecting mobile zinc. **F. Wang, J.M. Goldberg, C.D. Sessler, N.W. Vogler, D.Y. Zhang, W.H. Loucks, T. Tzounopoulos, S.J. Lippard**
- INOR 766.** Spectroscopic studies of hCtr1 model peptides reveal an essential role of aspartate-2 in Cu(II) reduction. **M. Matthews, K.L. Haas**
- INOR 767.** Binding thermodynamics and structural stability: The effect of native and non-native metal ions on the periplasmic mercury metallochaperone, MerP. **M. Mehlenbacher, H. Wahba, J.G. Omichinski, D. Wilcox**
- INOR 768.** Modeling NO and O₂ signaling via synthetic [4Fe-4S] clusters. **A. Thibodeaux, R. Lehane, E. Kim**
- INOR 769.** A method for selective depletion of Zn(II) ions from complex biological media and evaluation of cellular consequences of Zn(II) deficiency. **C.E. Richardson, L. Cunden, V. Butty, E.M. Nolan, S.J. Lippard, M. Shoulders**
- INOR 770.** Cu - directed hydroxylation of sp² C-H bonds. **R. Trammell, I. Garcia-Bosch**
- INOR 771.** Synthesis and reactivity of new [2Fe-2S] clusters

to study the role of mitoNEET proteins. **K. Ferguson**, K. Sterling, E. Kim

INOR 772. Spectroscopic and computational studies of a Co(II)-substituted small molecule mimic of superoxide dismutase. **N. Stracey**, M. Murray

INOR 773. Multiple copper binding sites on human copper transporter 1. **E. Slogar**, K.L. Haas

INOR 774. Nitrate and perchlorate reduction via Lewis-acid assisted oxygen atom transfer by biomimetic Mo complexes. **S. Chen**, L.T. Elrod, E. Kim

INOR 775. Kinetics of gold(I) assisted thiolate-disulfide exchange in aqueous media. **S. Pokhrel**, G.S. Garusinghe, A.E. Bruce, M.R. Bruce

INOR 776. Self-assembled peroxidase mimic from guanosine 5'-monophosphate and hemin. **D. Harraz**, J. Davis

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