

Technical Program

FLUO

Division of Fluorine Chemistry

M. Bulinski and M. Etzkorn, *Program Chairs*

SUNDAY EVENING

Hilton Clearwater
Sandpiper Deck

Fluorine Chemistry

Welcome Reception

5:00 – 7:00

Hilton Clearwater
Salon G

Fluorine Chemistry

Poster Session I

Co-sponsored by WL Gore & Associates
M. Etzkorn, *Organizer*

7:00 - 9:00

1. Synthesis, characterization, and computational study of fluoridotungsten(VI) cations. **D. Turnbull**, M. Gerken, S.D. Wetmore
2. New version of Umemoto's reagents: New preparative method for 2,3,7,8-tetrafluoro-*S*-(trifluoromethyl)dibenzothiophenium triflate. **T. Umemoto**, X. Zhou, Y. Li
3. Perfluoroalkylated conductive polymers as organic cathode materials for lithium batteries. **S. Mao**, J.H. Kramer, H. Sun
4. Some novel chemistry of fluorinated isoindanones. **M. Etzkorn**, V.L. Hamilton, K. Afetse, M. J.
5. Perfluoroalkylated electron-deficient aromatic systems for charge-transfer complexes and anion- π interactions. **J.H. Kramer**, Z. Wang, H. Sun
6. Difluoromethylation of the simplest azoles: Features and surprises. **A. Filatov**, K. Petko, T. Sokolenko, Y. Yagupolskii
7. Interaction of alcohols and substituted phenols with 1-chloro-3,3,3-trifluoropropene. **Y. Yagupolskii**, A. Mushta, M. Kremlev, A. Filatov, S. Peng, V. Petrov, S.M. Brandstadter, B.E. Kipp, A. Bulhassan

8. Synthesis, structure, stability and electrochemical properties of perfluoroalkylated coronenes. **N.J. DeWeerd**, E.V. Bukovsky, A. Popov, X. Wang, O.V. Boltalina, S.H. Strauss
9. Synthesis and characterization of perfluoroalkoxy alkane (PFA) copolymers with tetrafluoroethylene (TFE). **C. Hager**, C.A. Parrish, E. Burns, A.V. Matsnev, T. Ono, J.S. Thrasher
10. Perfluoroalkylation of perylene: Reactivity trends and surprises. **C. Brook**, N.J. DeWeerd, I.V. Kuvychko, A. Popov, O.V. Boltalina, S.H. Strauss
11. Fluorinated additives designed for high temperature PEM fuel cells. **M. Zeyat**, A. Paskin, M. Kutter, D. Lentz
12. Nanoscale thin films of poly(vinylidenedifluoride-trifluoroethylene): Morphological structures and electrical properties. Y. Kim, D. Wi, **M. Ree**
13. Design, synthesis of fluoro-spiro-isoxazolines as novel targets for biological study. **P. Das**, A.T. Hamme
14. Synthesis and characterization of hexafluoridomolybdates(V). **R. Stene**, B. Scheibe, A.J. Karttunen, W. Petry, F. Kraus
15. Silver-promoted synthesis of 5-(pentafluorosulfanyl)methyl lactones. **M. Roudias**, A. Gilbert, J. Paquin
16. Development of synthetic approaches for the preparation of SF₅-containing aliphatic compounds. **S. Marie Ange Vanessa**, M. Roudias, J. Paquin
17. Biocompatibility, cell adhesion and bacterial adherence characteristics of fluoropolymer films. **H. Kim**
18. Fluorous fullerene acceptors in vacuum-deposited photovoltaic cells. **B.J. Reeves**, C. Brook, K. Walzer, O.V. Boltalina, S.H. Strauss
19. Drastic influence of fluorine substitution on the regioselectivity in the gold-catalyzed hydroalkylation of haloalkynes. **M. Cloutier**, M. Mamone, J. Paquin
20. Synthesis and performance of highly durable water repellent agents. **T. Hoshino**, Y. Takeda
21. Regioselective gold-catalyzed hydration of CF₃- and SF₅-alkynes. **M. Cloutier**, M. Roudias, J. Paquin
22. Synthesis of tailorable perfluoropyridine-based CuAAC click-coupled polymers. **C.A. Corley**, S.T. Iacono, T.A. Knoerzer, K. Salmon, L. Gumireddy
23. Photochemistry with chlorine trifluoride - compounds with the ClOF₂⁺ cation. **B. Scheibe**, A. Karttunen, F. Kraus
24. Oxidative desulfuration-fluorination of thionoesters using silver(I) fluoride: Optimization and demonstration of functional group tolerance. **D. Driedger**, J.J. Newton, R.E. Martin, R.A. Britton, C.M. Friesen
25. Bio-activity guided isolation of triacyl-sn-glyceride in red cultivar *Allium cepa*. **A.J. Oyewusi**, O.A. Oridupa, A.B. Saba, B.B. Samuel, A.A. Lasisi, W.M. Oluyemi
26. Study of the hydrophobicity of small peptides containing a monofluoroalkene moiety. **M. Drouin**, J.L. Arenas, J. Paquin

- 27.** Palladium-catalyzed addition of dimethylmalonate and its derivatives to 3,3-difluoropropenes. **M. Drouin**, S. Tremblay, J. Paquin
- 28.** Metal-free halogenation of aromatic compounds. **S.R. Mudshinge**, G.B. Hammond, B. Xu
- 29.** Decarboxylative fluorination of lithium 2-pyridylacetates. **R. Kawanishi**, L. Phongphane, S. Iwasa, K. Shibatomi
- 30.** Investigation of a pentafluorobenzyl isothiocyanate as a chiral derivatizing agent. **E.B. Crull**, M. Donahue

MONDAY MORNING

Hilton Clearwater
Salon E,F

Fluorine Chemistry

Fluorine Chemistry I

Co-sponsored by Chemours
M. Etzkorn, *Presiding*

7:50 Introductory Remarks.

8:00 31. (PL) Late stage fluorination with alkali metal fluoride. **V. Gouverneur**

8:40 32. (CL) Efficient radiosynthesis and preclinical evaluation of [¹⁸F]fluoro-GW2580 as a PET tracer for Trk receptor imaging. **T.A. Singleton**, H. Bdair, J. Bailey, D. Choi, A. Aliaga, P. Rosa-Neto, R. Schirmacher, V. Bernard-Gauthier, A. Kostikov

9:00 33. (IL) Recent advances in selective halogenations enabled by a hydrogen bonding cluster. **G.B. Hammond**, X. Zeng, B. Xu

9:20 34. (CL) Unveiling the intermediates and the reaction mechanism of photoredox/gold dual catalysis via Fluorine-19 NMR.. **S. Kim**, D. Toste

9:40 35. (CL) Iodonium ylide-mediated radiofluorination for the synthesis of radiopharmaceuticals. **N. Stephenson**, K. Dahl, H. Huang, S.H. Liang, N. Vasdev

10:00 Intermission.

Hilton Clearwater
Salon E,F

Fluorine Chemistry

Fluorine Chemistry II

K. Matsumoto, *Presiding*

10:20 36. (CL) Optimization of silicon-fluoride acceptor (SiFA) ^{18}F -labeling conditions to achieve high molar activity radiotracers. **J. Bailey**, A. Kampmann, C. Jaworski, R. Schirmacher

10:40 37. (CL) Hydrogen bonding assisted iodo (radio)fluorination of alkenes. **X. Zeng**, G.B. Hammond, B. Xu

11:00 38. (IL) Gold-catalyzed reaction of alkynes bearing a fluorinated substituent at the propargylic position. **J. Paquin**

11:20 39. (IL) Single C–F bond activation of the CF_3 group using Lewis acid promoters. **J. Ichikawa**

11:40 40. (CL) Synthesis, characterisation and catalytic activity of gold, rhodium and palladium complexes featuring fluorinated *N*-heterocyclic carbene ligands. **M. Jamil**, A.K. Brisdon

MONDAY AFTERNOON

Hilton Clearwater
Salon E,F

Fluorine Chemistry

Fluorine Chemistry III

Sponsored by Arkema
S. Riedel, *Presiding*

1:30 41. (PL) Activation of fluorinated molecules at transition metal centers: From model reactions to catalysis. **T. Braun**, T. Ahrens, M. Ahrens, C. Berg, D. Dirican, N. Pfister, C. von Hahmann, M. Talavera, P. Tomar, L. Zámotná

2:10 42. (IL) New nickel-mediated chemistry involving fluorinated ligands and substrates. **D. Vicic**

2:30 43. (CL) Transition metal mediated perfluoroalkyl halide interconversions. **A.D. Asandei**

2:50 44. (CL) Copper mediated $\text{C}_{\text{sp}^3}\text{-CF}_3$ bond formation. **M. Paeth**, W. Liu

3:10 45. (IL) Main group catalysts for C-F bond activation and functionalization. **D.W. Stephan**

3:30 Intermission.

Hilton Clearwater
Salon E,F

Fluorine Chemistry

Fluorine Chemistry IV

Co-sponsored by 3M
J. Ichikawa, *Presiding*

3:50 46. (IL) Reactive fluoride ion for fluoroacid-base and fluorination reactions. **K. Matsumoto**, Y. Haruki, S. Sawada, Z. Chen, Y. Tonouchi, R. Hagiwara

4:10 47. (CL) Hydrosilylation of hydrofluoroolefins. **S. Peng**, Y. Yagupolskii, N. Pavlenko, N. Kiriy, I. Gerus, S.M. Brandstadter, A. Jackson, V. Petrov, L. Sprague, X. Sun

4:30 48. (IL) Improved synthesis and reactivity of the tris(pentafluoroethyl)silanide ion. N. Tiessen, **B. Hoge**

4:50 49. (CL) Hexafluorobutyne in rebirth: Evaluation of classical and discovery of new reactions. N. Pavlenko, I. Gerus, N. Kirij, M. Kremlev, A. Mushta, A. Filatov, **Y. Yagupolskii**, S. Peng, M. Nappa

5:10 50. (CL) Fluorinated diazoalkanes - from the impact of a single fluorine atom towards enantioselective catalysis. **R.M. Koenigs**

TUESDAY MORNING

Hilton Clearwater
Salon E,F

Fluorine Chemistry

Fluorine Chemistry V

Co-sponsored by Oakwood Chemical and Arkema
J. Paquin, *Presiding*

8:00 51. (PL) Discovering new reactivity of TMSCF_2Br and TMSCF_3 as difluorocarbene precursors. L. Li, Q. Xie, C. Ni, **J. Hu**

8:40 52. (IL) Investigations on fluorinations and fluoroalkylations. **S.G. Prakash**

9:00 53. (CL) Synthesis of hominal bis(*gem*- CF_2) fragment. **V. Ivasyshyn**, H.E. Smit, R.C. Chiechi

9:20 54. (CL) Recent advances in nucleophilic fluorination of thiocarbonyl compounds with silver(I) fluoride. **J.J. Newton**, D. Driedger, R.E. Martin, R.A. Britton, C.M. Friesen

9:40 55. (CL) Phosphorous-based reagent system for deoxyfluorination and deoxytrifluoromethylation reactions. **S.B. Munoz**, X. Ispizua-Rodriguez, H. Dang, T. Mathew, S.G. Prakash

10:00 Intermission.

Hilton Clearwater
Salon E,F

Fluorine Chemistry

Fluorine Chemistry VI

Sponsored by WL Gore & Associates
V. Petrov, *Presiding*

10:20 56. (CL) Utilizing chemoselective strategies towards new polymer architectures from fluorinated alkenes. **C.A. Corley**, K. Stewart, A. Peloquin, L. Gumireddy, A.R. Jennings, T.A. Knoerzer, A.M. Schoffstall, S.T. Iacono

10:40 57. (CL) Synthesis and characterization of fluorinated hyperbranched copolymers via self-condensing vinyl polymerization (SCVP) in miniemulsion. **A. Shaaban**, C.R. Pugh

11:00 58. New perfluoro-polyether-based silanes for glass coatings. **A. Shtarov**, T. Gehret, J.M. Hoerter

11:20 59. (CL) Polyaromatic hydrocarbon enchaind semi-fluorinated polymers via step-growth polymerization of fluoroalkenes. K. Shelar, B. Farajidizaji, G. Narayanan, K. Mubeka, B. Donnadieu, C.U. Pittman, A. Sygula, **D.W. Smith**

11:40 60. (IL) Leveraging perfluoromethylene oxys simply. **C.M. Friesen**, J.J. Newton, D. Driedger, C. Bonneaud, T. Burgess, J. Burgess, G. Trusiano, M. Rizzello, A. Vitale, R.M. Bongiovanni, C. Joly-Duhamel

TUESDAY AFTERNOON

Hilton Clearwater
Salon E,F

Fluorine Chemistry

Fluorine Chemistry VII

S. Fustero Lardies, *Presiding*

1:30 61. (PL) Bacterial life based on fluorinated amino acids. F. Agostini, L. Sinn, D. Petras, P.C. Dorrestein, J. Rappsilber, N. Budisa, **B. Kokschi**

2:10 62. (CL) Strategic incorporation of fluorine into bioactive compounds: Progress report. **I. Ojima**, K. Harahanalli, C. Wang, X. Wang, M. Awwa

2:30 63. (CL) High-throughput experimentation methods in the synthesis of fluorinated compounds. **L. Tan**

2:50 64. (IL) Enduring utility of azobenzene as a photocontrol unit in hybrid macromolecular systems. **W.J. Brittain**, S. Rastogi, S. Zauscher

3:10 65. (CL) Fluoropyridines; applications in organic synthesis and peptide chemistry. **W.D. Brittain**, D. Gimenez-Ibanez, S. Cobb

3:30 Intermission.

Hilton Clearwater
Salon E,F

Fluorine Chemistry

Fluorine Chemistry VIII

S. G. Prakash, *Presiding*

3:50 66. (CL) Selective methods for the synthesis of fluorine-containing cyclic β -amino acid derivatives. **L. Kiss**, M. Nonn, R. ÁbrahÁmi, A. Remete

4:10 67. (IL) Application of diastereoselective reactions in synthesis of fluorinated aminophosphonates. **H. Koroniak**, M. Kazmierczak, P. Kaczmarek, **M. Rapp**, T. Cytlak, M. Skibinska, M. Kubicki

4:30 68. (IL) Fluorinated enynes: Synthesis and reactivity. **S. Fustero Lardies**

4:50 69. (IL) Functional group directed C-H bond fluorination. C.R. Pitts, D. Bume, J. Capilato, F. Ghorbani, **T. Lectka**

5:10 70. (IL) Polyfluorinated polyethers from the thermal decomposition of hexafluoroisopropoxide salts under basic conditions. C. Liu, X. Liu, **J.S. Thrasher**

WEDNESDAY MORNING

Hilton Clearwater
Foyer D,E,F,G and Salons E,F,G

Fluorine Chemistry

Poster Session II, Exposition, and Breakfast

Co-sponsored by WL Gore & Associates
M. Etzkorn, *Organizer*

8:00 - 10:00

Papers 1-30 will be presented (Please see Sunday Evening Poster Session I)

THURSDAY MORNING

Hilton Clearwater
Salon E,F

Fluorine Chemistry

Fluorine Chemistry IX

D. A. Dixon, *Presiding*

8:00 71. (PL) Study of intermediates in the deoxofluorination of carbonyl groups using SF₄. **M. Gerken**, D. Stuart, J.T. Goettel, S.D. Wetmore

8:40 72. (IL) Group 6 oxide fluoride complexes of XeF₆, XeF₄, XeF₂, and KrF₂. M. Bortolus, J.T. Goettel, D.S. Brock, D.G. Stuart, H. Mercier, **G.J. Schrobilgen**

9:00 73. (IL) Superacids and fluorinated peroxides. **S. Riedel**

9:20 74. (IL) Role of fluorine chemistry in polynitrogen chemistry. **K.O. Christe**

9:40 75. (IL) News on metal fluorides: Pb₃F₈ and UF₄. **F. Kraus**

10:00 Intermission.

Hilton Clearwater
Salon E,F

Fluorine Chemistry

Fluorine Chemistry X

M. Gerken, *Presiding*

10:20 76. (CL) Crystal growth, structure determination and magnetic properties of new complex fluorides containing U(IV) and Th(IV). **H. zur Loye**, V. Klepov, G.B. Ayer, J. Yeon

10:40 77. (IL) Bio-active nano-metal fluorides as dental and wood protection materials. **E. Kemnitz**, S. Mahn, S. Usmani

11:00 78. (CL) Nanoparticles of complex metal fluorides – from synthesis to applications. **T. Krahl**, A. Rehmer, F. Schütz, E. Kemnitz

11:20 79. (IL) Defluorosilylation of fluoroarenes and fluoroalkanes. **N. Shibata**

11:40 80. (CL) HF-amine complexes: What is new? **T. Mathew**, L. Gurung, P.M. Esteves, K.E. Ginton, S.G. Prakash

THURSDAY AFTERNOON

Hilton Clearwater
Salon E,F

Fluorine Chemistry

Fluorine Chemistry XI

Sponsored by Oakwood Chemicals
J. S. Thrasher, *Presiding*

1:30 81. (PL) Methods for the introduction of the trifluoromethyl- λ^6 -tetrafluorosulfanyl(CF₃SF₄) group: A comparison of the CF₃SF₄ group with the pentafluorosulfanyl(SF₅) group. **J.T. Welch**, A. Ikeda, M. Wilde, A. Capellan

2:10 82. (IL) Synthesis of novel pentafluorosulfanyl heterocycles of potential agrochemical and pharmaceutical significance. **W.R. Dolbier**, O.S. Kanishchev

2:30 83. (CL) Phosphorus and boron centered fluorinated safety components for lithium-ion batteries. N. von Aspern, M. Shevchuk, I. Cekic-Laskovic, M. Winter, **G. Roesenthaler**

2:50 84. (IL) Fluorine in functional materials: From crystal engineering to energy storage. **H. Sun**

3:10 85. (CL) Fluorinated and chlorinated bicyclo[1.1.1]pentanes. J. Kaleta, I. Roncević, **J. Michl**

3:30 Intermission. Co-sponsored by Oakwood Chemicals

Hilton Clearwater
Salon E,F

Fluorine Chemistry

Fluorine Chemistry XII

Co-sponsored by Shamrock Technologies
D. R. Hodgson, *Presiding*

3:50 86. (PL) Prediction of the properties of fluorinated compounds across the Periodic Table. **D.A. Dixon**

4:30 87. (CL) Comparative reactivity study of trifluoromethylfullerenes. L. San, Q. Deng, S.H. Strauss, A.A. Popov, **O.V. Boltalina**

4:50 88. (CL) New developments and opportunities in the field of polycarbon monofluoride (CF_x) chemistry. **D.T. Meshri**, N.C. Mathur, S.D. Meshri, R. Adams, H. Binhari, D. Pinnareddy, S. Bhagat, E. Shembel

5:10 89. (CL) Fluorine-containing self-assembled monolayers for molecule-based electronics. **A. Terfort**, P. Werner, M. Zharnikov

THURSDAY EVENING

Hilton Clearwater
Foyer D,E,F,G and Salons E,F

Banquet Reception

7:00 – 7:30

Banquet Dinner

7:30 – 9:30

Fluorine Chemistry

Fluorine Chemistry XIII

M. J. Bulinski, M. Etzkorn, *Organizers*

7:30 90. Award Address (ACS Award for Creative Work in Fluorine Chemistry sponsored by the ACS Division of Fluorine Chemistry.). My recollections of fluorine chemistry with friends. **N. Shibata**

FRIDAY MORNING

Hilton Clearwater
Salon E,F

Fluorine Chemistry

Fluorine Chemistry XIV

H. Sun, *Presiding*

8:00 91. (IL) Quantitative reactivity scale for electrophilic fluorinating reagents. N. Rozatian, I.W. Ashworth, G. Sandford, **D.R. Hodgson**

8:20 92. (IL) Variable-temperature/variable-humidity FTIR, solid-state NMR, and computational study of weak O–H---F hydrogen bonding in $M(H_2O)_6(B_{12}F_{12})$ hydrates. M.R. Lacroix, Y. Liu, Y. Yang, J. Hetmanczyk, **S.H. Strauss**

8:40 93. (CL) Carbon-fluorine bond cleavage: Experimental and computational investigation into the mechanism and reactivity of reductive cleavage of carbon-fluorine bonds via a hydrated electron probe in aqueous environments. **M.J. Bentel**, Y. Yu, L. Xu, B.M. Wong, Y. Men, J. Liu

9:00 94. (CL) New PPT sampling method and lignin adsorbent for PFAOA, PFAOS and Gen-X. **H. Nowicki**

9:20 95. (CL) Autocatalytic synthesis of bifluoride ionic liquids via SuFEx reaction. T. Hmissa, X. Zhang, N. Dhumal, G.J. McManus, **A. Mirjafari**

9:40 Intermission.

Hilton Clearwater
Salon E,F

Fluorine Chemistry

Fluorine Chemistry XV

M. J. Bulinski, *Presiding*

10:00 96. (CL) Copper hydride complex-catalyzed hydrodefluorination of fluoroalkenes: Tale of two mechanisms. N.O. Andrella, N. Xu, C. Ehm, **R. Baker**

10:20 97. (IL) Synthesis of epoxides of partially fluorinated olefins. **V. Petrov**, D.R. Brandt

10:40 98. (CL) Synthesis and transformations of gem-(trifluoromethyl) butenes. **A. Jackson**

11:00 Closing Remarks.