

Curriculum Vitae

Dmitrii F. Perepichka

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Positions

06/2018 – 05/2023 **Chair**, Department of Chemistry, McGill University, Canada
04/2014 – **Professor**, McGill University, Canada
06/2010 – 03/2014 **Associate Professor**, McGill University, Canada
10/2005 – 05/2010 **Assistant Professor**, McGill University, Canada
01/2003 – 09/2005 **Assistant Professor**, Institut National de la Recherche Scientifique, Canada
09/2001 – 12/2002 **Postdoctoral Researcher**, UCLA, U.S.A (with Prof. F. Wudl)
07/1999 – 07/2001 **Postdoctoral Researcher**, University of Durham, U.K. (with Prof. M.R. Bryce)

Education

06/1999 **PhD** in Organic Chemistry, Institute of Physical Organic Chemistry, Nat. Acad. Sci. Ukraine (with Prof. A.F. Popov)
07/1994 **Diploma** in Chemistry, Donetsk State University, Ukraine

Honors/Awards (selected)

2018 Peng Chen Scholar Award (Peking University – Shenzhen)
2017 Premio Venezia for Scientific Collaboration (Italian Chamber of Commerce)
2017-2024 Sir William C. MacDonald Chair in Chemistry (McGill)
2015-2016 Fulbright Visiting Research Chair (Fulbright/California Nanosystems Institute)
2015 Award for Research Excellence in Materials Chemistry (Canadian Soc. of Chemistry)
2012 Tomlinson Science Award (McGill University)
2009 Feinberg Foundation Visiting Faculty Fellow (Weizmann Inst. Science, Israel)
2008 CNC-IUPAC Travel Award
2006 DuPont Young Professor (DuPont USA)

Citation impact: >10,000 citations, *h*-index = 53 (Google Scholar 3/2020)

Current Funding (the lead applicant for collaborative grants; % the funding to Perepichka group)

2020 NSERC RTI-1: *Repair and upgrade of the UV-Vis-NIR fluorometer with intergrating sphere and time-resolved capability* (Perepichka, Barrett) **\$105,270**
2019-2021 CQMF Inter-institutional Collaboration Research Project: *Drawing Molecular Patterns to Induce Superconductivity into Graphene* (Orgiu, Perepichka): **\$20,000** (50%)
2018-2020 CQMF Inter-institutional Collaboration Research Project: *Understanding the design rules for small molecule based organic solar cells* (Perepichka, Izquierdo): **\$20,000** (50%)
2018-2021 NSERC Strategic: *Development of 3D hybrid electrolytes and nanostructured electrodes for high-energy density solid-state lithium batteries* (Demopoulos, Gauvin, Perepichka), **\$580,500** (16%)
2018-2023 NSERC Discovery: *Supramolecular design of pi-electron functional materials*, **\$470,000** (100%)
2017-2020 NSERC Strategic: *Direct Conversion of Lignin Phenols into High-Value Polyaniline and Related Electronic Materials* (Li, Perepichka) **\$489,000** (50%)
2017-2022 CFI Infrastructure: SNAP – Sustainable Nanomaterials Acceleration Project (Ghoshal, Perepichka and 8 others) **\$12,000,000**
2017–2020 US Army single investigator: *2D Conjugated Polymers from Stable Free Radical Building Blocks*, **US\$400,000** (100%)
2017-2020 FQRNT-Team, *New Surface Reactions for the Synthesis of Carbon-Based Semiconducting Nanomaterials* (Rosei, Perepichka) **\$162,000** (50%)
2017-2020 FQRNT-Team, *Interfacing With Cells Using Transmembrane Block Copolymers Bearing Conjugated Oligomer Units* (Cosa, Perepichka, Sleiman) **\$212,000** (33%)

A. Peer-Reviewed Articles in Journals (since 2003; supervised students/PDFs; corresponding authors*)

- 150) M. P. Rasool, H.-C. Chiu, B. Zank, Y. Zeng, J. Zhou, K. Zaghbi, D. F. Perepichka, G. P. Demopoulos*, PEDOT encapsulated and mechanochemically engineered silicate nanocrystals for high energy density cathodes, *Adv. Mater. Interf.* **2020**, 2000226.
- 149) M. R. Niazi, E. Hamzehpoor, P. Ghamari, I. F. Perepichka,* D. F. Perepichka,* Nitroaromatics as n-type organic semiconductors for field effect transistors, *Chem. Commun.* **2020**, 10.1039/D0CC01236J.
- 148) T. Jadhav, Y. Fang, C.-H. Liu, A. Dadvand, E. Hamzehpoor, W. Patterson, A. Jonderian, R. Stein, D. F. Perepichka,* Transformation between 2D and 3D Covalent Organic Frameworks via Reversible [2+2] Cycloaddition, *J. Am. Chem. Soc.* **2020**, 10.1021/jacs.0c01990.
- 147) M. U. Ali, J. Miao, J. Cai, D. F. Perepichka, H. Yang,* H. Meng,* Boosting the Efficiency and Curtailing the Efficiency Roll-off in Green Perovskite Light-Emitting Diodes via Incorporating Ytterbium as Cathode Interface Layer, *ACS Appl. Mater. Int.* **2020**, 10.1021/acsami.0c00950
- 146) G. Galeotti, F. De Marchi, E. Hamzehpoor, O. MacLean, M. R. Rao, Y. Chen, L. V. Besteiro, D. Dettmann, L. Ferrari, F. Frezza, P. M. Sheverdyaeva, R. Liu, A. K. Kundu, P. Moras, M. Ebrahimi, M. C. Gallagher,* F. Rosei,* D. F. Perepichka,* G. Contini*, Synthesis of a mesoscale ordered 2D π -conjugated polymer with semiconducting properties, *Nat. Mater.* **2020**, 10.1038/s41563-020-0682-z.
- 145) Y. Fang, B. Lindner, I. Destoop, T. Tsuji, Z. Zhang, R. Khaliullin, D. F. Perepichka, K. Tahara, S. De Feyter,* Y. Tobe,* Stereoselective Epitaxial Growth of Multilayer Porous Molecular Networks, *J. Am. Chem. Soc.* **2020**, 10.1021/jacs.0c00108.
- 144) N. Yee, A. Dadvand, D. F. Perepichka*, Serendipitous Formation of Semiconducting Semi-Indigo Indigoid by the Degradation of Diindolopyrrole, *J. Org. Chem.* **2020**, 10.1021/acs.joc.0c00054.
- 143) C. Yao, J. Zhao, Y. Zhu, B. Liu, C. Yan, D. F. Perepichka, H. Meng,* A Trifluoromethyl Group Modified Non-fullerene Acceptor Towards Improved Power Conversion Efficiency Over 13% in Polymer Solar Cells, *ACS Appl. Mater. Inter.* **2020**, 12, 11543.
- 142) D. Cui, J. L. MacLeod, D. F. Perepichka, F. Rosei, Surface-confined single-layer covalent organic frameworks: design, synthesis and application, *Chem. Soc. Rev.* **2020**, 49, 2020.
- 141) C. Fu, J. Mikšátko, L. Assies, C. Vrkošlav, S. Orlandi, M. Kalbac, P. Kovaříček, X. Zeng, B. Zhou, L. Muccioli,* D. F. Perepichka,* E. Orgiu,* Surface-confined macrocyclization via dynamic covalent chemistry, *ACS Nano* **2020**, 14, 2956.
- 140) V. Lakshmi, C.-H. Liu, M. R. Rao, Y. Chen, Y. Fang, A. Dadvand, E. Hamzehpoor, Y. Sakai-Otsuka, R. S. Stein, D. F. Perepichka*, A Two-Dimensional Poly(azatriangulene) Covalent Organic Framework with Semiconducting and Paramagnetic States, *J. Am. Chem. Soc.* **2020**, 142, 2155.
- 139) E. Hamzehpoor, D. F. Perepichka,* Crystal Engineering of Room Temperature Phosphorescence in Organic Solids, *Angew. Chem. Int. Ed.* **2020**, DOI: 10.1002/anie.201913393 (“Hot Paper”, cover page)
- 138) R.F. Pineda, Y. Zems, J. Troughton, M.R. Niazi, D.F. Perepichka*, T. Watson,* N. Robertson,* Star-shaped Triarylamine-based Hole-transport Materials in Perovskite Solar Cells, *Sust. Energy & Fuels* **2020**, 4, 779.
- 137) D.Cui,† Y. Fang,† O. MacLean, D.F. Perepichka*, F.Rosei*, S.Claire*, Covalent organic frameworks from a monomer with reduced symmetry: polymorphism and Sierpiński triangles, *Chem. Commun.* **2019**, 55, 13586.
- 136) C.-H. Liu, M.R. Niazi, D.F. Perepichka,* Strong Enhancement of π -Electron Donor/Acceptor Ability by DD/AA Complementary Hydrogen Bonding, *Angew. Chem. Int. Ed.* **2019**, 58, 17312 (frontpiece).
- 135) L. Assies, C. Fu, P. Kovaříček, Z. Bastl, K. A. Drogowska, J. Lang, P. Samori, E. Orgiu,* D. F. Perepichka,* M. Kalbáč,* Dynamic covalent conjugated polymer epitaxy on graphene, *J. Mater. Chem. C* **2019**, 7, 12240.
- 134) F. De Marchi, G. Galeotti, M. Simenas, M. C. Gallagher, E. Hamzehpoor, O. MacLean, R. M. Rao, Y. Chen, D. Dettmann, G. Contini, E. E. Tornau, M. Ebrahimi, D. F. Perepichka,* F. Rosei*, Temperature-induced molecular reorganization on Au(111) driven by oligomeric defects, *Nanoscale* **2019**, 11, 19468.
- 133) S. Mulay, O. Dishy, Y. Fang, M. R. Niazi, L. Shimon, D. F. Perepichka,* O. Gidron,* A Macrocyclic Oligofuran: Synthesis, Solid State Structure and Electronic Properties, *Chem. Sci.* **2019**, 10, 8527.
- 132) T. Jadhav, Y. Fang; W. Patterson; C.-H. Liu, E. Hamzehpoor, D. F. Perepichka*, 2D Poly(arylene vinylene) Covalent Organic Frameworks via Aldol Condensation of Trimethyltriazine, *Angew. Chem. Int. Ed.* **2019**, 58, 13753.
- 131) Y. Che, Y. Zhang, Y. Yang, C.-H. Liu, R. Izquierdo, S. Xiao*, D.F. Perepichka*, Understanding photovoltaic behavior of A-D-A molecular semiconductors through a permutation of end groups, *J. Org. Chem.* **2020**, 85, 52.

- 130) J. Cao, X. Wei, Y. Che, A. Li, Y. He, C. He, Y. Zhu, X. Chen, T. Li, I. Murtaza, L. Yan, D. F. Perepichka,* H. Meng,* Polysiloxane–poly(vinyl alcohol) composite dielectrics for high-efficiency low voltage organic thin film transistors, *J. Mater. Chem. C* **2019**, *7*, 4879.
- 129) R Harbers, T. Heepenstrick, D. F. Perepichka, M. Sokolowski*. Pure and mixed ordered monolayers of tetracyano-2,6-naphthoquinodimethane and hexathiapentacene on the Ag(100) surface, *Beilst. J. Nanotechn.* **2019**, *10*, 1188.
- 128) G. Galeotti, F. De Marchi, T. Taerum, L. V. Besteiro, M. El Garah, J. Lipton-Duffin, M. Ebrahimi,* D. F. Perepichka,* F. Rosei,* Surface-mediated assembly, polymerization and degradation of thiophene-based monomers, *Chem. Sci.* **2019**, *10*, 5167.
- 127) G. Galeotti, M. Di Giovannantonio, A. Cupo, S. Xing, J. Lipton-Duffin, M. Ebrahimi, G. Vasseur, B. Kierren, Y. Fagot-Revurat, D. Tristant, V. Meunier, D. F. Perepichka, F. Rosei*, G. Contini*, Unexpected Organometallic Intermediate in Surface-confined Ullmann Coupling, *Nanoscale* **2019**, *11*, 7682.
- 126) Y. Fang, M. Cibian, G. S. Hanan, D. F. Perepichka, S. De Feyter, L. A. Cuccia*, O. Ivasenko*, Alkyl chain length effects on double-deck assembly at a liquid/solid interface, *Nanoscale* **2018**, *10*, 14993.
- 125) D. P. Goronzy, E. Ebrahimi, F. Rosei, Arramel, Y. Fang, A. T. Wee, S. De Feyter, S. Tait, C. Wang, P. Beton, P. S. Weiss,* D. F. Perepichka*, Supramolecular Assemblies on Surfaces: Nanopatterning, Functionality, and Reactivity, *ACS Nano* **2018**, *12*, 7445.
- 124) C. Fu, E. Orgiu,* D. F. Perepichka,* Face-on vs. edge-on: tuning the structure of tetrathiafulvalene monolayers with solvent, *J. Mater. Chem. C* **2018**, *6*, 3787.
- 123) J. L. Macleod*, J. Lipton-Duffin*, C. Fu, T. Taerum, D. F. Perepichka*, F. Rosei*, A 2D Substitutional Solid Solution Through Hydrogen-Bonding of Molecular Building Blocks, *ACS Nano* **2017**, *11*, 8901.
- 122) G. Galeotti, M. Di Giovannantonio, J. Lipton-Duffin, M. Ebrahimi, S. Tebi, A. Verdini, L. Floreano, Y. Fagot-Revurat, D. F. Perepichka, F. Rosei*, G. Contini*, The role of halogens in on-surface Ullmann polymerization, *Faraday Disc.* **2017**, *204*, 453.
- 121) L. Yan, F. Popescu, M. R. Rao, H. Meng*, D. F. Perepichka,* A Wide Bandgap Naphthalene Semiconductor for Thin-Film Transistors, *Adv. Electron. Mater.* **2017**, *3*, 1600556.
- 120) C. Fu, P. J. Beldon, D. F. Perepichka*, H-bonding Control of Supramolecular Ordering of Diketopyrrolopyrroles, *Chem. Mater.* **2017**, *29*, 2979.
- 119) E. Kynaston, Y. Fang, J. G. Manion, N. K. Obhi, J. Y. Howe, D. F. Perepichka,* D. S. Seferos,* Patchy Nanofibers from the Thin Film Self-Assembly of a Conjugated Diblock Copolymer, *Angew. Chem. Int. Ed.* **2017**, *56*, 6152.
- 118) M. R. Rao, Y. Fang, S. De Feyter, D. F. Perepichka,* Conjugated Covalent Organic Frameworks via Michael Addition–Elimination, *J. Am. Chem. Soc.* **2017**, *139*, 2421.
- 117) M. Di Giovannantonio, M. Tomellini, J. Lipton-Duffin, G. Galeotti, M. Ebrahimi, A. Cossaro, A. Verdini, N. Khariche, V. Meunier, G. Vasseur, Y. Fagot-Revurat, D. F. Perepichka,* F. Rosei,* G. Contini,* Mechanistic Picture and Kinetic Analysis of Surface-Confined Ullmann Polymerization, *J. Am. Chem. Soc.* **2016**, *138*, 16696.
- 116) H. Yu, Y. Guo, C. Yao, D. F. Perepichka, H. Meng,* A Smart Polymer with a High Sensitivity to Temperature and Humidity Based on Polyacrylamide Hydrogel Doped with Polyiodide, *J. Mater. Chem. C* **2016**, *4*, 11055.
- 115) M. A. Mezour, O. Voznyy, E. Sargent, R. B. Lennox,* D. F. Perepichka*, Controlling C60 growth through dipole-induced band alignment at self-assembled monolayer interface, *Chem. Mater.* **2016**, *28*, 8322.
- 114) G. R. McKeown, Y. Fang, N. K. Obhi, J. G. Manion, D. F. Perepichka*, D. S. Seferos*, Synthesis of Macrocyclic Poly(3-hexylthiophene) and Poly(3-heptylselenophene) by Alkyne Homocoupling, *ACS Macro Lett.* **2016**, *5*, 1075 (editor's choice and cover page)
- 113) Y. Guo, W. Li, H. Yu, D. F. Perepichka, H. Meng*, Flexible Asymmetric Supercapacitors via Spray-Coating of a New Electrochromic Donor-Acceptor Polymer, *Adv. Ener. Mater.* **2017**, *7*, 1601623.
- 112) M.A. Mezour, R.M. Choueiri, O. Lukoyanova, R.B. Lennox*, D.F. Perepichka*, H-Bonding vs Molecule-Surface Interactions in 2D Self-Assembly of [C60]fullerenecarboxylic acids, *Nanoscale* **2016**, *8*, 16955.
- 111) H.T. Black, N. Yee, Y. Zems, D.F. Perepichka*, Complementary Hydrogen Bonding Modulates Electronic Properties and Controls Self-Assembly of Donor/Acceptor Semiconductors, *Chem. Eur. J.* **2016**, *22*, 17251.
- 110) Y.-G. Jia, C. Malveau, M. A. Mezour, D. F. Perepichka, J. X. X. Zhu*, A Molecular Necklace: Threading β -Cyclodextrins onto Polymers Derived from Bile Acids, *Angew. Chem. Int. Ed.* **2016**, *55*, 11979.

- 109) M. R. Rao, S. Johnson, D. F. Perepichka*, Aromatization of Benzannulated Perylene-3,9-diones: Unexpected Photophysical Properties and Reactivity, *Org. Lett.* **2016**, *18*, 3574.
- 108) J. A. Schneider, D. F. Perepichka*, A new approach to polycyclic azaarenes: visible-light photolysis of vinyl azides in the synthesis of diazabenzopyrene and diazaperylene, *J. Mater. Chem. C* **2016**, *4*, 7269 (highlighted in *Synfacts* 2016, *12*, 1029 by T. M. Swager, C. Dengiz).
- 107) C. Yan*, H. Zhao, D. F. Perepichka*, F. Rosei*, Lanthanide Ion Doped Upconverting Nanoparticles: Synthesis, Structure and Properties, *Small* **2016**, *12*, 3888.
- 106) L. Yan, Y. Zhao, H. Yu, Z. Hu, Y. He, O. Goto, C. Yan, T. Chen, R. Chen, Y.-L. Loo, D. F. Perepichka, H. Meng*, W. Huang*, Effects of Heteroatoms on the Charge Mobility of Anthracene Derivatives, *J. Mater. Chem. C* **2016**, *4*, 3517.
- 105) C. Fu, F. Belanger-Gariépy, D. F. Perepichka*, Supramolecular ordering of difuryldiketopyrrolopyrrole: the effect of alkyl chains and inter-ring twisting, *Cryst. Eng. Comm.* **2016**, *18*, 4285.
- 104) C. Fu, H.-P. Lin, J. L. Macleod, A. Krayev, F. Rosei, D. F. Perepichka*, Unravelling the self-assembly of hydrogen bonded semiconductors in 2D and 3D, *Chem. Mater.* **2016**, *28*, 951.
- 103) R. Liu, C. Fu, D. F. Perepichka, M. C. Gallagher*, Supramolecular structures of halogenated oligothiophenes on Si(111)- $\sqrt{3}\times\sqrt{3}$ -Ag surface, *Surf. Science* **2016**, *647*, 51.
- 102) G. Vasseur, Y. Fagot-Revurat*, M. Sicot, B. Kierren, D. Malterre, L. Cardenas, G. Galeotti, J. Lipton-Duffin, F. Rosei, M. Di Giovannantonio, G. Contini, P. Lefevre, F. Bertran, V. Meunier, L. Liang, D.F. Perepichka, Quasi one-Dimensional Band Dispersion and Surface Metallization in Long Range Ordered Polymeric Wires, *Nat. Comm.* **2016**, *7*, 10235.
- 101) D. Cui, J. L. Macleod*, M. Ebrahimi, D. F. Perepichka, F. Rosei*, Solution and air stable host/guest architectures from a single layer covalent organic framework, *Chem. Commun.* **2015**, *51*, 16510.
- 100) L. E. Dinca, J. L. Macleod, J. Lipton-Duffin, C. Fu, D. Ma, D. F. Perepichka, F. Rosei*, Tailoring the Reaction Path in the On-Surface Chemistry in Thienoacenes, *J. Phys. Chem. C* **2015**, *119*, 22432.
- 99) M. R. Rao, H. T. Black, D. F. Perepichka*, Synthesis and Divergent Electronic Properties of Two Ring-Fused Derivatives of 9,10-Diphenylanthracene, *Org. Lett.* **2015**, *17*, 4224.
- 98) J. A. Schneider, H. T. Black, H. Lin, D. F. Perepichka*, Polymorphism in New Thienothiophene-Thiazolothiazole Organic Semiconductors, *ChemPhysChem* **2015**, *6*, 1173 (*Invited paper; cover page*).
- 97) M. R. Rao, A. Desmecht, D. F. Perepichka*, π -Extended Indenofluorenes, *Chem. Eur. J.* **2015**, *21*, 6193-6201.
- 96) M. A. Mezour, I. I. Perepichka, O. Ivasenko, R. B. Lennox*, D. F. Perepichka*, Tridentate Benzylthiols on Gold(111): Control of Self-Assembly Geometry, *Nanoscale* **2015**, *7*, 5014.
- 95) L. E. Dinca, F. De Marchi, J. M. MacLeod, J. Lipton-Duffin, R. Gatti, D. Ma, D. F. Perepichka, F. Rosei*, Pentacene on Ni(111): room-temperature molecular packing and temperature-activated conversion to graphene, *Nanoscale* **2015**, *7*, 3263.
- 94) R. Gatti, J. M. Macleod, J. A. Lipton-Duffin, A. Moiseev, D. F. Perepichka*, F. Rosei*, Substrate, molecular structure and solvent effects in 2D self-assembly via hydrogen and halogen bonding, *J. Phys. Chem. C* **2014**, *118*, 25505.
- 93) I. I. Perepichka, M. A. Mezour, D. F. Perepichka*, R. B. Lennox*, High thermal stability of block-copolymer capped Au and Cu nanoparticles, *Chem. Commun.* **2014**, *50*, 11919.
- 92) H.T. Black, H. Lin, F. Bélanger-Gariépy, D.F. Perepichka*, Supramolecular control of organic p/n-heterojunctions by complementary hydrogen bonding, *Faraday Discuss.* **2014**, *174*, 297.
- 91) L. E. Dinca, J. M. MacLeod, J. Lipton-Duffin, C. Fu, D. Ma, D. F. Perepichka, F. Rosei*, Tip-induced C-H activation and oligomerization of thienoanthracenes, *Chem. Commun.* **2014**, *50*, 8791.
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- 89) Z. Shi, H.T. Black, A. Dadvand, D.F. Perepichka*, Pentacenodithiadiazole, an n-type semiconductors for field effect transistors, *J. Org. Chem.* **2014**, *79*, 5858.
- 88) Q. Shuai, H. T. Black, A. Dadvand, D.F. Perepichka*, Dithienonaphthothiadiazole Semiconductors: Synthesis, Properties, and Application to Ambipolar Field Effect Transistors, *J. Mater. Chem. C* **2014**, *2*, 3972.
- 87) M. A. Mezour, I. I. Perepichka, J. Zhu, R. B. Lennox*, D. F. Perepichka*, “Directing the Assembly of Gold Nanoparticles with Two-Dimensional Molecular Networks”, *ACS Nano* **2014**, *8*, 2214.
- 86) M. Di Giovannantonio, M. El-Garah, J. Lipton-Duffin, V. Meunier, L. Cardenas, Y. Fagot-Revurat, A. Cossaro, A. Verdini, D. F. Perepichka*, F. Rosei*, G. Contini*, “Reply to the comment by Fei Song to our

- paper “Insight into organometallic intermediate and its evolution to covalent bonding in surface-confined Ullmann polymerization,” *ACS Nano* **2014**, *8*, 1969.
- 85) H. T. Black, D. F. Perepichka,* Crystal Engineering of Dual Channel p/n Organic Semiconductors by Complementary Hydrogen Bonding, *Angew. Chem. Int. Ed.* **2014**, *53*, 2138.
- 84) R. Gutzler,* L. Cardenas,* J. Lipton-Duffin, M. El Garah, L. E. Dinca, C. E. Szakacs, C. Fu, M. Gallagher, M. Vondracek, M. Rybachuk, D. F. Perepichka,* F. Rosei*, Ullmann-Type Coupling of Brominated Tetrathienoanthracene on Crystalline Copper and Silver, *Nanoscale* **2014**, *6*, 2660.
- 83) A. G. Moiseev, E. A. Margulies, J. A. Schneider, F. Belanger-Gariepy, D. F. Perepichka,* Protecting the triplet state in sterically congested platinum porphyrin, *Dalton Trans.* **2014**, 43, 2676.
- 82) J.A. Schneider, A. Dadvand, W. Wen, D.F. Perepichka*, Tuning the Electronic Properties of Poly(thienothiophene vinylene)s via Alkylsulfanyl and Alkylsulfonyl Substituents, *Macromolecules* **2013**, *46*, 9231.
- 81) Y. Zems, A. Moiseev, D. F. Perepichka,* Convenient Synthesis of a Highly Soluble and Stable Phosphorescent Platinum Porphyrin Dye, *Org. Lett.* **2013**, *15*, 5330.
- 80) R. Gutzler,* D.F. Perepichka,* π -Electron conjugation in two dimensions, *J.Am.Chem.Soc.* **2013**, *135*, 16585.
- 79) M. Di Giovannantonio, M. El-Garah, J. Lipton-Duffin, V. Meunier, L. Cardenas, Y. Fagot-Revurat, A. Cossaro, A. Verdini, D.F. Perepichka,* F. Rosei,* G. Contini,* Insight into Organometallic Intermediate and its Evolution to Covalent Bonding in Surface-Confined Ullmann Polymerization, *ACS Nano* **2013**, *7*, 8190.
- 78) L. Cardenas,* R. Gutzler,* J. Lipton-Duffin, C. Fu, J.L. Brusso, L.E. Dinca, M. Vondráček, Y. Fagot-Revurat, D. Malterre, F. Rosei*, D.F. Perepichka*, Synthesis and electronic structure of a 2D π -Conjugated Polythiophene, *Chem. Sci.* **2013**, *4*, 3263.
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- 75) J. M. MacLeod, Z. B. Chaouch, D. F. Perepichka, F. Rosei,* Two-dimensional self-assembly of a symmetry-reduced tricarboxylic acid, *Langmuir* **2013**, *29*, 7318.
- 74) L. E. Dinca, C. Fu, J. M. MacLeod, J. Lipton-Duffin, J. L. Brusso, C. E. Szakacs, D. Ma, D. F. Perepichka*, F. Rosei,* Unprecedented transformation of anthratetrathiophene into pentacene on Ni(111), *ACS Nano* **2013**, *7*, 1652.
- 73) H. T. Black, A. Dadvand, S. Liu, V. S. Ashby,* D. F. Perepichka,* Perfluoroalkyl-substitution versus electron-deficient building blocks in design of oligothiophene semiconductors, *J. Mater. Chem. C* **2013**, *1*, 260.
- 72) C. Fu, F. Rosei, D. F. Perepichka*, 2D self-assembly of fused oligothiophenes: molecular control of morphology, *ACS Nano* **2012**, *6*, 7973.
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- 29) G.Ho, J.R.Heath*, M.Kondratenko, D.F.Perepichka*, K.Arseneault, M.Pezolet, M.R.Bryce, The first studies of a tetrathiafulvalene- σ -acceptor molecular rectifier, *Chem. Eur. J.* **2005**, *11*, 2914. (cover page)
- 28) M.Bendikov*, F.Wudl*, D.F.Perepichka*, Molecular materials across fields: TTFs, fullerenes and acenes, *Chem. Rev.* **2004**, *104*, 4891.
- 27) D.F.Perepichka*, F.Wudl*, S.R.Wilson*, Y.Sun, D.I.Schuster*, The dissolution of carbon nanotubes in Aniline, Revisited, *J. Mater. Chem.* **2004**, *14*, 2479.
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- 23) D.F. Perepichka, M. Bendikov, H. Meng, F. Wudl*, A one-step synthesis of a poly(iptycene) through an unusual Diels-Alder cyclization/dechlorination of tetrachloropentacene, *J. Am. Chem. Soc.* **2003**, *125*, 10190.
- 22) M.R. Bryce, G. Cooke*, F.M.A. Duclairoir, P. John, D.F. Perepichka, N. Polwart, V.M. Rotello, J.F. Stoddart, H.-R. Tseng, Electrochemically controllable surfaces with three-pole binding properties, *J. Mater. Chem.* **2003**, *13*, 2111.
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- 20) H. Meng, D. F. Perepichka, F.Wudl*, Facile solid state synthesis of a highly conducting poly(ethylenedioxythiophene), *Angew. Chem. Int. Ed.* **2003**, *42*, 658. (VIP and cover page)

B. Book chapters (selected)

- 15) J. Schneider, D. F. Perepichka, Design Principles for Organic Semiconductors, in *Advanced Materials*, (Eds. T. van de Ven, A. Soldera), DeGruyter **2019**.
- 14) O. K. Abdi, D. F. Perepichka, π -Electron Conjugation in Two-Dimensional Polymers, in *Encyclopedia of Interfacial Chemistry* **2018**, 509-522.
- 12) X. Han, D.F. Perepichka, H. Meng, M. Ling “Phosphorescent Polymer Light Emitting Diodes” in *Organic Light-emitting Materials and Devices*, 2nd Edition (Ed.: Z. R. Li) CRC Press, **2015**.

- 11) S. Xun, D.F. Perepichka, I.F. Perepichka, H. Meng, F. Wudl, "Light-emitting polymers" in *Organic Light-emitting Materials and Devices*, 2nd Edition (Ed.: Z.R.Li) CRC Press, **2015**
- 6) I.F. Perepichka, D.F. Perepichka, H. Meng, "Light-emitting polythiophenes" in "*Handbook of Thiophene-based materials*", Wiley VCH **2009**.

C. Non-peer-reviewed Articles in Journals

- 6) Q.Zhang, D.F. Perepichka, Z.Bao, Fred Wudl's 50-year Contribution to Organic Semiconductors, *J. Mater. Chem. C* **2018**, 6, 3483-3484.
- 5) D.F. Perepichka, I.F. Perepichka, F. Wudl, Special Issue on Organic Electronics: in Memory of Prof. Michael Bendikov (1971-2013), *Isr. J. Chem.* **2014**, 54, 426-428.
- 4) M.Bendikov, N.Martin, D.F. Perepichka, M.Prato, Fred Wudl. Discovering New Science Through Making New Molecules, *J. Mater. Chem.* **2011**, 21, 1275
- 3) D. F. Perepichka, Molecular Networks, *J. Am. Chem. Soc.* **2010**, 132, 4030.
- 2) D.F.Perepichka, S.Jeeva, Chemical safety: trimethylsilylacetylene explosion, *Chem.Eng.News***2010**, 88(3), 2-2.
- 1) D.F. Perepichka, An unpredictable future should not stop you from planning, *Science* **2006**, 314, 1245.

F. Invited Academic Seminars (>70, selected):

U Dresden (**2020**), U Warwick (UK **2019**), North-Western Polytech U (China **2019**), U Soochow (China, **2019**), East-China U Sci Tech (**2019**), U Alberta (**2019**), Peking U–Shenzhen (**2018**), Guandong U Tech (China, **2018**), NTU (Singapore, **2018**), U Ottawa (**2018**), McMaster U (**2018**), Hebrew U Jerusalem (**2017**), Weizmann Inst. (**2017**), U Pernambuco (Brasil, **2017**), Peking U-Shenzhen C(**2017**), UCSB (**2016**), KU Leuven (Belgium, **2015**), Memorial U Newfoundland (**2015**), NTU (Singapore **2015**), Peking U–Shenzhen (**2015**), U Toronto (**2015**), RIKEN-Tokyo (**2014**), Deutsches Museum Munich (**2014**), U Malaga (Spain **2014**), St-Andrews U (UK **2014**), U Edinburgh (**2014**), U Toronto (**2013**), U Indiana (**2013**), Brown U (**2012**), U Sherbrooke (**2011**), Washington State U (**2011**), Concordia U (**2011**), NUS (Singapore **2010**), NTU (Singapore **2010**), Bangor U (UK **2010**), U Alberta (**2010**), Nagoya U (Japan **2010**), Weizmann Inst (**2010**), Technion (Israel **2010**), U Windsor (**2009**), Queens U (**2009**), U Montreal (**2009**), U Ulm (Germany **2009**), KU Leuven (Belgium **2009**), Air Force Research Lab (USA **2009**), DuPont Experimental Station, (USA **2008**), Concordia U (**2008**), UCSB (**2008**), U Montreal (**2007**), Strathclyde U (UK **2007**), Durham U (**2007**), UC London (**2007**), Weizmann Inst. (**2006**), Hebrew U Jerusalem (**2006**), Ben-Gurion U (**2006**), Bar-Ilan U (**2006**), McGill U (**2006**), Air Force Research Lab (**2006**), NRC-Boucherville (**2005**), UQAM (**2005**), Laval U (**2003**), U Manchester (**2003**), Southampton U (UK, **2003**)

G. Invited, Keynote and Plenary Conference Presentations (>70, selected):

ICACC 2020, Daytona Beach (USA **2020**); NUS-MRS Workshop on Functional Materials (Singapore **2019**); 16th Pacific Polymer Conf. (Singapore **2019**); M.R.Bryce Symp. Functional Organic Materials, Durham (UK **2019**); Int. Conf. Mater. Adv. Tech. ICMAT (Singapore **2019**); ACS Spring, Orlando (USA **2019**); Singapore Int. Chem. Conf. SICC-10, (**2018**); ACS Fall, Boston (USA **2018**); POLYMAT Spotlight, San-Sebastian (Spain **2018**); e-MRS meeting, Strasbourg (France **2018**); China-Canada Symp Optoelectronic Mater., Wuhan (China **2018**); POLYMAT, Huatulco (Mexico **2017**); 18th Int. Conf. on Luminescence, Joao Pessoa (Brasil **2017**); 13th Int. Conf. Mater. Chem. MC13, Liverpool (UK **2017**); ICMAT (Singapore **2017**); Int. Symp. π -Electron Funct. Systems Fpi13 (Hong Kong **2017**); CSC, Toronto (Canada **2017**); ACS Spring, San Francisco (USA **2017**); Int. Symp. "Adv. Microscopy & Spectroscopy of Supramol. & Macromol. Systems on Surfaces" (Hong Kong **2016**); ICSM – Int. Conf. Sci. Tech. Synth. Metals, Guangzhou (China **2016**); Int. Workshop "On-surface Synthesis", San-Sebastian (Spain **2016**); MRS Spring, Phoenix (USA **2016**); POLYMAT, Huatulco (Mexico **2015**); ICMAT (Singapore **2015**); CSC, Ottawa (Canada **2015**); Core-to-Core Symp. Org. Electr., Otaru (Japan **2014**); IGER Molecul. Electron. Workshop, Nagoya (Japan **2014**); Faraday Disc. 174, Glasgow (UK **2014**); ACS Spring, Dallas (USA **2014**); Meitner-Minerva Symp. Comput. Chem., Rehovot (Israel **2013**); CSC, Quebec (Canada **2013**); Israeli Chem. Soc. Meeting, Tel-Aviv (Israel **2013**); Japan-Canada Nanotech. Workshop, Tokyo, (Japan **2013**); Int. Mater. Res. Congress IMRC, Cancun (Mexico **2012**); ICSM, Atlanta (USA **2012**); 9th Int NANOTECH2012 Conf., San-Luis Potosi (Mexico **2012**); Canada-Japan Symp. Supramol. Nanomater., Whistler (Canada **2012**); Gordon Res. Conf. "Electrochemistry" (USA **2012**); MNPC 2011, Obernai (France **2011**); CMOS Emerging Techn. Workshop, Whistler (Canada **2011**); CSC, Montreal (Canada **2011**); Adv. Org. Mater., Santa-Barbara (USA **2011**); Pacificchem 2010 (USA **2010**); 2nd Int. Symp. "Zero Carbon Energy", Kyoto (Japan **2010**); Canadian Assoc. Phys.,

Toronto (Canada **2010**); CSC, Toronto (Canada **2010**); *Int. Symp. π -Electron Funct. Systems Fpi9* (USA **2010**); *MC9 and IUPAC Congr.*, Glasgow (UK **2009**); *Surface Canada*, Hamilton (Canada **2009**); *Nanotechn. Insight*, Barcelona (Spain **2009**); *IMRC*, Cancun (Mexico **2008**); *ICSM*, Porto de Galinhas (Brazil **2008**); *CSC*, Edmonton (Canada **2008**); *IMRC*, Cancun (Mexico **2007**); *NSF Workshop "Well-Defined Nanoscale Building Blocks"*, (USA **2007**); *ICACC2007*, Cocoa Beach (USA **2007**); *Pacificchem 2005* (USA **2005**); *MRS Fall*, Boston (USA **2005**); *2nd McGill Nano Engineering Workshop* (Canada **2005**).

Research Mentoring

My current group consists of **1 RA** (Dadvand), **4 PDFs** (Fang, Niazi, Unikela, Cui), **9 PhDs** (Yee, Hamzehpoor, YH Liu, Zhao, Che, Ghamari, Rafique, Ruchlin, CH Liu) and **3 BSc** students (Wei, Mikulin, Cheung). **7 MSc** and **6 PhD** theses have been defended, **28 PDFs** and over **50** undergraduate researchers trained since 2003.

My former students continue their training, as post-doctoral and PhD students in some of top schools in North America (Harvard U, Northwestern U, MIT, U of Toronto, Princeton, Cornell, Cambridge, U Chicago, U Minnesota, etc). Many of them have received prestigious post-doctoral (3 NSERC, 10 FQRNT) and doctoral (NSERC, FQRNT, Vanier) fellowships and awards (MSED-Lanxess doctoral; RSC A. Wilson award; many best poster/oral presentation) in my group, and upon leaving for further training (NSERC, EU Marie-Curie, FWO, etc).

A number of my former trainees have since moved to independent academic research positions across the world: R. Wiley (McMaster U), Z. Wei (Inst. Chem., Chinese Acad. Sci.), J. Brusso (U Ottawa), M. Lepeltier (U Versailles, France), C. Santato and F. Cicaira (Ecole Polytech. Montreal), M. Rybachuk (Tech. U Queensland, Australia), B. Zaman (Laurentian U), C. Yan (group leader, Inst. Integrative Nanoscience, IFW-Dresden), R. Gutzler (group leader, MPI-Stuttgart), S. Clair and L. Cardenas (CNRS, France), Q. Shuai (Hanzhou U, China), R. Rao (IIT-Dharwan, India), J. Schneider (Fordham Univ., NY), V. Lakshmi (NIT-Surathkal, India). Others went to government labs (eg, H.Black at Sandia Labs; A. Dadvand at NRC) and various industrials research labs or formed their own companies, eg, P. Beldon (Cortirio Inc.), H.P. Lin (WoFei Photoelectric Science & Techn. Co), A. Karas (Materials Harvest Inc.)

Professional Service

Review Panels/ refereeing proposals: (~5-10/year): NSERC, NSF, ACS-PRF, US Air-Force, US Army, ERC, Austr. Sci. Found., ANR-France, Isr. Sci. Found, FWO-Belgium, FNP-Poland and others.

Reviewing papers (>50/year): *ACS Adv. Mater. Int.*, *ACS Nano*, *Adv. Mater.*, *Adv. Funct. Mater.*, *Angew. Chem.*, *Chem. Commun.*, *Chem. Eur. J.*, *Chem. Mater.*, *J.Amer.Chem. Soc.*, *J. Mater. Chem.*, *J. Org. Chem.*, *J. Phys. Chem.*, *Langmuir*, *Macromolecules*, *Nano Lett.*, *Org. Lett.*, *Science*, *Nat. Chem.*, *Nat. Comm. Nat. Mater.* etc.

Editorial work: I.F.Perepichka, D.F.Perepichka (Eds.) "Handbook of Thiophene Based Materials", 2-vol., Wiley VCH (August **2009**)

D.F.Perepichka, S. De Feyter, F.Rosei (Eds.) "Molecule-based surface chemistry", a Special Issue of *Chem, Commun.* (**2011**)

M.Bendikov, N.Martin, D.F.Perepichka, M.Prato, (Eds), Special Issue of *J. Mater. Chem.* (**2013**)

D.F.Perepichka, I.F.Perepichka, F.Wudl (Eds), Special Issue of *Isr. J. Chem.* (**2014**)

Q.Zhang, D.F.Perepichka, Z.Bao (Eds), Special Issue of *J. Mater. Chem. C* (**2018**)

Q.Zhang, D.F.Perepichka, H.Meng, Y.Cheng (Eds), Special Issue of *Front. Mater. Chem.* (**2020**)

Organizing *CSC meeting* (symposium organizer), Montreal, June **2011**

conferences: *CSC meeting* (symposium organizer), Calgary, May **2012**

Zing Conference "Supramolecular Chemistry at Surfaces" (**co-chair**), Lanzarote, Spain, February **2012** (this was the first international conference in the field, starting a series of symposia at ACS Meetings and Pacificchem; the 5th meeting is scheduled in Pacificchem2020).

XXI Int. Materials Research Congress (symp. organizer), Cancun, Mexico, August **2012**

XXII Int. Materials Research Congress (symposium organizer), Cancun, Mexico, August **2014**

Pacificchem 2015 (symposium organizer), Honolulu, USA, December **2015**.

Int. Workshop "Organic Electron. of Highly-Correlated Molec. Systems" Montreal, May **2017**

CSC meeting (symposium organizer), Quebec, May **2019**

ICMAT 2019 (symposium co-organizer), Singapore, June **2019**