

Alex VOZNYYY

Dept. of Electrical & Computer Eng.
University of Toronto
Toronto, Canada

(647) 470-0092
o.voznyy@utoronto.ca
Canadian citizen

PROFESSIONAL EXPERIENCE

- 2011 – present *Principal Scientist*
University of Toronto, Canada
Nanomaterials for Energy Group (Prof. Ted Sargent)
- 2008 – 2011 *Research Associate*
National Research Council of Canada, Ottawa
Quantum Theory Group (Prof. Pawel Hawrylak)
- 2005 – 2008 *Postdoctoral Fellow*
University of Sherbrooke, Canada
Quantum Semiconductors and Nanotechnology Group (Prof. Jan J. Dubowski)

RESEARCH SUMMARY

Experimental and computational physical chemistry of nanomaterials for energy (PV, catalysis).

- Over 110 publications in refereed journals, cited more than 6500 times with h-index 44.
 - 9 publications as a corresponding author
 - 27 first-authored publications
 - 20+ publications as a leading computational contributor
- 6 patents and filed patent applications, 5 invention disclosures
- 15 invited talks at international conferences, workshops and seminars (ACS National Meeting, Canadian Semiconductor Science and Technology, CECAM)

PUBLICATION HIGHLIGHTS

- F. Fan*, **O. Voznyy***, R. Sabatini*, K. Bicanic*, et.al., *Contributed equally
Continuous-wave lasing in colloidal quantum dot solids enabled by facet-selective epitaxy,
Nature, **2017**, 544, 75-79.
- B. Zhang*, X. Zheng*, **O. Voznyy***, et.al., *Contributed equally
Homogeneously dispersed, multimetal oxygen-evolving catalysts,
Science, **2016**, aaf1525.
- X. Li*, Y. Zhao*, F. Fan*, L. Levina, M. Liu, R. Quintero-Bermudez, X. Gong, L. Quan,
J. Fan, Z. Yang, S. Hoogland, **O. Voznyy**[#], Z.H. Lu[#], E. H. Sargent[#], [#] Corresponding authors
Bright colloidal quantum dot light-emitting diodes enabled by efficient chlorination,
Nat. Photon., **2018**, Accepted.
- **O. Voznyy**, E. H. Sargent,
Atomistic model of fluorescence intermittency of colloidal quantum dots,
Phys. Rev. Lett., **2014**, 112, 157401.
- **O. Voznyy**, J. J. Dubowski, J. T. Yates Jr., P. Maksymovych,
The role of gold adatoms and stereochemistry in self-assembly of methylthiolate on Au(111),
J. Am. Chem. Soc., **2009**, 131, 12989.

EDUCATION

- 2001 – 2004 **Ph. D.** in *Semiconductor physics* (Supervisor: Prof. V. Deibuk)
Department of Physics, Chernivtsi National University, Ukraine
Thesis: *Electronic structure, optical properties and chemical bonding in group-III nitride alloys.*
- 2000 – 2001 **M. Sc.** in *Semiconductor microelectronics* (GPA 5/5; with honors)
Department of Physics, Chernivtsi National University, Ukraine
- 1996 – 2000 **B. Sc.** in *Semiconductor microelectronics* (GPA 4.98/5; with honors)
Department of Physics, Chernivtsi National University, Ukraine

RESEARCH PROGRAM LEADERSHIP

Co-writing grant applications, interfacing with industry partners, project supervision to meet the goals and deadlines, coordination with collaborators, writing progress reports (under PI E.Sargent).

- Hybrid quantum dot perovskite solar cells,
Qatar National Research Fund.
- A monolithically integrated infrared quantum dot laser for silicon photonics,
NSERC Strategic Partnership (Huawei Canada).
- Computational high-throughput screening of catalyst materials for renewable fuels,
Southern Ontario Smart Computing Innovation Platform.
- Heavy-metal-free chalcogenide perovskite light emitting colloidal quantum dots,
Samsung Electronics Co.
- Ultrastable reduced-dimensionality lead perovskites,
US Office of Naval Research.

TEACHING EXPERIENCE

- 2017 Group seminar series “*Machine learning for materials discovery*”
- 2016 Group seminar series “*Optoelectronic device modeling*”, University of Toronto
- 2005-2007 Graduate course “*Laser-matter interactions*”
Department of Electrical and Computer Engineering, University of Sherbrooke
- 2003 Undergraduate course “*Quantum mechanics*”, Chernivtsi National University
- 2002 Undergraduate course “*Physical chemistry*”, Chernivtsi National University

SUPERVISED STUDENTS AND POSTDOCS

Supervising and directing the research of graduate students and postdocs:
Choosing the research topic and approach, setting goals, design of experiments and data analysis,
advising in case of problems, editing manuscripts.

- 2017 Program manager of *Perovskites for light emission and PV* (20 members).
- 2016 Sub-group leader of *Device architectures for QD photovoltaics* (6 students),
- 2015 Sub-group leader of *Surface chemistry of nanocrystals* (5 students).

Grad students: Andrew Proppe, Rafael Quintero-Bermudez, Olivier Oulette, Golam Bappi, Grant Walters, Mathieu Lempen, Jixian Xu, Mengxia Liu, Yongbiao Zhao, James Fan, Liang Gao, Petar Todorovic, Xiwen Gong, Graham Carey, David Zhitomirsky.

Postdocs: Randy Sabatini, Fengjia Fan, Ankit Jain, Xiyan Li, Zhenyu Yang, Jongmin Choi, Junghwan Kim, J.W.Jo, Chih-Shan Tan, Andrei Buin, Xinzheng Lan, Qiong Zhang, Li Na Quan.

SERVICE TO SCIENTIFIC COMMUNITY

- Conference organizing committees
 - SPIE Photonics West LASE (2015),
 - IEEE Photovoltaics Specialists Conference (2016),
 - Quantum Dots Conference (2018).
- Grant proposal review
 - Foundation for Fundamental Research on Matter
 - U.S. DOE
 - Netherlands Organization for Scientific Research
 - Independent Research Fund Denmark.
- External examiner
 - M.Sc. Thesis: Richard Edwards (Chemistry, Laureir University, Waterloo)
- Peer review
 - Nature Energy, Nature Mater., Joule, JACS, Nano Lett., Phys. Rev. Lett.
- Outreach activities
 - High-school lectures in *Science* (2012-2017)
 - Science Rendezvous at University of Toronto (2016, 2017)

PATENTS AND INVENTION DISCLOSURES

- Quantum-dot-in-perovskite solids (2016, *patent pending* WO2016109902A2)
- Homogeneously dispersed multimetal oxy-hydroxide catalysts (2016, *Int. patent pending* PCT/CA2017/050106)
- Solution-phase hybrid-ligand exchanged colloidal quantum dot inks (2016, *US provisional* 62367834)
- Compositionally tuned perovskites for optoelectronic applications (2016, *US provisional* 62288648)
- Facet-selective epitaxy tightens emission linewidth and lowers optical gain threshold in nanocrystals (2016, *US provisional* P5931US00)
- Layered-perovskite electroabsorption modulator (2017, *US provisional* 62478725)
- BaZrS₃ nanocrystal light emitting materials (2017, *invention disclosure*)
- Enhanced electrocatalytic CO₂ reduction via field-induced reagent concentration (2016, *invention disclosure*)
- Quantum dots in a two-dimensional perovskite matrix for efficient near-infrared light emission (2016, *invention disclosure*)
- Efficient and stable solution-processed planar perovskite solar cells via contact passivation (2017, *invention disclosure*)
- Cesium alloying suppresses defects and enhances phase stability in wide-bandgap lead halide perovskites (2017, *invention disclosure*)

INVITED TALKS

- **O. Voznyy**, Modulating excitonic interactions in 2D and quasi-2D lead halide perovskites, *DFT modeling of 2D materials, PSI-K workshop, Rome, December 2017.*
- **O. Voznyy**, Colloidal quantum dot LEDs and lasers, *Physics Colloquium, Department of Physics and Astronomy, Rochester IT, November 2017.*
- **O. Voznyy**, Improving quantum dot synthesis with machine learning, *Machine Learning for Materials Science Seminar, Department of Chemistry, Harvard University, September 2017.*
- **O. Voznyy**, Towards high-performing and stable perovskites and their analogues for solar cells and light emission, *Canadian Semiconductor Science and Technology Conference, Waterloo, August 2017.*
- **O. Voznyy**, Atomistic simulations of solution-processed materials for solar cells and optoelectronics, *High-Performance Computing Symposium, Kingston, June 2017.*
- **O. Voznyy**, High-performing and stable perovskites for solar cells and light emission, *Oak Ridge National Lab, April 2017.*
- **O. Voznyy**, Nanomaterials for addressing the climate change and energy challenge, *Materials for Energy Seminar, Department of Physics, University of Ottawa, January 2016.*
- **O. Voznyy**, Role of quantum dots surface chemistry in photovoltaics, *Symposium on surface chemistry of semiconductor nanocrystals, Amsterdam, August 2015.*
- **O. Voznyy**, Solution processed nanomaterials for optoelectronic and energy applications, *Department of Chemical Engineering, TU Delft, August 2015.*
- **O. Voznyy**, Defects, surfaces and interfaces of hybrid perovskites, *DFT modeling of perovskites, CECAM workshop, Lausanne, August 2015.*
- **O. Voznyy**, Surface chemistry of PbS nanocrystals, *Department of Chemistry, ETH Zurich, August 2015.*
- **O. Voznyy**, Solution processable nanomaterials for energy applications, *Institute for Microstructural Sciences, NRC Canada, July 2014.*
- **O. Voznyy**, Colloidal quantum dot photovoltaics: challenges and perspectives, *Department of Electrical and Computer Engineering, University of Sherbrooke, February 2014.*
- **O. Voznyy**, Doping and dynamic surfaces in colloidal nanocrystals, *Department of Chemistry, University of California, Berkeley, February 2014.*
- **O. Voznyy**, Contact-free methods for measuring charge carrier diffusion in colloidal quantum dot films, *SPIE Photonics West, LASE, San Francisco, CA, February 2014.*
- **O. Voznyy**, Colloidal quantum dot solids: models and designs, *ACS National Meeting, New Orleans, LA, April 2013.*
- **O. Voznyy**, Ultra-stable “magic-size” nanocrystals, *NRC Canada, Steacie Institute for Molecular Sciences, 2010.*

PUBLICATIONS Oleksandr (Alex) Voznyy

h-index 44, >6500 citations (Google Scholar)

First-authored publications

111. **O. Voznyy**, J. Fan, O. Oulette, A. Jain, M. Askerka, M. Choi, M. Liu, L. Levina, E.H. Sargent, *Improving colloidal quantum dot synthesis with machine learning*, **2017**, Submitted.
110. **O. Voznyy**, L. Levina, F. Fan, G. Walters, J. Fan, A. Kiani, A. Ip, S. Thon, A. Proppe, E.H. Sargent, *Origins of Stokes shift in PbS nanocrystals*, *Nano Lett.*, **2017**, 10.1021/acs.nanolett.7b01843.
109. **O. Voznyy***, J. Morkath*, A. Jain, E. H. Sargent, U. Schwingenshloegl, *Computational study of optoelectronic properties of magic-size CdSe clusters with carboxylic ligands*, *J. Phys. Chem. C.*, **2016**, 120, 10015–10019.
108. **O. Voznyy**, F. Fan, G. Walters, A. Ip, A. Kiani, S. M. Thon, K.W. Kemp, L. Levina, E. H. Sargent, *Passivation-sensitive exciton finestructure produces excess Stokes shift in quantum dots*, arXiv, **2016**.
107. **O. Voznyy**, E. H. Sargent, *Atomistic model of fluorescence intermittency of colloidal quantum dots*, *Phys. Rev. Lett.*, **2014**, 112, 157401.
106. **O. Voznyy**, S. M. Thon, A. Ip, A. E. H. Sargent, *Dynamic trap formation and elimination in colloidal quantum dots*, *J. Phys. Chem. Lett.*, **2013**, 4, 987–992.
105. **O. Voznyy**, D. Zhitomirsky, P. Stadler, Z. Ning, S. Hoogland, E. H. Sargent *A charge-orbital balance picture of doping in colloidal quantum dot solids*, *ACS Nano*, **2012**, 6, 8448–8455.
104. **O. Voznyy**, # Corresponding author *Mobile surface traps in CdSe nanocrystals with carboxylic acid ligands*, *J. Phys. Chem. C*, **2011**, 115, 15927.
103. **O. Voznyy**, D. Guclu, P. Potasz, P. Hawrylak, *Effect of edge reconstruction and passivation on zero-energy states and magnetism in triangular graphene quantum dots with zigzag edges*, *Phys. Rev. B*, **2011**, 83, 165417.
102. **O. Voznyy**, J. J. Dubowski, J. T. Yates Jr., P. Maksymovych, *The role of gold adatoms and stereochemistry in self-assembly of methylthiolate on Au(111)*, *J. Am. Chem. Soc.*, **2009**, 131, 12989.
101. **O. Voznyy**, J. J. Dubowski, *c(4 x 2) structures of alkanethiol monolayers on Au (111) compatible with the constraint of dense packing*, *Langmuir*, **2009**, 25, p.7353.

100. **O. Voznyy**, J. J. Dubowski,
Structure of thiol self-assembled monolayers commensurate with the GaAs (001) surface,
Langmuir, **2008**, 24, p.13299.
99. **O. Voznyy**, J. J. Dubowski,
Adsorption kinetics of hydrogen sulfide and thiols on GaAs (001) surfaces in a vacuum,
J. Phys. Chem. C, **2008**, 112, p.3726.
98. **O. Voznyy**, J. J. Dubowski,
Structure, bonding nature, and binding energy of alkanethiolate on As-rich GaAs (001) surface: a density functional theory study,
J. Phys. Chem. B, **2006**, 110, p.23619.
97. **O. Voznyy**, R. Stanowski, J. J. Dubowski,
Multibandgap quantum well wafers by IR laser quantum well intermixing: simulation of the lateral resolution of the process,
Journal of Laser Micro / Nanoengineering, **2006**, 1, p.48.
96. **O. Voznyy**, V. Deibuk,
The role of alloying effects in the formation of electronic structure of unordered group III nitride solid solutions,
Semiconductors, **2004**, 38, p.304.
95. **O. Voznyy**, M. M. Sletov, V. Deibuk,
Features of optical properties of aluminum gallium nitride solid solutions,
Semiconductors, **2002**, 36, p.398.
94. **O. Voznyy**, M. M. Sletov, V. Deibuk,
Band structure and spatial charge distribution in AlGaN,
Semiconductors, **2000**, 34, p.35.

Co-first-authored publications

* = equal contribution.

93. F. Fan*, **O. Voznyy***, R. Sabatini*, K. Bicanic*, M. Adachi, J. McBride, K. Reid, A. Jain, R. Quintero-Bermudez, Y-S. Park, M. Saravanapavanantham, M. Liu, M. Korkusinski, P. Hawrylak, V. Klimov, S.J. Rosenthal, S. Hoogland, E. H. Sargent,
Continuous-wave lasing in colloidal quantum dot solids enabled by facet-selective epitaxy,
Nature, **2017**, 544, 75-79.
92. **O. Voznyy***, B. Sutherland*, A. Ip*, D. Zhitomirsky, E. H. Sargent,
Engineering charge transport by heterostructuring solution-processed semiconductors,
Nat. Rev. Mater., **2017**, 2, 17026.
91. B. Zhang*, X. Zheng*, **O. Voznyy***, R. Comin, M. Bajdich, M. G. Melchor, L. Han, J. Xu, M. Liu, L. Zheng, F. P. G. de Arquer, C. T. Dinh, F. Fan, M. Yuan, E. Yassitepe, N. Chen, T. Regier, P. Liu, Y. Li, P. De Luna, A. Janmohamed, H. L. Xin, H. Yang, A. Vojvodic, E. H. Sargent,
Homogeneously dispersed, multimetal oxygen-evolving catalysts,
Science, **2016**, 10.1126/science.aaf1525.
90. A. Jain*, **O. Voznyy***, M. Korkusinski, P. Hawrylak, E. H. Sargent,
Ultrafast Auger-assisted carrier trapping in core-shell quantum dots,
J. Phys. Chem. Lett., **2017**, 8, 3179.

89. A. Jain*, **O. Voznyy***, S. Hoogland, M. Korkusinski, P. Hawrylak, E. H. Sargent, *Atomistic design of CdSe/CdS core-shell quantum dots with suppressed Auger recombination*, Nano Lett., **2016**, 16, 6491-6496.
88. E. Yassitepe*, Z. Yang*, **O. Voznyy***, Y. Kim, G. Walters, J. Castaneda, P. Kanjanaboos, M. Yuan, X. Gong, F. Fan, J. Pan, S. Hoogland, R. Comin, O. Bakr, L. Padilha, A. F. Nogueira, E. H. Sargent, *Amine-free synthesis of cesium lead halide perovskite quantum dots for efficient light-emitting diodes*, Adv. Funct. Mater., **2016**, 10.1002/adfm.201604580.
87. X. Lan*, **O. Voznyy***, A.Kiani*, F.P.G. de Arquer*, A. Abbas, G.H. Kim, E. H. Sargent, *High efficiency quantum dot solar cells via molecular halide passivation*, Adv. Mater., **2015**, 28, 299.
86. M. Yuan*, **O. Voznyy***, D. Zhitomirsky, P. Kanjanaboos, E. H. Sargent, *Synergistic doping of fullerene electron transport layer and colloidal quantum dot solids enhances solar cell performance*, Adv. Mater., **2014**, 27, 917–921.
85. D. Zhitomirsky*, **O. Voznyy***, S. Hoogland, K. Kemp, A. Ip, S. M.Thon, E. H. Sargent, *Engineering colloidal quantum dot solids within and beyond the mobility-invariant regime*, Nat. Commun., **2014**, 5, 3803.
84. D. Zhitomirsky*, **O. Voznyy***, S. Hoogland, E. H. Sargent, *Measuring charge carrier diffusion in coupled colloidal quantum dot solids*, ACS Nano, **2013**, 7, 5282–5290.

Supervised projects

= corresponding author.

83. X. Li*, Y. Zhao*, L. Levina, M.Liu, R.Quintero-Bermudez, X.Gong, L.Quan, J. Fan, Z. Yang, S. Hoogland, F. Fan[#], **O.Voznyy[#]**, Z.H. Lu[#], E. H. Sargent[#], *Bright colloidal quantum dot light-emitting diodes enabled by efficient chlorination*, Nat. Photon., **2018**, Accepted.
82. B. Zhang, X. Zheng, S. Kozlov, C. Zhe, **O. Voznyy**, L. Cavallo[#], E. H. Sargent[#], *Additives for tuning the oxidation state of active sites in Co-based oxygen-evolving catalysts*, **2017**, Submitted.
81. A. Jain, **O. Voznyy[#]**, E. H. Sargent[#], *High-throughput screening of lead-free perovskite-like materials for optoelectronic applications*, J. Phys. Chem. C, **2017**, 10.1021/acs.jpcc.7b02221.
80. J.W. Jo, Y.Kim, J.Choi, F. P.G. de Arquer, G. Walters, B. Sun, O. Ouellette, J. Kim, A.H. Proppe, R. Quintero-Bermudez, J. Fan, J. Xu, **O. Voznyy[#]**, E. H. Sargent[#], *Enhanced open-circuit voltage in colloidal quantum dot photovoltaics via reactivity-controlled solution-phase ligand exchange*, Adv. Mater., **2017**, 10.1002/adma.201703627.

79. J. Choi, Y. Kim, J.W. Jo, J. Kim, B. Sun, G. Walters, F. P. G. de Arquer, R. Quintero-Bermudez, Y. Li, C. S. Tan, L. N. Quan, A. P. Tao Kam, S. Hoogland, Z. Lu, **O. Voznyy**[#], E. H. Sargent[#],
Chloride passivation of ZnO electrodes improves charge extraction in colloidal quantum dot photovoltaics,
Adv. Mater., **2017**, 10.1002/adma.201702350.
78. R. Quintero-Bermudez, R. Sabatini, M. Lejay, **O. Voznyy**[#], E. H. Sargent[#],
Small-band-offset perovskite shells increase Auger lifetime in quantum dot solids,
ACS Nano, **2017**, 10.1021/acsnano.7b06363.
77. A. Proppe, J. Xu, R. Sabatini, B. Sun, J. Fan, S. Hoogland, S. Kelley[#], **O. Voznyy**[#], E. H. Sargent[#],
Diffusion length of photocarriers in ink-based quantum dot solids,
2017, Submitted.
76. R. P. Sabatini, K. T. Bicanic, F. Fan, S. Hoogland, **O. Voznyy**[#], E. H. Sargent[#],
The negative effect of temperature on colloidal quantum dot optical gain media,
2017, Submitted.
75. J. Kim*, M. Saidaminov*, H. Tan, Y. Zheng, J.W. Jo, J. Choi, **O. Voznyy**[#], E. H. Sargent[#],
Reduced energetic disorder in wide bandgap perovskites via controlled growth dynamics for high Voc and phase stability,
Adv. Mater., **2018**, Accepted.
74. M.I. Saidaminov, A. Jain, J. Kim, R. Quintero-Bermudez, H. Tan, G. Long, Y. Zhao, **O. Voznyy**, E. H. Sargent,
Engineering defect densities for extended operation of perovskite solar cells in ambient air,
2017, Submitted.
73. J. Xu, **O. Voznyy**, M. Liu, A.R. Kirmani, G. Walters, R. Munir, M. Abdelsamie, A. Proppe, M. Wei, B. Sun, M. Liu, F. P.G. de Arquer, R. Quintero-Bermudez, J. Li, J. Fan, L. Quan, P. Todorovic, H. Tan, A. Sarkar, S. Hoogland, M. Stefiik, A. Amassian, E. H. Sargent,
2D matrix engineering for homogeneous quantum dot coupling in photovoltaic solids,
2017, Submitted.
72. L. Quan, R. Quintero-Bermudez, **O. Voznyy**, G. Walters, A. Jain, J. Fan, X. Zheng, Z. Yang, E. H. Sargent,
Highly emissive green perovskite nanocrystals in a solid state crystalline matrix,
Adv. Mater., **2017**, 29, 1605945.
71. M. Liu, **O. Voznyy**, R. Sabatini, F.P.G. de Arquer, R. Munir, A.H. Balawi, X. Lan, A.R. Kirmani, S. Hoogland, F. Laquai, A. Amassian, E.H. Sargent,
Hybrid organic-inorganic inks flatten the energy landscape in colloidal quantum dot solids,
Nat. Mater., **2017**, 16, 258.
70. B. Sun, **O. Voznyy**, H. Tan, P. Stadler, M. Liu, G. Walters, A. Proppe, M. Liu, E. H. Sargent,
Pseudohalide-exchanged quantum dot solids achieve record quantum efficiency in infrared photovoltaics,
Adv. Mater., **2017**, 29, 1700749.
69. X. Lan, **O. Voznyy**, F. P.G. de Arquer, M. Liu, J. Xu, A. Proppe, G. Walters, F. Fan, H. Tan, M. Liu, Z. Yang, S. Hoogland, E.H. Sargent,
10.6%-certified colloidal quantum dot solar cells via solvent-polarity-engineered halide passivation,
Nano Lett., **2016**, 16, 4630.

68. Y. Kim, Z. Yang, A. Jain, **O. Voznyy**, G-H. Kim, M. Liu, L. Quan, F. de Arquer, R. Comin, J. Fan, E. H. Sargent,
Pure cubic-phase hybrid iodobismuthates AgBi₂I₇ for thin-film photovoltaic,
Angew. Chem. Int. Ed., **2016**, 10.1002/anie.201603608.
67. A. Kiani, H. F. Movahed, S. Hoogland, **O. Voznyy**, R. Wolowiec, L. Levina, F.P. G. de Arquer, P. Pietsch, X. Wang, P. Maraghechi, E.H. Sargent,
Gradient-doped colloidal quantum dot solids for thermophotovoltaic harvesting of waste heat,
ACS Energy Lett. **2016**, 1, 740.
66. J. Xu, **O. Voznyy**, R. Comin, X. Gong, G. Walters, M. Liu, P. Kanjanaboos, X. Lan, E. H. Sargent,
Crosslinked remote-doped hole-extracting contacts enhance stability under accelerated lifetime testing in perovskite solar cells,
Adv. Mater. **2015**, 28, 2807.
65. Y. Kim, E. Yassitepe, **O. Voznyy**, R. Comin, G. Walters, X. Gong, P. Kanjanaboos, A.F. Nogueira, E. H. Sargent,
Efficient photoluminescence from perovskite quantum dot solids,
ACS Appl. Mater. & Interf. **2015**, 7, 25007.
64. G. H. Carey, L. Levina, R. Comin, **O. Voznyy**, E. H. Sargent,
Record diffusion length in colloidal quantum dot solids via mutual dot-to-dot surface passivation
Adv. Mater. **2015**, 27, 3325.
63. G. H. Carey, M. Yuan, R. Comin, **O. Voznyy**, E. H. Sargent,
Cleavable ligands enable uniform close packing in colloidal quantum dot solids,
ACS Appl. Mater. & Interfaces. **2015**, 7, 21995.
62. Z. Ning, H. Dong, Q. Zhang, **O. Voznyy**, E. H. Sargent,
Solar cells based on inks of n-type colloidal quantum dots,
ACS Nano, **2014**, 8, 10321.
61. A. Buin, P. Pietsch, **O. Voznyy**, R. Comin, A. Ip, E. H. Sargent,
Materials processing routes to trap-free halide perovskites,
Nano Lett. **2014**, 14, 6281.

Publications as a leading computational contributor

60. L. N. Quan, Y. Zhao, **O. Voznyy**, H. Yuan, E. Bladt, J. Pan, F. P.G. de Arquer, R. Sabatini, Z. Piontkowski, A-H. Emwas, P. Todorovic, R. Quintero-Bermudez, G. Walters, J.Z. Fan, Y. Li, D.H. Anjum, N. Wei, D.W. McCamant, M.B. J. Roeffaers, S. Bals, J. Hofkens, O.M. Bakr, Z-H. Lu, E. H. Sargent,
Facet management in reduced-dimensional perovskites enables efficient and stable light-emitting diodes,
2017, Submitted.
59. M. Elkins*, A. Proppe *, **O. Voznyy**, R. Pensack, L. Quan, S. Kelley, E.H. Sargent, G. Scholes,
Ultrafast femtosecond exciton transfer in quasi-two-dimensional perovskites,
2017, Submitted.
58. H. Tan, A. Jain, **O. Voznyy**, X. Lan, F.P.G.A. de Arquer, M. Yuan, B. Zhang, J. Fan, F. Fan, L. Quan, R. Bermudez, P. Li, Z. Lu, Z. Yang, S. Hoogland, E.H. Sargent,
Efficient and stable solution-processed planar perovskite solar cells via contact passivation,

- Science, **2017**, 10.1126/science.aai9081.
57. F. Bertolotti, D.N. Dirin, M. Ibáñez, F. Krumeich, A. Cervellino, R. Frison, **O. Voznyy**, E.H. Sargent, M.V. Kovalenko, A. Guagliardi, N. Masciocchi, *Crystal symmetry breaking and role of vacancies in colloidal lead chalcogenide quantum dots*, Nat. Mater., **2016**, 15, 987.
56. M. A. Mezour, **O. Voznyy**, E. H. Sargent, B. Lennox, D. Perepichka, *Controlling C₆₀ growth through dipole-induced band alignment at self-assembled monolayer interface*, Chem. Mater. **2016**, 28, 8322.
55. Z. Ning,* X. Gong,* R. Comin,* G. Walters, F. Fan, **O. Voznyy**, A. Buin, S. Hoogland, E.H. Sargent, *Quantum-dot-in-perovskite solids*, Nature, **2015**, 523, 324-328.
54. M. Adachi, F. Fan, D. Sellan, S. Hoogland, **O. Voznyy**, A. J. Houtepen, K.D. Parrish, P. Kanjanaboos, J.A. Malen, E.H. Sargent, *Microsecond-sustained lasing from colloidal quantum dot solids*, Nat. Commun. **2015**, 6, 8694.
53. L. Protesescu, M. Nachttegaal, **O. Voznyy**, O. Borovinskaya, A. J. Rossini, L. Emsley, C. Copéret, D. Günther, E. H. Sargent, M. V. Kovalenko *Atomistic description of thiostannate-capped CdSe nanocrystals*, J. Am. Chem. Soc., **2015**, 137, 1862.
52. Z. Ning, **O. Voznyy**, J. Pan, J. Xu, S. Hoogland, V. Adinolfi, K. Kemp, J. Minor, H. Dong, L. Rollny, A. Labelle, G. Carey, B. Sutherland, O. Bakr, E. H. Sargent, *Air stable n-type colloidal quantum dot solids*, Nat. Mater., **2014**, 13, 822.
51. A. Ip, S. Thon, S. Hoogland, **O. Voznyy**, D. Zhitomirsky, R. Debnath, L. Levina, L. Rollny, G. Carey, A. Fischer, K. Kemp, I. Kramer, Z. Ning, A. Labelle, K. Chou, A. Amassian, E.H. Sargent, *Hybrid passivated colloidal quantum dot solids*, Nat. Nanotechnol., **2012**, 7, 577-582.

Reviews

50. J. Y. Kim, **O. Voznyy**, D. Zhitomirsky, E. H. Sargent, *Colloidal quantum dot materials and devices: a quarter-century of advances*, Adv. Mater., **2013**, 25, 4986–5010.
49. W. Sheng, M. Korkusinski, A. D. Güçlü, M. Zielinski, P. Potasz, E. Kadantsev, **O. Voznyy**, P. Hawrylak, *Electronic and optical properties of semiconductor and graphene quantum dots*, Frontiers of Phys., **2012**, 7, 328-352.
48. P. Maksymovych, **O. Voznyy**, D. Dougherty, D. Sorescu, J. T. Yates Jr. *Gold adatom as a key structural component in self-assembled monolayers of organosulfur molecules on Au(111)*, Prog. Surf. Sci., **2010**, 85, 206-240.

47. J. J. Dubowski, **O. Voznyy**, G. Marshall,
Molecular self-assembly and passivation of GaAs (001) with alkanethiol monolayers: a view towards bio-functionalization,
Appl. Surf. Sci., **2010**, 256, 5714.

Other publications in chronological order

2017

46. X. Zheng,* B. Zhang,* R. Comin, P. De Luna, **O. Voznyy**, Y. Liang, L. Han, F.P.Garcia de Arquer, M. Liu, C. T. Dinh, D. Prendergast, X. Du, E. H. Sargent,
High-valence metal sites for water oxidation designed using in operando soft X-ray absorption,
Nat. Chem., **2017**, Accepted.
45. M.H. Elkins, R. Pensack, A. Proppe, **O. Voznyy**, L. Quan, S. Kelley, E. H. Sargent, G. Scholes,
Biexciton resonances reveal exciton localization in stacked perovskite quantum wells,
J. Phys. Chem. Lett., **2017**, Accepted.
44. C.F. Wang, F. Fan, R.P. Sabatini, **O. Voznyy**, K. Bicanic, X. Li, D. Sellan, S. Hoogland, E. H. Sargent,
Quantum dot color-converting solids operating efficiently in the kW/cm² regime,
Chem. Mater., **2017**, 29, 5104-5112.
43. L. Quan, Y. Zhao, F. G. de Arquer, R. Sabatini, G. Walters, **O. Voznyy**, R. Comin, Y. Li, J.Fan, H.Tan, J.Pan, M.Yuan, O. Bakr, Z. H. Lu, D. H. Kim, E. H. Sargent,
Tailoring the energy landscape in quasi-2d halide perovskites enables efficient green-light emission,
Nano Letters, **2017**, 17, 3701.
42. F.P.G. de Arquer, X. Gong, R.P. Sabatini, M. Liu, G.H. Kim, B. Sutherland, **O. Voznyy**, J. Xu, Y. Pang, S. Hoogland, D. Sinton, E. H. Sargent,
Field-emission from quantum-dot-in-perovskite solids,
Nat. Commun., **2017**, 8, 14757.
41. Z. Yang, **O. Voznyy**, G. Walters, J. Fan, M. Liu, S. Kinge, S. Hoogland, E. H. Sargent,
Quantum dots in two-dimensional perovskite matrices for efficient near-infrared light emission,
ACS Photonics, **2017**, 4, 830-836.
40. S. Ashhab, **O. Voznyy**, S. Hoogland, E.H. Sargent, M.E. Madjet,
Effect of disorder on transport properties in a tight-binding model for organo-metal halide perovskites,
Sci.Rep., **2017**, Accepted.

2016

39. M. Liu,* Y. Pang,* B. Zhang,* P. De Luna,* **O. Voznyy**, J. Xu, X. Zheng, C. T. Dinh, F. Fan, C. Cao, F. P.G. de Arquer, T. S. Safaei, A. Mepham, A. Klinkova, E. Kumacheva, T. Filleter, D. Sinton, S. O. Kelley, E.H. Sargent,
Enhanced electrocatalytic CO₂ reduction via field-induced reagent concentration,
Nature, **2016**, 10.1038/nature19060.
38. M.Yuan*, L.Quan*, R.Comin, G. Walters, R. Sabatini, **O.Voznyy**, S. Hoogland, D.H. Kim, E. H. Sargent,

- Perovskite energy funnels for efficient light-emitting diodes*,
Nat. Nanotechnol., **2016**, 10.1038/nnano.2016.110.
37. X. Gong*, Z. Yang*, G. Walters, R. Comin, Z. Ning, E. Beauregard, V. Adinolfi, **O. Voznyy**, E.H. Sargent,
Quantum-dot-in-perovskite light-emitting diodes,
Nat. Photon., **2016**, 10, 253.
36. L. Quan,* M. Yuan,* R. Comin, **O. Voznyy**, E. Beauregard, S. Hoogland, A. Buin, A. Kirmani, K. Zhao, A. Amassian, D.H. Kim, E.H. Sargent,
Ligand-stabilized reduced-dimensionality perovskites,
J. Am. Chem. Soc. **2016**, 138, 2649-2655.
35. A. Kiani, B. Sutherland, Y. Kim, O. Ouellette, L. Levina, G. Walters, C.T. Dinh, M. Liu, **O. Voznyy**, X. Lan, A. Labelle, A. Ip, A. Proppe, O. Mohammed, S. Hoogland, E.H. Sargent,
Single-step colloidal quantum dot films for infrared solar harvesting,
Appl. Phys. Lett., **2016**, 109, 183105.
34. A.L. Abdelhady,* M.I. Saidaminov,* B. Murali, V. Adinolfi, K. Katsiev, R. Comin, I. Dursun, E. Alarousu, **O. Voznyy**, E.H. Sargent, O.F. Mohammed, O.M. Bakr,
Tunable band gap and type control of hybrid perovskite crystals via in situ incorporation of Bi dopant,
J. Phys. Chem. Lett., **2016**, 7, 295.
33. M. Liu, F. de Arquer, Y. Li, X. Lan, G.H. Kim, **O. Voznyy**, L.K. Jagadamma, A.S. Abbas, S. Hoogland, Z. Lu, J.Y. Kim, A. Amassian, E.H. Sargent,
Double-sided junctions enable high-performance colloidal-quantum-dot photovoltaics,
Adv. Mater. **2016**, 10.1002/adma.201506213.
32. J.A. Castañeda, G. Nagamine, E. Yassitepe, L.G. Bonato, **O. Voznyy**, S. Hoogland, A.F. Nogueira, E.H. Sargent, C.H. Brito Cruz, L.A. Padilha,
Efficient biexciton interaction in perovskite quantum dots under weak and strong confinement,
ACS Nano, **2016**. 10.1021/acsnano.6b03908
31. A. Klinkova, P. de Luna, C.T. Dinh, **O. Voznyy**, E. Larin, E. Kumacheva, E. H. Sargent,
Rational design of efficient palladium catalysts for electroreduction of carbon dioxide to formate,
ACS Catalysis, **2016**, Accepted.

2015

30. J. Xu, A. Buin, A.H. Ip, W. Li, **O. Voznyy**, R. Comin, M. Yuan, S. Jeon, Z. Ning, J. McDowell, P. Kanjanaboos, J.-P. Sun, X. Lan, L.N. Quan, I.G. Hill, P. Maksymovych, E.H. Sargent,
Perovskite:fullerene hybrid materials eliminate hysteresis in planar diodes,
Nat. Commun. **2015**, 6, 7081.
29. J.Y. Kim, V. Adinolfi, B.R. Sutherland, **O. Voznyy**, S. J. Kwon, T.W. Kim, J. Kim, H. Ihee, D. Zhitomirsky, K. Kemp, M. Adachi, M. Yuan, I. Kramer, S. Hoogland, E.H. Sargent,
Single-step fabrication of quantum funnels via centrifugal colloidal casting of nanoparticle films,
Nat. Commun. **2015**, 6, 7772.

28. L. Quan, M. Yuan, R. Comin, **O. Voznyy**, E. M. Beaugard, S. Hoogland, A. Buin, A. R. Kirmani, K. Zhao, A. Amassian, D. H. Kim, E. H. Sargent, *Ligand-stabilized reduced-dimensionality perovskites*, *J. Am. Chem. Soc.* **2015**, 138, 2649.
27. Z. Yang, E. Yassitepe, **O. Voznyy**, A. Janmohamed, X. Lan, L. Levina, R. Comin, E. H. Sargent, *Self-assembled PbSe nanowire: perovskite hybrids*, *J. Am. Chem. Soc.* **2015**, 137, 14869.
26. Z. Yang, **O. Voznyy**, M. Liu, M. Yuan, L. Levina, S. Hoogland, E. H. Sargent, *All-quantum-dot infrared light-emitting diodes*, *ACS Nano* **2015**, 9, 12327.
25. A. H. Ip*, A. Kiani*, I. J. Kramer*, **O. Voznyy**, H. F. Movahed, L. Levina, M. Adachi, S. Hoogland, E. H. Sargent, *Infrared colloidal quantum dot photovoltaics via coupling enhancement and agglomeration suppression*, *ACS Nano* **2015**, 9, 8833.
24. S. Masala, V. Adinolfi, J.-P. Sun, S. Del Gobbo, **O. Voznyy**, I. J. Kramer, I. G. Hill, E. H. Sargent, *The silicon:colloidal quantum dot heterojunction*, *Adv. Mater.* **2015**, 27, 7445.
23. Z. Yang,* A. Janmohamed,* X. Lan, F. P. G. de Arquer, **O. Voznyy**, E. Yassitepe, G.-H. Kim, Z. Ning, X. Gong, R. Comin, E. H. Sargent, *Colloidal quantum dot photovoltaics enhanced by perovskite shelling*, *Nano Lett.* **2015**, 15, 7539.
22. F. Fan,* P. Kanjanaboos,* M. Saravanapavanantham,* E. Beaugard, G. Ingram, E. Yassitepe, M. Adachi, **O. Voznyy**, A. K. Johnston, G. Walters, G.-H. Kim, Z.-H. Lu, E. H. Sargent, *Colloidal CdSe_{1-x}S_x nanoplatelets with narrow and continuously-tunable electroluminescence*, *Nano Lett.* **2015**, 15, 4611.
21. R. Comin, G. Walters, E. Thibau, **O. Voznyy**, Z.-H. Lu, E. H. Sargent, *Structural, optical, and electronic studies of wide-bandgap lead halide perovskites*, *J. Mater. Chem. C*, **2015**, 3, 8839.
20. B. R. Sutherland,* S. Hoogland,* M. M. Adachi, P. Kanjanaboos, C. T. O. Wong, J. J. McDowell, J. Xu, **O. Voznyy**, Z. Ning, A. J. Houtepen, E. H. Sargent, *Perovskite thin films via atomic layer deposition*, *Adv. Mater.* **2015**, 27, 53.

2014

19. H. Liu, M. Li, **O. Voznyy**, L. Hu, D. Zhou, Z. Xia, E. H. Sargent, J. Tang, *Physically flexible, rapid-response gas sensor based on colloidal quantum dot solids*, *Adv. Mater.*, **2014**, 26, 2718.
18. G. Carey, I. Kramer, P. Kanjanaboos, G. Moreno-Bautista, **O. Voznyy**, L. Rollny, J. Tang, S. Hoogland, E. H. Sargent, *Electronically active impurities in colloidal quantum dot solids*, *ACS Nano* **2014**, 8, 11763.

2013

17. M. Yuan, D. Zhitomirsky, V. Adinolfi, **O. Voznyy**, K. Kemp, Z. Ning, X. Lan, J. Xu, J. Y. Kim, H. Dong, E. H. Sargent, *Doping control via molecularly-engineered surface ligand coordination*, *Adv. Mater.*, **2013**, 25, 5586.
16. P. Maksymovych, D. Sorescu, **O. Voznyy**, J. T. Yates, Jr., *Hybridization of phenylthiolate- and methylthiolate-adsorbed species at low coverage on the Au(111) surface*, *J. Am. Chem. Soc.*, **2013**, 135, 4922-4925.
15. Kh. Katsiev, A. Ip, A. Fischer, I. Tanabe, X. Zhang, A. Kirmani, **O. Voznyy**, L. Rollny, K. W. Chou, S. M. Thon, G. Carey, X. Cui, A. Amassian, P. Dowben, E. H. Sargent, O. Bakr, *Complete in-gap electronic structure of colloidal quantum dot films and its correlation with transport and solar cell performance*, *Adv. Mater.*, **2013**, 26, 937.
14. F. Li, L. Tang, **O. Voznyy**, J. Gao, Q. Guo, *The striped phases of ethylthiolate monolayers on the Au(111) surface: a scanning tunneling microscopy study*, *J. Chem. Phys.*, **2013**, 138, 194707.
13. S. M. Thon, A. Ip, **O. Voznyy**, L. Levina, K. Kemp, G. Carey, S. Masala, E. H. Sargent, *Role of bond adaptability in the passivation of colloidal quantum dot solids*, *ACS Nano*, **2013**, 7, 7680.
12. A. Fischer, L. Rollny, J. Pan, G. Carey, S. Thon, S. Hoogland, **O. Voznyy**, D. Zhitomirsky, J. Y. Kim, O. Bakr, E. H. Sargent, *Directly-deposited quantum dot solids using a colloidal stable nanoparticle ink*, *Adv. Mater.*, **2013**, 25, 5742.
11. A. O. Ballouli, L. Rollny, J. Pan, **O. Voznyy**, O. Bakr, E. H. Sargent, *Automated synthesis of photovoltaic-quality colloidal quantum dots*, *Adv. Mater.*, **2013**, 7, 10158.
10. Z. Ning, D. Zhitomirsky, V. Adinolfi, B. Sutherland, J. Xu, **O. Voznyy**, P. Maraghechi, X. Lan, S. Hoogland, Y. Ren, E. H. Sargent, *Graded doping for enhanced colloidal quantum dot photovoltaics*, *Adv. Mater.*, **2013**, 25, 1719–1723.

2012

9. Z. Ning, Y. Ren, S. Hoogland, **O. Voznyy**, L. Levina, P. Stadler, X. Lan, D. Zhitomirsky, E. H. Sargent, *All-inorganic colloidal quantum dot photovoltaics employing solution-phase halide passivation*, *Adv. Mater.*, **2012**, 24, 6295–6299.
8. D. Zhitomirsky, M. Furukawa, J. Tang, P. Stadler, S. Hoogland, **O. Voznyy**, H. Liu, E. H. Sargent, *N-type colloidal-quantum-dot solids for photovoltaics*, *Adv. Mater.*, **2012**, 24, 6181–6185.

2011 and before

7. M. Korkusinski, **O. Voznyy**, P. Hawrylak,
Theory of highly excited semiconductor nanostructures including Auger coupling: exciton-biexciton mixing in CdSe nanocrystals,
Phys. Rev. B, **2011**, 84, 155327.
6. P. Potasz, D. Guclu, **O. Voznyy**, J.A. Folk, P. Hawrylak,
Electronic and magnetic properties of triangular graphene quantum rings,
Phys. Rev. B, **2011**, 83, 174441.
5. M. Korkusinski, **O. Voznyy**, P. Hawrylak,
Fine structure and size dependence of exciton and biexciton optical spectra in CdSe nanocrystals,
Phys. Rev. B, **2010**, 82, 245304.
4. D. Guclu, P. Potasz, **O. Voznyy**, M. Korkusinski, P. Hawrylak,
Magnetism and correlations in fractionally filled degenerate shells of graphene quantum dots,
Phys. Rev. Lett, **2009**, 103, 246805.
3. R. Wang, C. I. Ratcliffe, X. Wu, **O. Voznyy**, Y. Tao, K. Yu,
Magic-sized Cd₃P₂ II–V nanoparticles exhibiting bandgap photoemission,
J. Phys. Chem. C, **2009**, 113, p.17979.
2. R. Stanowski, **O. Voznyy**, J. J. Dubowski,
Finite element model calculations of temperature profiles in Nd:YAG laser annealed GaAs/AlGaAs quantum well microstructures,
Journal of Laser Micro / Nanoengineering, **2006**, 1, p.17.
1. V. Deibuk, **O. Voznyy**,
Thermodynamic stability and charge redistribution in ternary AlGaN, InGaN, and InAlN alloys,
Semiconductors, **2005**, 39, p.623.

CONFERENCE PRESENTATIONS**Contributed talks**

- **O. Voznyy**, L.Levina, F.Fan, G.Walters, J.Fan, A.Kiani, A.Ip, S.Thon, E. H. Sargent, Stokes shift in quantum dots and its effect on V_{OC} in solar cells, *Canadian Chemistry Conference*, Toronto, **2017**.
- **O. Voznyy**, E. H. Sargent, Colloidal quantum dots in solar cells and lasers: progress and perspectives, *Canadian Association of Physicists Congress*, Kingston, May **2017**.
- **O. Voznyy**, B.Zhang, X.Zheng, E.H. Sargent, Multimetal oxygen-evolving catalysts in alkaline and neutral media, *Bio-inspired solar energy: CIFAR*, Vancouver, May **2016**.
- **O. Voznyy**, E. H. Sargent, Solution Processed Semiconductors for Optoelectronic and Energy Applications *Canadian Semiconductors Science and Technology Conference*, Sherbrooke, **2015**.
- **O. Voznyy**, E. H. Sargent, Colloidal quantum dot solar cells: perspectives and challenges, *Nanomaterials for energy conversion, Canadian Chemistry Conference*, Ottawa, June **2015**.
- **O. Voznyy**, E. H. Sargent, Solution processed nanomaterials for optoelectronic and energy applications, *Advances functional nanomaterials, Canadian Chemistry Conference*, Ottawa, June **2015**.
- **O. Voznyy**, A. Kiani, D. Zhitomirsky, L. Levina, G. Carey, E.H. Sargent, Enhanced carrier diffusion lengths in solution processed photovoltaic materials, *HOPV15*, Rome, Italy, May **2015**.
- **O. Voznyy**, D.Zhitomirsky, L.Levina, S.Hoogland, K.Kemp, A.H. Ip, S.M. Thon, E.H. Sargent, Engineering Colloidal Quantum Dot Solids within, and beyond, the Mobility-Invariant Regime, *NANAX6*, Bad Hofgastein, Austria, May **2014**.
- **O. Voznyy**, E. H. Sargent, Progress in colloidal quantum dot photovoltaic performance, *ACS National Meeting*, New Orleans, LA, April **2013**.
- **O. Voznyy**, S. M. Thon, A. Ip, E. H. Sargent, Elimination of deep surface traps in charged colloidal PbS and CdSe quantum dots, *APS March Meeting*, Baltimore, MD, March **2013**.
- **O. Voznyy**, Mobile surface traps in CdSe nanocrystals with carboxy ligands, *APS March Meeting*, Dallas, TX, March **2011**.
- **O. Voznyy**, M. Korkusinski, P. Hawrylak, Atomistic calculations of exciton-biexciton mixing and lifetime in CdSe nanocrystals, *APS March Meeting*, Dallas, TX, March **2011**.
- **O. Voznyy**, M. Korkusinski, E. Kadantsev, P. Hawrylak, Atomistic calculations of the biexciton finestructure in CdSe nanocrystals, *APS March Meeting*, Portland, OR, March **2010**.

- **O.Voznyy**, E. Kadantsev, M. Korkusinski, P. Hawrylak, Effect of surface ligands on the electronic and optical properties of CdSe nanocrystals, *MRS Fall Meeting*, Boston, MA, November **2009**.
- **O.Voznyy**, J.J. Dubowski, Structure and adsorption mechanisms of thiol self-assembled monolayers on GaAs (001) surfaces, *APS March Meeting*, New Orleans, LA, March **2008**.
- **O.Voznyy**, J.J. Dubowski, Reconstructions of the Au(111) and GaAs(001) surfaces driven by thiol-thiol interactions, *Canadian Association of Physicists Congress*, Quebec, June **2008**.
- **O.Voznyy**, J.J. Dubowski, Adsorption and self-assembly of alkanethiols on GaAs (001) surface, *IEEE Lasers & Electro-Optics Society Annual Meeting*, Montreal, October **2006**.
- **O.Voznyy**, J.J. Dubowski, Ab-initio study of self-assembled monolayers of thiols on (001) GaAs, *Photonics North*, Quebec City, Canada, June **2006**.
- **O. Voznyy**, R. Stanowski, J. J. Dubowski, Multibandgap quantum well wafers by IR laser quantum well intermixing: simulation of the lateral resolution of the process, *Laser Precision Microfabrication*, Williamsburg, VA, April **2005**.
- **O. Voznyy**, V. Deibuk, Thermodynamic stability of bulk and film group-III nitride alloys, *Physics and technology of thin films*, Ukraine, **2003**.

Posters

- **O.Voznyy**, F.Fan, L.Levina, A.Kiani, K.Kemp, A.H. Ip, S.M. Thon, E.H. Sargent, Elimination of Stokes shift in colloidal quantum dots, *Gordon Research Conference on Semiconductor Nanocrystals*, Mount Snow, VM, July **2016**.
- **O.Voznyy**, D. Zhitomirsky, K. Kemp, S. M. Thon, A. Ip, S. Hoogland, Z. Ning, J. Morkath, U. Schwingenschloegl, E. H. Sargent, The role of nanocrystal stoichiometry in the formation of electronic trap states, *Gordon Research Conference on Nanocrystals*, South Hadley, MA, August **2013**.
- **O. Voznyy**, D. Zhitomirsky, J. Tang, M. Furukawa, P. Stadler, L. Levina, H. Liu, E. H. Sargent, Controlled doping of quantum dot solids via stoichiometry tuning, *MRS Fall Meeting*, Boston, MA, November **2012**.
- **O.Voznyy**, E. Kadantsev, M. Korkusinski, P. Hawrylak, Influence of dephasing time and density of states asymmetries on carrier multiplication efficiencies, *Gordon Research Conference on Nanocrystals & Nanostructures*, South Hadley, MA, July **2009**.
- **O.Voznyy**, J.J.Dubowski, First-principles study of adsorption energetics of alkanethiols on GaAs(001), *MRS Fall Meeting*, Boston, MA, November **2006**.

REFERENCES**Prof. Ted Sargent**

Canada Research Chair in Nanotechnology
Dept. of Electrical & Computer Engineering
University of Toronto
Toronto, ON, Canada, M5S 3G4
(416) 946-5051
ted.sargent@utoronto.ca

Prof. Alan Aspuru-Guzik

Department of Chemistry
Harvard University
12 Oxford Street, Room M113
Cambridge, MA 02138
(617) 384-8188
aspuru.staff@gmail.com

Prof. Pawel Hawrylak

Department of Physics
University of Ottawa
Ottawa, ON, Canada, K1A 0R6
(613) 562-5700 #2690
pawel.hawrylak@uottawa.ca

Prof. Jonathan Owen

Department of Chemistry
Columbia University
3000 Broadway, MC 3121
New York, NY 10027
(212) 851-5879
jso2115@columbia.edu

Prof. Jan J. Dubowski

Canada research chair in Quantum
Semiconductors
Dept. of Electrical and Computer Engineering
Université de Sherbrooke
Sherbrooke, QC, Canada, J1K 2R1
(819) 821-8000 #62528
jan.j.dubowski@usherbrooke.ca

Prof. Filippo de Angelis

*Institute of Molecular Science and Technologies
(CNR-ISTM)*
Via Elce di Sotto, 8
06123 – Perugia, Italy
filippo@thch.unipg.it
+39 (075) 585-5523