Gerasimos Konstantatos, Dipl. Ing, M.A.Sc., Ph.D
Date of Birth: 09/03/1979
Group Leader – ICREA Professor
Functional Optoelectronic Nanomaterials
ICFO - Institute of Photonic Sciences,
Av. Carl Friedrich Gauss 3, Castelldelfels,
Barcelona, Spain 08860
Tel. (Mob) +34653180137
Email: gerasimos.konstantatos@icfo.eu
Web: https://www.icfo.eu/research-group/17/sp-nanophotonic-devices/home/437/
ORCID : orcid.org/0000-0001-7701-8127

POSITION(s):

2015 – Present: Group Leader (professor with tenure) at ICFO (www.icfo.eu)
: ICREA Research Professor (www.icrea.cat)

September 2009 - 2014: Group Leader – Assistant Professor at the Institute of Photonic Sciences (ICFO)

- *Selected Cellex NEST fellow in 2009 to start a tenure track Group Leader position at ICFO (a highly selective process with <1% applicants selected).*

September 2008 – July 2009: Postdoctoral fellow in the department of Electrical and Computer Engineering at the University of Toronto, Canada.

EDUCATION:

October 2004 - July 2008: Ph.D. in the department of Electrical and Computer Engineering at the University of Toronto, Canada. Thesis Title: "Sensitive Solution-processed Quantum Dot Photodetectors". Ph. D. Supervisor: Edward H. Sargent.

September 2002- September 2004: M.A.Sc. in the department of Electrical and Computer Engineering at the University of Toronto, Canada. Thesis Title: "Solution-processed Infrared Light Emitting Diodes: Origins and Optimization of Quantum Efficiency".

September 1996- September 2001: Diploma in Electrical and Computer Engineering from the University of Patras, Greece. Thesis Title: "Analysis and Design of Printed Microstrip Antennas".

FELLOWSHIPS & AWARDS

- **ICREA Professor** (since 2015)
- **Fresnel Prize 2013** for salient contributions in the field of colloidal quantum dot optoelectronics.
- **TR35-SPAIN MIT Technology Review Award 2012**.
- **Ramon y Cajal Fellow** (2012-2016, ranked 1st nationwide in the technology category).
- **Marie Curie Career Re-integration Grant, EU-FP7, 2010.**
- **Connaught Fellow** (2004-2008) (highly prestigious, competitive fellowship for Ph.D. students).
- Ontario Graduate Scholarship (2002-2004).
- **Ericsson Award** of Excellence in Telecommunications, **2001**.

NOTABLE ACHIEVEMENTS

- **ERC Consolidator Grant Awardee in 2016 and 2020.**
- **ERC Proof of Concept grant Award 2018 and 2021.**
- **Scientific Coordinator of NANOMATCELL (2012-2015) and 2DNEURALVISION** (2023-2026) EU Projects.
- **Received more than 11M€ of funding from competitive calls** (European, National and Industrial projects) in the period 2009-2023.
- **Co-Founder and BoD Member of Qurv Technologies, a spin-off from ICFO.**
- **Inventor of 18 granted patent families and 9 more patent applications. Five of them licensed to Invisage Technologies (bought-up by Apple Inc.), ten of them licensed to Qurv, five of them licensed to HP.**
- **Scientific Yield: 120 refereed Journal Publications in Q1/D1 (in >90 as a leading corresponding author), >26,800 citations, h-index: 62 (Google Scholar),** ***20*** articles published in ***Nature/Science family*** Journals (***1xNature, 7xNature Photonics, 1xNature Materials, 4xNature Nanotechnology, 5xNature Comm., 1xNature Energy, 1 Science Advances),*** *>13x Advanced Materials, 4x ACS Nano, 6x Nanoletters, 1x Light: Science and applications.*

His work has received broad media coverage including national and international media **(The Economist, Financial Times, Wall St. Journal, El Mundo, El Pais, La Vanguardia, CNN/GR, To Vima, Kathimerini etc.)** as well as in more technical media (Optics and Photonics News, IEEE spectrum, Physics World, NanotechWeb, Science Daily, Phys.org, Photonics.com, Laser Focus World etc.)

SUPERVISION AND MENTORING

- The PI currently supervises 5 Ph.D. students and 12 post-doctoral fellows.
- The PI has successfully supervised **11 Ph.D. students** who have then taken positions in industry and academia: Dr. L.Martinez, Dr. P. Garcia de Arquer: Dr. D. Kufer, Dr. D. So, Dr. I. Nikitskiy, Dr. Onur Ozdemir, Dr. M. Zafer Akgul, Dr. Yongjie Wang, Dr. Nima Taghipour, Dr. Shanti Liga.
- The PI has supervised 8 **Marie-Curie Fellows** (IIF and IEF): Dr. S. Diedenhofen, Dr. F. Beck, Dr. O. Vazquez Mena, Dr. N. Cates Miller, Dr. F. DiStasio, Dr. S. Christodoulou, Dr. Z. Wang, Dr. Lucheng Peng.
- **13 researchers who completed their phd or postdoctoral studies at the group of the PI have moved to independent research/faculty member careers**:

F. Beck - group leader at ANU Australia / A. Mihi (ERC Starting Grant) - ICMAB-CSIC Barcelona / A. K. Rath - National Chemical Laboratory India / Oscar Vazquez-Mena –UC San Diego, USA / M. Bernechea –INA/University of Zaragoza / J.Wang – ShanDong University, China / F. Di Stasio (ERC Starting Grant)– IIT, Genoa, Italy / N. Huo – South China Normal University, China / S. Christodoulou – Chemistry Dept of University of Cyprus. / P. Garcia de Arquer – ICFO (NEST Fellow, ERC Starting Grant) / S. Pradhan – IIT, Roorkee, India / Z. Wang –Beijing Institute of Technology, China / Hyun-Soo Ra – Seoul National University.

COMMISSIONS OF TRUST:

- **Regular reviewer for:** Nature, Science, Nature Nanotechnology, Nature Materials, Nature Photonics, Nature Communications, Advanced Materials, Advanced Energy Materials, Advanced Optical Materials, Advanced Functional Materials, Small, Nanoletters, ACS Nano, ACS Photonics, JACS, JPCC, JPCL, Applied Physics

Letters, Energy and Environmental Science, Nanoscale, Physical Chemistry Chemical Physics, etc.

- **Member of Editorial Advisory Board:** Advanced Optical Materials (Wiley), 2020 - present.
- **Proposal Evaluator for:** ERC (Starting Grant, Consolidator and Advanced Grant), H2020 (Marie Curie, FET), Dutch Funding Agency for applied science (Tech. Foundation STW), German Science Foundation (DFG), Belgian FWO, Singapore´s SERC, SWISS science Foundation.
- **Member of the scientific advisory board** for INN (Institute of Nanoscience and Nanotechnology) of NCSR Demokritos, Athens, Greece.

INSTITUTIONAL RESPONSIBILITIES

- PhD Committee Member at ICFO (2018-present).
- Committee Evaluation Member for selection of Postdoc and PhD MC-COFUND Fellows at ICFO (2016 – Present).
- Selection Committee Member for new faculty hirings at ICFO (2016 – Present).
- Chair of Nanocharacterization Lab (NCL) Facility of ICFO (2023-present)

ORGANISATION OF SCIENTIFIC MEETINGS

- 2015: Co-chair and scientific organizer of the SPINS15 conference (http://www.nanoge.org/SPINS15/) with more than 190 participants.
- 2019: Organizer of ICFO Summer School on Nanophotonics and Nanomaterials for Solar Harvesting Applications (> 100 participants).

KEY SCIENTIFIC ACHIEVEMENTS

SELECTED JOURNAL PUBLICATIONS

20 important (Nature Family Group) Publications – Full publication list is provided at the end of this document

Pre-ICFO (as a graduate student), 2004-2009:

1. G. Konstantatos, E. H. Sargent, "Light Sensing using Nanostructured Materials", ***Nature Nanotechnology,*** **5**, 391–400, 2010.
2. J. Clifford, **G. Konstantatos,** S. Hoogland, L. Levina, E. Sargent, "Fast, Sensitive, Spectrally-Tunable Solution-Processed Photodiodes", ***Nature Nanotechnology,*** **4**, 40-44, 2009.
3. G. Konstantatos, J. Clifford, L. Levina, E. H. Sargent, "Sensitive Solution-processed Visible-Wavelength Photodetectors"**,** ***Nature Photonics,*** **1**, 531-534, 2007.
4. G. Konstantatos, I. Howard, A. Fischer, S. Hoogland, J. Clifford, E.J. D. Klem, L. Levina, E. H. Sargent, "Ultrasensitive solution-cast quantum dot photodetectors", ***Nature,*** **442**, 180-183, 2006. **Highlighted in Financial Times, Wall St. Journal, CBC news etc.**.
5. S. A. McDonald, **G. Konstantatos**, S. Zhang, P. W. Cyr, E. J. D. Klem, L. Levina, E. H. Sargent, "Solution-processed PbS quantum dot infrared photodetectors and photovoltaics", ***Nature Materials,*** **4,** 138-142, 2005.

ICFO-based (as a corresponding lead author), 2009 - present:

1. **Silver telluride colloidal quantum dot infrared photodetectors and image sensors,** Y. Wang, L. Peng, J. Schreier, Y. Bi, A. Black, A. Malla, S. Goossens, G. Konstantatos **Nature Photon.** [Online DOI: 10.1038/s41566-023-01345-3] (2024).
2. **Cation disorder engineering yields $AgBiS_2$ nanocrystals with enhanced optical absorption for efficient ultrathin solar cells,** Y. Wang, S. R. Kavanagh, I.Burgués-Ceballos, A. Walsh, D. Scanlon, G.Konstantatos, **Nature Photon**. **16**, 235-241 (2022).
3. **Solution-processed PbS quantum dot infrared laser with room-temperature tunable emission in the optical telecommunications window,** G. L. Whitworth, M. Dalmases, N. Taghipour, G. Konstantatos, **Nature Photon. 15**, 738-742 (2021).
4. **High efficiency infrared colloidal quantum dot light emitting diodes based via engineering at the supra-nanocrystalline level** S. Pradhan, F. DiStasio, Y. Bi, S. Gupta, S. Christodoulou, A. Stavrinadis, G. Konstantatos **Nature Nanotechnology**, **14**, 72-79 (2019).
5. **Flexible graphene photodetectors for wearable fitness monitoring,** E. O. Polat, et al., **Sci. Adv**. **5**, eaaw7846 (2019).
6. **Current status and technological prospect of photodetectors based on two-dimensional materials** G. Konstantatos **Nature Commun**. **9**, 5266 (2018).
7. **Broadband image sensor array based on graphene–CMOS integration** S. Goossens, G. Navickaite, C. Monasterio, S. Gupta, J. J. Piqueras, R. Pérez, G. Burwell, I. Nikitskiy, T. Lasanta, T. Galán, E. Puma, A. Centeno, A. Pesquera, A. Zurutuza, G. Konstantatos*, F. Koppens* **Nature Photon**. **11**, 366-371 (2017), *corresponding authors, highlighted in La Vanguardia, El Mundo, ABC, CNN Greece etc.
8. **Ultrasensitive all-2D MoS_2 phototransistors enabled by an out-of-plane MoS_2 PN homojunction** N. Huo, G. Konstantatos **Nature Commun**. **8**, 572 (2017).
9. **Integrating an electrically active colloidal quantum dot photodiode with a graphene phototransistor** I. Nikitskiy, S. Goossens, D. Kufer, T. Lasanta, G. Navickaite, F. H. L. Koppens, G. Konstantatos **Nature Commun**. **7**, 11954 (2016).
10. **Solution-processed solar cells based on environmentally friendly AgBiS2 nanocrystals** M. Bernechea, N. Cates Miller, G. Xercavins, D. So, A. Stavrinadis, G. Konstantatos **Nature Photon**. **10**, 521-525 (2016). **Highlighted in El Pais, El Mundo, La Vanguardia etc.**
11. **The role of surface passivation for efficient and photostable PbS quantum dot solar cells** Y. Cao, A. Stavrinadis, T. Lasanta, D. So, G. Konstantatos **Nature Energ**. **1**, 16035 (2016).
12. **Integrated colloidal quantum dot photodetectors with color-tunable plasmonic nanofocusing lenses,** S. L. Diedenhofen, D. Kufer, T. Lasanta, G. Konstantatos, **NPG: Light-Sci. Appl. 4**, e234 (2015).
13. **Heterovalent cation substitutional doping for quantum dot homojunction solar cells** A. Stavrinadis, A. K. Rath, F. P. García de Arquer, S. L. Diedenhofen, C. Magén, L. Martinez, D. So, G. Konstantatos **Nature Commun. 4**, 2981 (2013).
14. **Solution-processed inorganic bulk nano-heterojunctions and their application to solar cells** A. K. Rath, M. Bernechea, L. Martinez, F. P. Garcia de Arquer, J. Osmond, G. Konstantatos **Nature Photon. 6**, 529-534 (2012).
15. **Hybrid graphene–quantum dot phototransistors with ultrahigh gain** G. Konstantatos*, M. Badioli, L. Gaudreau, J. Osmond, M. Bernechea, F. P. Garcia de Arquer, F. Gatti, F. H. L. Koppens* **Nature Nanotechnol. 7**, 363-368 (2012). **Highlighted in The Economist, La Vanguardia, ToVima Science etc.**

INVITED TALKS IN CONFERENCES (selected from over 50 invited talks and seminars given at national and international conferences, workshops and Universities):

- ❖ NanoBioConf, Heraklion Crete, Sept 11-15 2023, Greece
- ❖ MRS Fall 2022 Nov 30 – Dec 5, 2022, Boston, US
- ❖ E-MRS Spring 2019, May 27 to 31, 2019, Nice France
- ❖ HOPV 2018, May 28/31, 2018, Benidorm, Spain.
- ❖ MRS Fall 2017, Nov 30 – Dec 5, 2017, Boston, US
- ❖ Graphene Week 2017, Athens, Greece, Sept24-29, Plenary Talk
- ❖ KAUST conference on Functional Nanomaterials and Devices, March 2015, KAUST, Saudi Arabia.
- ❖ NANOTEXNOLOGY 2015, Thessaloniki, Greece, July 2015.
- ❖ MRS Fall 2014, November 30 - December 5, 2014, Boston.
- ❖ International Conference Solution processed Semiconductor Solar Cells, SSSC14, 2014, Oxford.
- ❖ Nanoscience with Nanocrystals, NANAX6, May 16-23 2014, Bad Hofgastein, Austria.
- ❖ Bayern-Innovative, Next generation of Solar Cells, Erlangen, December 2013.
- ❖ 4th International Conf. from nanomaterials to nanosystems and devices, IC4N, Corfu Greece, 2013.
- ❖ 3rd international conference on semiconductor sensitized and quantum dot solar cells, Granada, 2013.
- ❖ 16th European Conference on Integrated Optics, Sitges, Spain, April 18-20, 2012.
- ❖ E-MRS Fall 2012, Warsaw Poland, Sept. 18-22, 2012.

COMMERCIALIZATION & TECHNOLOGY DEVELOPMENT & TRANSFER ACHIEVEMENTS

- My Research work at University of Toronto led to 5 patent families and the **creation of a spin-off, Invisage Technologies**, whose mission has been to revolutionize the image sensor market. **Invisage has received multiple tech-awards and over 100M$ in funding. Invisage was then bought-up by Apple Inc.**
- At ICFO in July 2021, **I co-founded a spin-off**, called Qurv Technologies, for which I act as a **member of the board of directors** and **scientific advisor**. Qurv's mission is to revolutionize machine vision enabled by scalable and low-cost image sensor technologies based on quantum and nanoscale materials (quantum dots and 2D materials).

PATENTS

Granted Patents & licensed to Invisage Technologies (now Apple)

1. "Three-dimensional bicontinuous heterostructures, a method of making them, and their application in quantum dot-polymer nanocomposite photodetectors and photovoltaics", US 8,115,232 B2,
2. "Electronic and Optoelectronic devices with quantum dot films", US 7,742,322 B2, US 8,023,306 B2.
3. "Quantum dot optical devices with enhanced gain and sensitivity and method of making same", US 8,102,693 B2, US 7,773,404 B2, EP1929531.
4. "Methods of making quantum dot films", US 7,746,681 B2.

5. "Photodetectors and photovoltaics based on semiconductor nanocrystals", US 8,022,391.

Granted Patents and filed Applications (at ICFO)

6. G. Konstantatos, F. Koppens; "Optoelectronic platform with carbon based conductor and quantum dots and transistor comprising such a platform"; PCT/EP2012/064979; 11-08-02 (**Granted in SP, US, China, Korea and Japan**).
7. G. Konstantatos, A.K. Rath, L. Martínez Montblanch, M. Bernechea Navarro; "Photovoltaic nanocomposite comprising solution processed inorganic bulk nano-heterojunctions, solar cell and photodiode devices comprising the nanocomposite"; US13/442,080; 12-04-09 **(Granted).**
8. G. Konstantatos, F. Koppens, S. Goossens, J.J. Piqueras, R. Pérez; "Image sensor, optoelectronic system comprising said image sensor, and method for manufacturing said image sensor" EP15171314.6; 15-06-10. **(Granted)**
9. G. Konstantatos, F. Koppens, S. Goossens, J.J. Piqueras; "Image sensor with non-local readout circuit and optoelectronic device comprising said image sensor""EP15179484; 15-08-03. **(Granted)**.
10. G. Konstantatos, F. Koppens, D. Kufer, I. Nikitskiy; "Optolelectronic apparatus and fabrication method of the same"; EP14177172.5; 14-07-15 **(Granted)**.
11. G. Konstantatos, M. Bernechea, N.C. Miller; "A photovoltaic material and use of it in a photovoltaic device" EP15176300; 15-07-10 **(Granted).**
12. Romain Quidant, Gerasimos Konstantatos, Alexander Powell, Alexandros Stavrinadis, Jianjun Wang "Method for enhanced sintering by optical resonances in nanoparticles" European priority patent number: EP17382197.6 Date: 11-04-17 **(Granted).**
13. Alexandros Stavrinadis, Alexander Powell, Gerasimos Konstantatos, Romain Quidant "A method, a system and a package for producing an electrically conductive composite" European priority patent number: EP18382355.8 Date: 24-05-2018.
14. Alexandros Stavrinadis, Alexander Powell, Gerasimos Konstantatos, Romain Quidant, "A method, a system and a package for producing a three dimensional object, and a sensing device comprising a 3d object manufactured with the method" European priority patent number: EP18382001.8 Date: 04-01-2018 **(Granted)**.
15. Romain Quidant, Gerasimos Konstantatos, Lluís Torner PCT priority patent number: PCT/US2015/057185 Date: 23-10-15.
16. Alexandros Stavrinadis, Alexander Powell, Gerasimos Konstantatos, Romain Quidant, "A method and a system for self-repairing an object" European priority patent number: EP18382424 Date: 14-06-18 **(Granted)**.
17. Gerasimos Konstantatos, Santanu Pradhan, "A light emitting device, an optical spectrometer, and a down-converting film for a light emitting device", European priority patent number: EP18382629 Date: 29-08-18 **(Granted).**
18. Alexandros Stavrinadis, Alexander Powell, Gerasimos Konstantatos, Romain Quidant, "A method, a system and a package for producing a magnetic composite" European priority patent number: EP18382569 Date: 27-07-18.
19. Gerasimos Konstantatos, Frank Henricus Louis Koppens, Augustinus Marius Goossens, "An optoelectronic, a reading-out method, and a uses of the optoelectronic apparatus", EP18382901.

20. Carles Monasterio Balcells, Gerasimos Konstantatos, Frank Henricus Louis Koppens, Augustinus Marius Goossens, "An electronic device and a method for suppressing noise for an electronic device", EP19382025.5, **(Granted)**.
21. Gerasimos Konstantatos, Frank Henricus Louis Koppens, Augustinus Marius Goossens, "A system comprising an electronic apparatus, and an electronic apparatus", EP19382066.9.
22. Gerasimos Konstantatos, Frank Henricus Louis Koppens, Augustinus Marius Goossens, "Charge sensing device with readout of signal by detecting a change of capacitance of combined gate and quantum capacitance compared to a reference capacitance", EP19382068.5.
23. Gerasimos Konstantatos, Onur Özdemir, Iñigo Ramiro González, "A method for obtaining an n-type doped metal chalcogenide quantum dot solid-state film, and an optoelectronic device comprising the obtained film", EP19382326.7 **(Granted)**.
24. Gerasimos Konstantatos, Sotirios Christodoulou, "Methods for obtaining an N-type doped metal chalcogenide quantum dot solid-state element with optical gain and a light emitter including the element, and the obtained element and light emitter", EP19382418.2 **(Granted)**.
25. Gerasimos Konstantatos, Yongjie Wang, "A quantum dot population comprising silver chalcogenide quantum dots, a method for obtaining the quantum dot population and an optoelectronic device comprising the quantum dot population", EP23382511.6.
26. Gerasimos Konstantatos, Yongjie Wang, "a photodetector device", EP23382714.
27. Gerasimos Konstantatos, Lucheng Peng, "A quantum dot population comprising INSB quantum dots, a method for obtaining the quantum dot population and an optoelectronic device comprising the quantum dot population", EP23383278.1.

FULL PUBLICATION LIST

BOOKS:

1) **Colloidal quantum dot optoelectronics and photovoltaics**, **Cambridge University Press (2013)**, **G. Konstantatos**, E. H. Sargent (editors).

PUBLICATIONS

@ ICFO (**selection** of peer-reviewed Journal Publications at ICFO **as a corresponding author**):

1. **Silver telluride colloidal quantum dot infrared photodetectors and image sensors,** Y. Wang, L. Peng, J. Schreier, Y. Bi, A. Black, A. Malla, S. Goossens, G. Konstantatos Nat. Photon. [Online DOI: 10.1038/s41566-023-01345-3] (2024)
2. **Mixed-cation vacancy-ordered perovskites ($Cs_2Ti_{1-x}Sn_XX_6$; X = I or Br): low-temperature miscibility, additivity, and tunable stability**, S. M. Liga, S. R. Kavanagh, A. Walsh, D. O. Scanlon, G. Konstantatos, J. Phys. Chem. C **127**, 21399–21409 (2023)

3. **Ultrafast cascade charge transfer in multibandgap colloidal quantum dot solids enables threshold reduction for optical gain and stimulated emission**, N. Taghipour, M. Dalmases, G. L. Whitworth, Y. Wang, G. Konstantatos, Nano Lett. **23**, 8637–8642 (2023)
4. **Cation-disorder engineering promotes efficient charge-carrier transport in $AgBis_2$ nanocrystal films**, M. Righetto, Y. Wang, K. A. Elmestekawy, C. Q. Xia, M. B. Johnston, G. Konstantatos, L. M. Herz, Adv. Mat. 2305009 (2023)
5. **Semitransparent image sensors for eye-tracking applications,** G. Mercier, E. O. Polat, S. Shi, S. Gupta, G. Konstantatos, S. Goossens, F. H. L. Koppens, ACS Photonics **10**, 2994–3000 (2023)
6. **Stabilization of environmentally-friendly Cs2TiBr6 perovskite nanocrystals with SnBr4** S. M. Liga, Y. Wang, G. Konstantatos, Chem. Commun. **59**, 5567 (2023)
7. **Frenkel excitons in vacancy-ordered titanium halide perovskites (Cs_2TiX_6),** S. R. Kavanagh, C. N. Savory, S. M. Liga, G. Konstantatos, A. Walsh, D. O. Scanlon, J. Phys. Chem. Lett. **13**, 10965-10975 (2022)
8. **Colloidal quantum dot infrared lasers featuring sub-single-exciton threshold and very high gain,** N. Taghipour, M. Dalmases, G. L. Whitworth, M. Dosil, A. Othonos, S. Christodoulou, S. M. Liga, G. Konstantatos, Adv. Mat. **2022**, 2207678 (2022)
9. **Engineering the polarization sensitivity in all-2D photodetectors composed of semimetal $MoTe_2$ and semiconductor WS_2**, J. Wu, D. Luo, P. Wen, X. Han, C. Wang, H. Yu, W. Gao,X. Liu, G. Konstantatos, J. Li, N. Huo, Adv. Opt. Mat. **10**, 2201902 (2022)
10. **Ag-refined kesterite in superstrate solar cell configuration with 9.7% power conversion efficiency,** Z. Wang, Y. Wang, N. Taghipour, L. Peng, G. Konstantatos, Adv. Funct. Mat. **32**, 2205948 (2022)
11. **Colloidal quantum dot light emitting diodes at telecom wavelength with 18% quantum efficiency and over 1 MHz bandwidth,** S. Pradhan, M. Dalmases, N. Taghipour, B.Kundu, G. Konstantatos, Adv. Sci. **9**, 2200637 (2022)
12. **Environmentally friendly $AgBiS_2$ nanocrystal inks for efficient solar cells employing green solvent processing,** Y. Wang, L. Peng, Z. Wang, G. Konstantatos, Adv. Ener. Mat. **12**, 2200700 (2022)
13. **Ultra-thin infrared optical gain medium and optically-pumped stimulated emission in PbS colloidal quantum dot LEDs,** Nima Taghipour, Ibrahim Tanriover, Mariona Dalmases, Guy L. Whitworth, Christina Graham, Avijit Saha, Onur Özdemir, Biswajit Kundu, Valerio Pruneri, Koray Aydin, Gerasimos Konstantatos, Adv. Funct. Mat. **32**, 2200832 (2022)
14. **Mixed $AgBiS_2$ nanocrystals for photovoltaics and photodetectors,** I. Burgués-Ceballos, Y. Wang, G. Konstantatos, Nanoscale **14**, 4987 (2022)
15. **Cation disorder engineering yields $AgBiS_2$ nanocrystals with enhanced optical absorption for efficient ultrathin solar cells,** Y. Wang, S. R. Kavanagh, I.Burgués-Ceballos, A. Walsh, D. Scanlon, G.Konstantatos, Nat. Photon. **16**, 235-241 (2022)
16. **Visible-blind ZnMgO colloidal quantum dot downconverters expand silicon CMOS sensors spectral coverage into ultraviolet and enable UV-band discrimination,** A. Saha, G. Kumar, S. Pradhan, G. Dash, R. Viswanatha, G. Konstantatos, Adv. Mat. **34**, 2109498 (2022)

17. **Highly efficient, ultrathin, Cd-free kesterite solar cells in superstrate configuration enabled by band level tuning via Ag incorporation,** Z. Wang, Y. Wang, G. Konstantatos, Nano Energy **94**, 106898 (2021)
18. **Low-threshold, highly stable colloidal quantum dot short-wave infrared laser enabled by suppression of trap-assisted Auger recombination,** N. Taghipour, G. L. Whitworth, A. Othonos, M. Dalmases, S. Pradhan, Y. Wang, G. Kumar, G. Konstantatos, Adv. Mater. **34**, 2107532 (2021)
19. **Solution-processed PbS quantum dot infrared laser with room-temperature tunable emission in the optical telecommunications window,** G. L. Whitworth, M. Dalmases, N. Taghipour, G. Konstantatos, Nature Photon. **15**, 738-742 (2021)
20. **Hybrid 2D-QD MoS_2–PbSe quantum dot broadband photodetectors with high-sensitivity and room-temperature operation at 2.5 µm**, B. Kundu, O. Özdemir, M. Dalmases, G. Kumar, G. Konstantatos, Adv. Opt. Mater. **2021**, 2101378 (2021)
21. **$AgBiSe_2$ colloidal nanocrystals for use in solar cells,** M. Z. Akgul, G. Konstantatos, ACS Appl. Nano Mater. **4**, 2887-2894 (2021)
22. **Highly transparent and conductive ITO substrates for near infrared applications**, R. A. Maniyara, C. Graham, B. Paulillo, Y. Bi, Y. Chen, G. Herranz, D. E. Baker, P.Mazumder, G. Konstantatos, V. Pruneri, APL Materials **9**, 021121 (2021)
23. **Ag_2ZnSnS_4–ZnS core–shell colloidal quantum dots: a near-infrared luminescent material based on environmentally friendly elements**, A. Saha, G. Konstantatos, J. Mater. Chem. C **9**, 5682-5688 (2020)
24. **Colloidal synthesis of lead-free $Cs_2TiBr_{6-x}I_x$ perovskite nanocrystals**, S. M. Liga, G. Konstantatos, J. Mater. Chem. C **9**, 11098-11103 (2021)
25. **Solid-state thin-film broadband short-wave infrared light emitters**, S. Pradhan, M. Dalmases, G. Konstantatos, Adv. Mater. **2020**, 2003830 (2020)
26. **Single-exciton gain and stimulated emission across the infrared telecom band from robust heavily-doped PbS colloidal quantum dots,** S. Christodoulou, I. Ramiro, A. Othonos, A. Figueroba, M. Dalmases, O. Ozdemir, S. Pradhan, G. Itskos, G. Konstantatos, Nano Lett. **20**, 5909–5915 (2020)
27. **Highly efficient, bright, and stable colloidal quantum dot short-wave infrared light-emitting diodes**, S. Pradhan, M. Dalmases, A. Baspinar, G. Konstantatos, Adv. Funct. Mater. **30** (2020)
28. **Colloidal AgBiS2 nanocrystals with reduced recombination yield 6.4% power conversion efficiency in solution-processed solar cells,** I. Burgués-Ceballos, Y. Wang, M. Z. Akgul, G. Konstantatos, Nano Energy **75**, 104961 (2020)
29. **Size and temperature dependent intraband optical properties of heavily n-doped PbS colloidal quantum dot solid-state films,** I. Ramiro, B. Kundu, M. Dalmases, O. Ozdemir, M. Pedrosa, G. Konstantatos, ACS Nano **14**, 6, 7161–7169 (2020)
30. **On-demand activation of photochromic nanoheaters for high color purity 3D printing,** A. W. Powell, A. Stavrinadis, S. Christodoulou, R. Quidant, G. Konstantatos, Nano Lett. **20**, 3485-3491 (2020)
31. **Low-cost RoHS compliant solution processed photovoltaics enabled by ambient condition synthesis of AgBiS2 nanocrystals,** M. Z. Akgul, A.

Figueroba, S. Pradhan, Y. Bi, G. Konstantatos, ACS Photonics **7**, 588-595 (2020)

32. **Cation disorder and local structural distortions in AgxBi1–xS2 nanoparticles,** J. Kopula Kesavan, F. d'Acapito, P. Scardi, A. Stavrinadis, M. Z. Akgul, I. Burgués-Ceballos, G. Konstantatos, F. Boscherini, Nanomaterials **10**, 316 (2020)
33. **Ag2ZnSnS4 nanocrystals expand the availability of RoHS compliant colloidal quantum dots,** A. Saha, A. Figueroba, G. Konstantatos, Chem. Mater. **32**, 2148-2155 (2020)
34. **Mid- and long-wave infrared optoelectronics via intraband transitions in PbS colloidal quantum dots,** I. Ramiro, O. Özdemir, S. Christodoulou, S. Gupta, M. Dalmases, I. Torre, G. Konstantatos, Nano Lett. **20**, 1003-1008 (2020)
35. **Room-temperature direct synthesis of semi-conductive PbS nanocrystal inks for optoelectronic applications,** Y. Wang et al., Nature Commun. **10**, 5136 (2019)
36. **High sensitivity hybrid PbS CQD-TMDC photodetectors up to 2 µm,** O. Özdemir, I. Ramiro, S. Gupta, G. Konstantatos, ACS Photonics **6**, 2381-2386 (2019)
37. **Flexible graphene photodetectors for wearable fitness monitoring,** E. O. Polat, et al., Sci. Adv. **5**, eaaw7846 (2019)
38. **Origin of the below-bandgap turn-on voltage in light-emitting diodes and the high V_{OC} in solar cells comprising colloidal quantum dots,** S. Pradhan, M. Dalmases, G. Konstantatos, J. Phys. Chem. Lett. **10**, 3029-3034 (2019)
39. **Engineering vacancies in Bi_2S_3 yielding sub-bandgap photoresponse and highly sensitive short-wave infrared photodetectors,** N. Huo, A. Figueroba, Y. Yang, S. Christodoulou, A. Stavrinadis, C. Magén, G. Konstantatos, Adv. Opt. Mater. **7**, 1900258 (2019)
40. **High-efficiency colloidal quantum dot infrared light-emitting diodes via engineering at the supra-nanocrystalline level,** S. Pradhan, F. Di Stasio, Y. Bi, S. Gupta, S. Christodoulou, A. Stavrinadis, G. Konstantatos, Nature Nanotechnol. **14**, 72-79 (2019)
41. **Current status and technological prospect of photodetectors based on two-dimensional materials** G. Konstantatos Nature Commun. **9**, 5266 (2018)
42. **High-efficiency light-emitting diodes based on formamidinium lead bromide nanocrystals and solution processed transport layers** F. Di Stasio, I. Ramiro, Y. Bi, S. Christodoulou, A. Stavrinadis, G. Konstantatos Chem. Mater. **30**, 6231-6235 (2018)
43. **Recent progress and future prospects of 2D-based photodetectors** N. Huo, G. Konstantatos Adv. Mater. **1801164**, 1-27 (2018) **(Invited Review)**
44. **High carrier mobility in monolayer CVD-grown MoS2 through phonon suppression** N. Huo, Y. Yang, Y. Wu, X. Zhang, S. T. Pantelides, G. Konstantatos Nanoscale **10**, 15071-15077 (2018)
45. **White and brightly colored 3D printing based on resonant photothermal sensitizers** A. W. Powell, A. Stavrinadis, I. de Miguel, G. Konstantatos, R. Quidant Nano Lett. [Online DOI: 10.1021/acs.nanolett.8b01164] (2018)
46. **Colloidal Quantum Dot Tandem Solar Cells Using Chemical Vapor Deposited Graphene as an Atomically Thin Intermediate Recombination**

Layer Y. Bi, S. Pradhan, M. Z. Akgul, S. Gupta, A. Stavrinadis, J. Wang, G. Konstantatos ACS Energy Lett. **0**, (2017)

47. **High open circuit voltage solar cells based on bright mixed-halide $CsPbBrI_2$ Perovskite nanocrystals synthesized in ambient air conditions** S. Christodoulou, F. Di Stasio, S. Pradhan, A. Stavrinadis, G. Konstantatos J. Phys. Chem. C **122**, 7621-7626 (2018)
48. **Infrared solution-processed quantum dot solar cells reaching external quantum efficiency of 80% at 1.35 µm and J_{sc} in excess of 34 mA cm^{-2}** Y. Bi, S. Pradhan, S. Gupta, M. Z. Akgul, A. Stavrinadis, G. Konstantatos Adv. Mater. **30**, 1704928 (2018)
49. **Low-temperature colloidal synthesis of CuBiS2 nanocrystals for optoelectronic devices** J. Wang, M. Z. Akgul, Y. Bi, S. Christodoulou, G. Konstantatos J. Mater. Chem. A **5**, 24621-24625 (2017)
50. **Ultrasensitive all-2D MoS_2 phototransistors enabled by an out-of-plane MoS_2 PN homojunction** N. Huo, G. Konstantatos Nature Commun. **8**, 572 (2017)
51. **Near-unity photoluminescence quantum yield in CsPbBr3 nanocrystal solid-state films via post-synthesis treatment with lead bromide** F. Di Stasio, S. Christodoulou, N. Huo, G. Konstantatos Chem. Mater. **29**, 7663-7667 (2017)
52. **Reducing interface recombination through mixed nanocrystal interlayers in PbS quantum dot solar cells** S. Pradhan, A. Stavrinadis, S. Gupta, G. Konstantatos ACS Appl. Mater. Interfaces **9**, 27390-27395 (2017)
53. **Matildite contact with media: First-principles study of AgBiS2 surfaces and nanoparticle morphology** F. Viñes, G. Konstantatos, F. Illas J. Phys. Chem. B [online DOI: 10.1021/acs.jpcb.7b03967] (2017)
54. **Broadband image sensor array based on graphene–CMOS integration** S. Goossens, G. Navickaite, C. Monasterio, S. Gupta, J. J. Piqueras, R. Pérez, G. Burwell, I. Nikitskiy, T. Lasanta, T. Galán, E. Puma, A. Centeno, A. Pesquera, A. Zurutuza, G. Konstantatos, F. Koppens Nature Photon. **11**, 366-371 (2017)
55. **Breaking the open-circuit voltage deficit floor in PbS quantum dot solar cells through synergistic ligand and architecture engineering** S. Pradhan, A. Stavrinadis, S. Gupta, S. Christodoulou, G. Konstantatos ACS Energy Lett. **2**, 1444-1449 (2017)
56. **Trap-state suppression and improved charge transport in PbS quantum dot solar cells with synergistic mixed-ligand treatments** S. Pradhan, A. Stavrinadis, S. Gupta, Y. Bi, F. Di Stasio, G. Konstantatos Small **13**, 1700598 (2017)
57. **MoS_2–HgTe quantum dot hybrid photodetectors beyond 2 µm** N. Huo, S. Gupta, G. Konstantatos Adv. Mater. **29**, 1606576 (2017)
58. **Suppressing deep traps in PbS colloidal quantum dots via facile iodide substitutional doping for solar cells with efficiency >10%** A. Stavrinadis, S. Pradhan, P. Papagiorgis, G. Itskos, G. Konstantatos ACS Energy Lett. **2**, 739-744 (2017)
59. **Ultrahigh carrier mobility achieved in photoresponsive hybrid perovskite films via coupling with single-walled carbon nanotubes** F. Li, H. Wang, D. Kufer, L. Liang, W. Yu, E. Alarousu, C. Ma, Y. Li, Z. Liu, C. Liu, N. Wei, F. Wang, L. Chen, O. F. Mohammed, A. Fratalocchi, X. Liu, G. Konstantatos, T. Wu Adv. Mater. **29**, 1602432 (2017)

60. **Matildite versus schapbachite: First-principles investigation of the origin of photoactivity in $AgBiS_2$** F. Viñes, M. Bernechea, G. Konstantatos, F. Illas Phys. Rev. B **94**, 235203 (2016)
61. **Photo-FETs: phototransistors enabled by 2D and 0D nanomaterials** D. Kufer, G. Konstantatos ACS Photonics **3**, 2197-2210 (2016) **(Invited Review)**
62. **Solid-state colloidal CuInS2 quantum dot solar cells enabled by bulk heterojunctions** D. So, S. Pradhan, G. Konstantatos Nanoscale **8**, 16776 (2016)
63. **Low-temperature, solution-based sulfurization and necking of PbS CQD films** A. Stavrinadis, D. So,. G. Konstantatos **J. Phys. Chem. C 120**, 20315-20322 (2016)
64. **Aliovalent doping in colloidal quantum dots and its manifestation on their optical properties: surface attachment versus structural incorporation** A.Stavrinadis, J. S. P. Cresi, F. D\'Acapito, C. Magen, F. Boscherini, G. Konstantatos **Chem. Mater**. **28**, 5384-5393 (2016)
65. **Solution-processed solar cells based on environmentally friendly AgBiS2 nanocrystals** M. Bernechea, N. Cates Miller, G. Xercavins, D. So, A. Stavrinadis, G. Konstantatos Nature Photon. **10**, 521-525 (2016)
66. **Integrating an electrically active colloidal quantum dot photodiode with a graphene phototransistor** I. Nikitskiy, S. Goossens, D. Kufer, T. Lasanta, G. Navickaite, F. H. L. Koppens, G. Konstantatos **Nature Commun**. **7**, 11954 (2016)
67. **Interface engineering in hybrid quantum dot – 2D phototransistors** D. Kufer, T. Lasanta, M. Bernechea, F. H. L. Koppens, G. Konstantatos **ACS Photon**. **3**, 1324-1330 (2016)
68. **The role of surface passivation for efficient and photostable PbS quantum dot solar cells** Y. Cao, A. Stavrinadis, T. Lasanta, D. So, G. Konstantatos **Nature Energ**. **1**, 16035 (2016)
69. **Understanding light trapping by resonant coupling to guided modes and the importance of the mode profile,** F. J. Beck, A. Stavrinadis, T. Lasanta, J.-P. Szczepanick, G. Konstantatos, **Opt. Express** 24, 759-772 (2016)
70. **The influence of doping on the optoelectronic properties of PbS colloidal quantum dot solids,** P. Papagiorgis, A. Stavrinadis, A. Othonos, G. Konstantatos, G. Itskos, **Sci. Rep.** 5, 18735 (2016)
71. **Strategies for controlled electronic doping of colloidal quantum dot solids** A. Stavrinadis, G. Konstantatos, **ChemPhysChem** [online DOI: 10.1002/cphc.201500834] (2015)
72. **Thiol-free synthesized copper indium sulfide nanocrystals as optoelectronic quantum dot solids**, D. So, G. Konstantatos, **Chem. Mater.** 27, 8424-8432 (2015)
73. **Highly sensitive, encapsulated MoS2 photodetector with gate controllable gain and speed,** D. Kufer, G. Konstantatos, **Nano Lett.** 15, 7307-7313 (2015)
74. **Size and bandgap tunability in Bi_2S_3 colloidal nanocrystals and its effect in solution processed solar cells,** M. Bernechea, Y. Cao, G. Konstantatos, **J. Mater. Chem. A** 3, 20642-20648 (2015)
75. **A highly sensitive pyroresistive all-organic infrared bolometer** R. Pfattner, V. Lebedev, E. Laukhina, S. Chaitanya Kumar, A. Esteban-Martin, V. Ramaiah-Badarla, M. Ebrahim-Zadeh, F. P. García de Arquer, G. Konstantatos, V. Laukhin, C. Rovira, J. Veciana, **Adv. Electron. Mater**. 1, 201500090 (2015)

76. **Large-area plasmonic-crystal hot-electron based photodetectors**
F. P. Garcia de Arquer, A. Mihi, G. Konstantatos, **ACS Photonics** 2, 950-957(2015)
77. **Metal-insulator-semiconductor heterostructures for plasmonic hot-carrier optoelectronics**, F. P. García de Arquer, G. Konstantatos, **Opt. Express** 23, 14715-14723 (2015)
78. **Solution processed bismuth sulfide nanowire array core/silver sulfide shell solar cells**
Y. Cao, M. Bernechea, A. Maclachlan, V. Zardetto, M. Creatore, S. A. Haque, G. Konstantatos, **Chem. Mater.** 27, 3700–3706 (2015)
79. **Science and technology roadmap for graphene, related two-dimensional crystals, and hybrid systems**, A. C. Ferrari et al., **Nanoscale 7**, 4587-5062 (2015)
80. **Tailoring the Electronic Properties of Colloidal Quantum Dots in Metal–Semiconductor Nanocomposites for High Performance Photodetectors,** F. Pelayo García de Arquer, Tania Lasanta, María Bernechea and Gerasimos Konstantatos, Small **11**, 2636-2641 (2015)
81. **Prospects of nanoscience with nanocrystals**
M. V. Kovalenko , L. Manna, A. Cabot, Z. Hens, D. V. Talapin, C. R. Kagan, V. I. Klimov, A. L. Rogach, P. Reiss, D. J. Milliron, P. Guyot-Sionnnest, G. Konstantatos, W. J. Parak, T. Hyeon, B. A. Korgel, C. B. Murray, W. Heiss ACS Nano **9**, 1012-1057 (2015) **(Invited Review)**
82. **Integrated colloidal quantum dot photodetectors with color-tunable plasmonic nanofocusing lenses,** S. L. Diedenhofen, D. Kufer, T. Lasanta, G. Konstantatos
NPG: Light-Sci. Appl. 4, e234 (2015)
83. **Molecular interfaces for plasmonic hot electron photovoltaics**
F. P. García de Arquer, A. Mihi, G. Konstantatos, **Nanoscale 7**, 2281-2288 (2015)
84. **Hybrid 2D–0D MoS2–PbS quantum dot photodetectors**
D. Kufer, I. Nikitskiy, T. Lasanta, G. Navickaite, F. H. L. Koppens, G. Konstantatos
Adv. Mat. [online DOI: 10.1002/adma.201402471] (2014)
85. **Surface plasmon polariton couplers for light trapping in thin-film absorbers and their application to colloidal quantum dot optoelectronics**
F. J. Beck, A. Stavrinadis, S. L. Diedenhofen, T. Lasanta, G Konstantatos
ACS Photonics 1, 1197–1205 (2014)
86. **Improved electronic coupling in hybrid organic-inorganic nanocomposites employing thiol-functionalized P3HT and non-toxic bismuth sulfide nanocrystals**
L. Martinez, S. Higuchi, A. Maclachlan, A. Stavrinadis, N. C. Miller, S. L. Diedenhofen, M. Bernechea, S. Sweetnam, J. Nelson, S. A. Haque, K. Tajima, G. Konstantatos
Nanoscale 6, 10018-10026 (2014)
87. **Remote trap passivation in colloidal quantum dot bulk nano-heterojunctions and its effect in solution-processed solar cells**
A. K. Rath, F. P. Garcia de Arquer, A. Stavrinadis, T. Lasanta, M. Bernechea, S. L. Diedenhofen, G. Konstantatos
Adv. Mater. 26, 4741-4747 (2014)

88. **Plasmonic schottky nanojunctions for tailoring the photogeneration profile in thin film solar cells**
    F. J. Beck, T. Lasanta, G. Konstantatos
    Adv. Opt. Mater. 2, 493-500 (2014)
89. **Determination of carrier lifetime and mobility in colloidal quantum dot films via impedance spectroscopy**
    A. K. Rath, T. Lasanta, M. Bernechea, S. L. Diedenhofen, G. Konstantatos
    Appl. Phys. Lett. 104, 063504 (2014)
90. **Imprinted electrodes for enhanced light trapping in solution processed solar cells**
    A. Mihi, F. J. Beck, T. Lasanta, A. K. Rath, G. Konstantatos
    Adv. Mat. 26, 443-448 (2014)
91. **Heterovalent cation substitutional doping for quantum dot homojunction solar cells**
    A. Stavrinadis, A. K. Rath, F. P. García de Arquer, S. L. Diedenhofen, C. Magén, L. Martinez, D. So, G. Konstantatos
    Nature Commun. 4, 2981 (2013)
92. **Photoelectric energy conversion of plasmon-generated hot carriers in metal-insulator-semiconductor structures**
    F. P. García de Arquer, A. Mihi, D. Kufer, G. Konstantatos
    ACSnano 7, 3581-3588 (2013)
93. **Hybrid solution-processed bulk heterojunction solar cells based on bismuth sulfide nanocrystals**
    L. Martinez, A. Stavrinadis, S. Higuchi, S. L. Diedenhofen, M. Bernechea, K. Tajima, G. Konstantatos
    Phys. Chem. Chem. Phys. 15, 5482-5487 (2013)
94. **Coupling resonant modes of embedded dielectric microspheres in solution-processed solar cells**
    A. Mihi, M. Bernechea, D. Kufer, G. Konstantatos
    Adv. Opt. Mater. 1, 139-143 (2013)
95. **Size- and temperature-dependent carrier dynamics in oleic acid capped PbS quantum dots**
    P. Andreakou, M. Brossard, C. Li, M. Bernechea, G. Konstantatos, P. G. Lagoudakis
    J. Phys. Chem. C 117, 1887-1892 (2013)
96. **Electrical effects of metal nanoparticles embedded in ultra-thin colloidal quantum dot films**
    F. J. Beck, F. P. Garcia de Arquer, M. Bernechea, G. Konstantatos
    Appl. Phys. Lett. 101, 041103 (2012)
97. **Solution-processed inorganic bulk nano-heterojunctions and their application to solar cells**
    A. K. Rath, M. Bernechea, L. Martinez, F. P. Garcia de Arquer, J. Osmond, G. Konstantatos
    Nature Photon. 6, 529-534 (2012)
98. **Hybrid graphene–quantum dot phototransistors with ultrahigh gain**
    G. Konstantatos, M. Badioli, L. Gaudreau, J. Osmond, M. Bernechea, F. P. Garcia de Arquer, F. Gatti, F. H. L. Koppens
    Nature Nanotechnol. 7, 363-368 (2012)
99. **Plasmonic light trapping leads to responsivity increase in colloidal quantum dot photodetectors**

F. Pelayo García de Arquer, F. J. Beck, M. Bernechea, G. Konstantatos
Appl. Phys. Lett. 100, 043101 (2012)

100. Near IR-sensitive, non-toxic, polymer/nanocrystal solar cells employing bismuth sulfide as the electron acceptor
L. Martinez, M. Bernechea, F. P. García de Arquer, G. Konstantatos
Adv. Energ. Mat. 23, 1029-1035 (2011)

101. Absorption enhancement in solution processed metal-semiconductor nanocomposites
F. P. García de Arquer, F. J. Beck, G. Konstantatos
Opt. Express 19, 21038-21049 (2011)

102. Solution-processed heterojunction solar cells based on p-type PbS quantum dots and n-type bismuth sulfide nanocrystals
A. K. Rath, M. Bernechea, L. Martinez, G. Konstantatos
Adv. Mat. 23, 3712-3717 (2011)

PRE-ICFO (M.A.Sc and Ph.D studies at UofT)

103. Nanostructured materials for photon detection
G. Konstantatos, E. H. Sargent
Nature Nanotechnol. 5, 391–400 (2010)

104. Depleted-heterojunction colloidal quantum dot solar cells
A. G. Pattantyus-Abraham, I. J. Kramer, A. R. Barkhouse, X. Wang, G. Konstantatos, R. Debnath, L. Levina, I. Raabe, M. K. Nazeeruddin, M Grätzel, E. H. Sargent
ACSnano 4, 3374–3380 (2010)

***105.* Solution-processed quantum dot photodetectors**
G. Konstantatos, E. H. Sargent
Proc. IEEE 97, 1666-1683 (2009)

106. Jiang Tang, **Gerasimos Konstantatos,** Sean Hinds, Stefan Myrskog, Andras G. Pattantyus-Abraham, Jason Clifford and Edward H. Sargent, "Heavy-Metal-Free Solution-Processed Nanoparticle-Based Photodetectors: Doping of Intrinsic Vacancies Enables Engineering of Sensitivity and Speed", ***ACS NANO,*** *3, 331-338, 2009* .

107. Jason Clifford, **Gerasimos Konstantatos,** Sjoerd Hoogland, Larissa Levina, Edward Sargent, "Fast, Sensitive, Spectrally-Tunable Solution-Processed Photodiodes", ***Nature Nanotechnology****, 4, 40-44, 2009.*

108. **Gerasimos Konstantatos**, Larissa Levina, Edward H. Sargent, "Sensitive Solution-Processed Bi_2S_3 Nanocrystalline Photodetectors", ***Nano Letters,*** *8, 4002-4006, 2008.*

109. Sean Hinds, Larissa Levina, Ethan J.D. Klem, **Gerasimos Konstantatos,** Vlad Sukhovatkin, and Edward H. Sargent, "Smooth-morphology (< 1% roughness) ultrasensitive solution-processed photodetectors", ***Advanced Materials****, 20, 4398-4042, 2008.*

110. **Gerasimos Konstantatos**, Larissa Levina, Armin Fischer, Edward H. Sargent, "Engineering the Temporal Response of Photonconductive Photodetectors via Selective Introduction of Surface Trap States", ***Nano Letters****, 8, 1446-1450, 2008.*

111. **Gerasimos Konstantatos**, Edward H. Sargent, "PbS colloidal quantum dot photoconductive photodetectors: transport, traps and gain", ***Applied Physics Letters****, 91, 173505, 2007.*

112. **Gerasimos Konstantatos**, Jason Clifford, Larissa Levina, Edward H. Sargent, "Sensitive Solution-processed Visible-Wavelength Photodetectors"**,** ***Nature Photonics****, Vol 1 531-534, 2007.*

113. **Gerasimos Konstantatos**, Ian Howard, Armin Fischer, Sjoerd Hoogland, Jason Clifford, Ethan J. D. Klem, Larissa Levina, Edward H. Sargent, "Ultrasensitive solution-cast quantum dot photodetectors", ***Nature****, Vol 442, 180-183, 2006.*

114. S. Zhang, P. W. Cyr, S. A. McDonald, **G. Konstantatos**, and E. H. Sargent, "Enhanced infrared photovoltaic efficiency in PbS nanocrystal/semiconducting polymer composites: 600-fold increase in maximum power output via control of the ligand barrier", ***Applied Physics Letters****, vol. 87, no. 23, pp.1-3, 2005.*

115. **G. Konstantatos**, C. J. Huang, L. Levina, Z. H. Lu, E. H. Sargent, "Efficient Infrared Electroluminescent Devices using Solution-Processed Colloidal Quantum Dots", ***Advanced Functional Materials****, 15 (11), pp. 1865-1869, 2005.*

116. S. A. McDonald, **G. Konstantatos**, S. Zhang, P. W. Cyr, E. J. D. Klem, L. Levina, E. H. Sargent, "Solution-processed PbS quantum dot infrared photodetectors and photovoltaics", ***Nature Materials****, vol. 4, no. 2, pp. 138-142, 2005.*

117. L. Bakueva, **G. Konstantatos**, S. Musikhin, H. E. Ruda, A. Shik, "Negative capacitance in polymer-nanocrystal composites", ***Applied Physics Letters****, vol. 85, no. 16, pp.3567-3569, 2004.*

118. L. Bakueva, **G. Konstantatos**, L. Levina, S. Musikhin, E. H. Sargent, "Luminescence from Processible Quantum Dot – Polymer Light Emitters 1100-1600 nm: Tailoring Spectral Width and Shape"**,** ***Applied Physics Letters****, vol. 84, no. 18, pp. 3459 - 3461, 2004.*

119. A. Shik, **G. Konstantatos**, E. H. Sargent, and H. E. Ruda, "Exciton capture by nanocrystals in a polymer matrix"**,** ***Journal of Applied Physics****, 94(6), 4066, 15 Sep 2003.*

120. **G. Konstantatos,** C. Soras, G. Tsachtsiris, M. Karaboikis and V. Makios, "Finite Element Modeling of Minkowski Monopole Antennas Printed on Wireless Devices" (**Invited Paper**), ***Electromagnetics Journal*** *Vol. 24 p.p. 81-93 (2004).*