

Dr. Debashis Chanda, Professor

NanoScience Technology Center, Dept. of Physics, College of Optics and Photonics (CREOL),
University of Central Florida

Dr. Debashis Chanda

E-mail: debashis.chanda@ucf.com

EDUCATION

- 2009-12 University of Illinois at Urbana-Champaign, USA**
Post-doctoral fellow, Beckman Institute, Material Research Laboratory.
- 2004-08 University of Toronto, Canada.**
PhD from Photonics Group, Electrical and Computer Engineering dept.
Distinctions: GPA of 4.0/4.0.
- 2002-04 University of Calgary, Canada.**
MS from Electrical and Computer Engineering Dept.
Distinctions: GPA of 3.9/4.0.
- 1994-98 Jadavpur University, India.**
BE from Electrical Engineering dept.
Distinctions: GPA of 3.8/4.0. First class honors with distinction.
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ACADEMIC/INDUSTRIAL RESEARCH EXPERIENCE

- 2021- Professor**, Dept. of Physics, NanoScience Technology Center, CREOL
- 2017-21 Associate Professor**, Dept. of Physics, NanoScience Technology Center, CREOL
- 2012-17 Assistant Professor**, NanoScience Technology Center, Dept. of Physics,
College of Optics and Photonics (CREOL), University of Central Florida
- 2009-12 Post-Doctoral Research Associate**, Beckman Institute, Material Research
Laboratory, University of Illinois at Urbana-Champaign, USA
Specialization: Light-Matter interactions in nanoscale, Design and fabrication of high
efficiency thin film solar-cells, Plasmonic Sensors, Design and fabrication of 3D
Metamaterial Structures, Nanoimprint/Soft lithography
Advisor: **Professor John A. Rogers, Fellow NAS and NAE**
- 2004-08 Graduate Researcher**, Photonics Group, **University of Toronto, Canada.**
Doctoral dissertation: *Laser Fabrication of 3-Dimensional Nanostructures*
Specialization: Optoelectronics/Photonics, Laser nano-fabrication 3D nanostructures,
three-dimensional optofluidic sensors.
Advisor: **Professor Peter R. Herman, Fellow OSA, Fellow SPIE**
- 2002-04 Graduate Researcher**, **University of Calgary, Canada.**
MS thesis: *Wireless Signal Transmission over Optical Fiber*
Specialization: Radio-over-fiber
Advisor: **Professor Abu Sesay**
- 2000-02 Sr. Research Engineer**, **Philips Semiconductors, Philips Ltd., Bangalore.**
Specialization: Semiconductor devices for speech signal processing
- 1998-00 Research Engineer**, **ABB R&D, ABB Ltd., Bangalore.**
Specialization: Semiconductor power electronic devices and signal processing
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Awarded Grants

Research Support: Dr. Debashis Chanda

Samsung Electronics, Debashis Chanda (Single PI)

Title: Bio-Inspired Infrared Detection

Duration: 03/01/2023 – 02/28/2026

Amount: **\$450,000** (Role: PI)

Sony Corporation, Debashis Chanda (Single PI)

Title: Graphene based LWIR Camera Development

Duration: 09/01/2023 – 08/31/2024

Amount: **\$100,000** (Role: PI)

DARPA SBIR DIRECT Phase-II, Debashis Chanda (PI) with E-Skin Displays Inc. (a Dr. Chanda Startup), Title: Graphene based Dynamically Tunable LWIR Detection and Imaging at Room

Duration: 10/01/2021 – 09/30/2024

Amount: **\$1.5M** (Role: PI, 50% goes to UCF and 50% goes to Chanda Startup E-Skin Displays Inc.)

ARO/NSF MIST Center Grant, Debashis Chanda (PI), Title: Room-T ultrafast LWIR detectors using patterned graphene absorbers on MCT

Duration: 09/01/2021 – 08/31/2024

Amount: **\$150,000** (Role: PI, co-PI: Prof. Avik Ghosh from UVA)

DARPA Phase-I, Debashis Chanda (PI) with Sivananthan Labs, Chicago, Title: 2D Material based Thermal Emission Control

Duration: 04/01/2021 – 10/30/2021

Amount: **\$15,000** (Role: PI)

UCF Office of Research Seed Grant, Debashis Chanda (Single PI), Title: Genetically Modified Optical Sensors for Low Cost, High Throughput Detection and Screening for COVID-19

Duration: 09/01/2020 – 08/31/2021

Amount: **\$40,000** (Role: PI with 80% credit, No Overhead, co-PI: Mubarak Shah)

National Science Foundation (NSF) ECCS/EPMD - 2015722

Debashis Chanda (Single PI), Title: *Nonlinear Semiconductor-Metal Phase Transition Induced Frequency Modulation (FM) based Mid-Infrared Detection at Room Temperature*

Duration: **05/01/2020- 04/30/2023**

Amount: **\$350,000** (Role: PI with 100% share)

NGA/DoD

Debashis Chanda (Single PI), Title: *Adaptive Infrared Thermal Signature Management.*

Duration: **04/01/2020 - 03/31/2025**

Amount: **\$2, 500, 000** (Role: **PI with 100% share**)

DARPA – WIRED Program GRANT NO. HR0011-16-1-0003 – PHASE III

Debashis Chanda (**PI**), Title: *Ultrafast, Uncooled Long Wave Infrared Detection based on Mono-layer Graphene.*

Duration: **01/01/2018- 12/31/2019**

Amount: **\$339, 082** (Role: **PI with about 80% share**, co-PI: Michael Leuenberger)

National Science Foundation (NSF) ECCS/EPMD-1920840,

Debashis Chanda (**Single PI**), Title: *Self-Assembled Angle Independent Plasmonic Displays,*

Duration: **07/01/2019-06/30/2022**

Amount: **\$399,221** (Role: **PI with 100% Credit**)

UCF Office of Research Seed Grant, Debashis Chanda (**Single PI**), Title: A Possible Way of Making World's First "Color" IR Camera

Duration: **01/01/2020- 12/31/2020**

Amount: **\$60, 000** (Role: **PI with 100% credit, No Overhead**)

Florida Space Grant/NASA, Debashis Chanda (**Single PI**), Title: Infrared "Color" Imaging for Deep Space Imaging, Duration: **09/01/2019- 08/31/2020**

Amount: **\$25, 000** (Role: **PI with 100% credit, No Overhead**)

Hinkley Foundation, Debashis Chanda (**PI**), Title: Detection and Separation of Recyclable Plastics from Municipal Solid Waste

Duration: **09/01/2019- 08/31/2020**

Amount: **\$50, 000** (Role: **PI with 100% credit**)

National Science Foundation (NSF) (ECCS/EPMD – 1808045), Debashis Chanda (**Single PI**), Title: *Superchiral Light Generation on Achiral Substrates for High Sensitive Detection of Chiral Molecules*, Duration: **08/01/2018- 07/31/2021**

Amount: **\$359, 869** (Role: **PI with 100% Credit**)

Northrop Grumman Corporation NG-63018088/63018125, Debashis Chanda (**Single PI**), Title: *Large Area Mid-IR Detectors and focal plane arrays*

Duration: **11/01/2017 – Continuous Support**

Amount: **\$75, 000/ Year** (Role: **PI with 100% credit, No Overhead Continuous Support**)

Hinkley Foundation, Debashis Chanda (**PI**), Title: *Detection and Separation of Recyclable Plastics from Municipal Solid Waste*

Duration: **09/01/2018- 08/31/2019**

Amount: **\$46, 000** (Role: **PI with 100% credit**)

DARPA – WIRED Program GRANT NO. HR0011-16-1-0003 - PHASE II

Debashis Chanda (**PI**), Title: *Ultrafast, Uncooled Long Wave Infrared Detection based on Mono-layer Graphene*

Duration: **01/01/2017- 12/31/2018**

Amount: **\$482, 478** (Role: **PI with about 80% share**, co-PI: Michael Leuenberger)

ARO DURIP

Debashis Chanda (**co-PI**) 08/2018

III-V Reactive Ion Etcher.

Amount: **\$375, 000** (Role: **co-PI 0% credit, Instrument grant**)

DARPA – WIRED Program GRANT NO. HR0011-16-1-0003 - PHASE I

Debashis Chanda (**PI**), Title: *Ultrafast, Uncooled Long Wave Infrared Detection based on Mono-layer Graphene*

Duration: **06/01/2016 - 12/31/2017**

Amount: **\$550, 128** (Role: **PI with about 80% share**, co-PI: Michael Leuenberger)

National Science Foundation (NSF) ECCS/EPMD-1509729, Debashis Chanda (**Single PI**), Title: *Flexible Reflective Metasurface Displays*

Duration: **07/01/2015 - 06/30/2019**

Amount: **\$300, 012** (Role: **PI with 100% credit**)

National Science Foundation (NSF) CMMI-1450806, Debashis Chanda (**Single PI**), Title: *Unified Photon and Electron Harvesting Scheme for High Efficiency Thin-film Mono-crystalline Silicon Solar Cells*

Duration: **09/01/2014- 04/30/2018**

Amount: **\$199,942** (Role: **PI with 100% credit**)

Florida Space Grant/NASA FSI63016092, Debashis Chanda (**Single PI**), Title: *Multi Spectral Uncooled Low SWaP Printed Infrared Detectors for Spectroscopic Chemical Analysis during Long Space Missions*

Duration: **01/01/2017 – 12/31/2017**

Amount: **\$25,000** (Role: **PI with 100% credit**)

Northrop Grumman NG-63018073, Debashis Chanda (**Single PI**), Title: *Large Area Mid-IR Detectors and focal plane arrays*, Duration: **3/01/2016 - 10/31/2016**

Amount: **\$50, 000** (Role: **PI with 100% credit**)

UCF Major Equipment Grant, Debashis Chanda (**PI**), Title: *Hybrid Magnetron Sputtering, E-beam and Thermal- all in one deposition system.*

Duration: **03/15/2016**

Amount: **\$325,000** (Role: **PI with 100% credit**)

Florida Space Institute/NASA FSI63019022, Debashis Chanda (**Single PI**), Title: *Printed Metamaterial based Mid-IR Imaging for Deep Space Exploration*

Duration: **07/15/2013-08/31/2015**

Amount: **\$75, 000** (Role: **PI with 100% credit**)

Open Photonics Inc. 63018043, Debashis Chanda (**Single PI**), Title: *Printed Metamaterial based Large Area Mid-IR Detectors and focal plane arrays*

Duration: **6/01/2014 - 08/31/2015**

Amount: **\$20,000** (with FHTCC 1:1 match) (Role: **PI with 100% credit**)

Lockheed Martin Corporation, Debashis Chanda (sub-contracted), Title: *Direct Laser Writing of Optical Nanostructures on Chalcogenide Glasses*

Duration: **6/01/2014 - 12/31/2014**

Amount: **\$10,000** (Role: sub-contractor)

UCF Seed Funding UCF63019026, Debashis Chanda (**Single PI**), Title: *Printed Cavity-Coupled Nanoplasmonic Crystals for Non-Invasive In Vivo Diagnosis*

Duration: **03/01/2014-08/31/2015**

Amount: **\$7,500** (Role: **PI with 100% credit**)

UCF Major Research Equipment Grant 63019017, Debashis Chanda (**Single PI**), Title: *High Throughput, Large Area, State of the Art Ultrafast Laser Lithography System for Nanomanufacturing of 3D Nanoparticles*

Duration: **2/14/2013 - 03/31/2014**

Amount: **\$225,000** (with center match, Role: **PI with 100% credit**)

SELECTED AWARDS/ACHIEVEMENTS

Dr. Chanda:

2023 **Sony Research Excellence Award 2023.**

2023 **Samsung Global Research Outreach (GRO) Award 2023.**

2020 **UCF Luminary Award** for research excellence, 2020 [*UCF took it back as an employee of my lab brought few fishes to the lab by mistake]

2018 **UCF Reach for the Stars Award** for research excellence, 2018

2017 Dr. Chanda is awarded **2017 International EIPBN Conference MicroGraph 3-Beamers Choice Award**, June 1, 2017

2017 **UCF Research Incentive Award (RIA)** for research excellence, 2016-2017

2016 Dr. Chanda is Awarded Winner of '**International Displaying Futures Award 2016**' by **MERCK, Germany** for the 'Skin-like Plasmonic Full-Color Displays'

[**This is an invitation only international competition for novel display innovation. The award came with a plaque, \$50,000 fund and long term research support from MERCK, Germany]

2015 Dr. Chanda received the **Northrop Grumman National Innovation Award 2016.**

- 2013 Received NSF Summer Institute Fellowship, April 2013.
- 2012 Department of Energy (DOE) Energy Frontier Research Center (EFRC) Solar Energy Future Direction Innovation Proposal Award.
- 2010-11 Natural Science and Engineering Council (NSERC) of Canada post-doctoral award (\$80,000).
- 2008-09 Government of Ontario Graduate Scholarship (\$15000/Year for 2 years), Canada.
- 2007 Conference on Laser Ablation Award (€2000).
- 2007 Ontario Science and Technology Award (\$15,000/Year), Canada.
- 2007 Ontario Centre of Excellence (OCE) Award (\$2000), Canada.
- 2004-06 Edward S. Rogers Sr. Scholarship (\$12,000/Year for 2 years), Canada.
- 2004 Graduate Student Conference Travel Award (\$1000), University of Calgary.
- 2002-04 Graduate Scholarship University of Calgary (\$12,000/Year for 2 years), Canada.

Group:

- 2022: Austin Eason, an undergraduate student in Dr. Chanda's group received UCF Order of Pegasus Award - **Order of Pegasus** is UCF's most prestigious student honor.
- 2021: Antonio Martinez Margolles, PhD student from Dr. Chanda's group received **College of Sciences Dean's Fellowship**.
- 2021: Sean McCormack undergraduate student in Dr. Chanda's group received UCF EXCEL/COMPASS Scholarship
- 2020: Alireza Safaei, PhD student from Dr. Chanda's group received **University Best PhD Dissertation Award**
- 2020: Alireza Safaei, PhD student from Dr. Chanda's group received College of Sciences **Best PhD Dissertation Award**
- 2019: Alireza Safaei, PhD student from Dr. Chanda's group received **Physics "Student of the Year" Award** for research excellence
- 2018: Daniel Franklin, PhD students in Dr. Chanda's group received **UCF Order of Pegasus Award 2018**
- 2018: Harshil Lalwani, High School Student in Dr. Chanda's group won 2nd place in **Seminole County Science Fair**, Oviedo High School.
- 2017: Abraham Vazquez-Guardado, PhD students in Dr. Chanda's group received **UCF Dean's Fellowship**
- 2017: Beatriz Jimenez from Dr. Chanda's group received **SURF Research Scholarship from University of Florida (UF)** (which covers \$5000 stipend, on-campus housing and meal plan, airfare, priority consideration for PhD admission)
- 2016: Daniel Franklin, PhD students in Dr. Chanda's group received **College of Sciences General Scholarship**
- 2016: Jonathan LEE, PhD students in Dr. Chanda's group received **Dean's Fellowship Award (2013-2018)**
- 2016: Russell Frank from Dr. Chanda's group received **First Prize in Showcase of Undergraduate Research Excellence**
- 2016: Samuel Nunez, Jared Cozart and Beatriz Jimenez from Dr. Chanda's group received **Duke Energy Scholarship**
- 2015: Wade Wilson, undergraduate student in Dr. Chanda's group received the prestigious **AFRL / DoD Science, Mathematics, And Research for Transformation (SMART) Defense Education Program** Scholarship (\$38k / year for 5 years)

- 2015: Daniel Franklin and Javaneh Borouman, PhD students in Dr. Chanda's group received **UCF Graduate Research Forum Poster Awards**
- 2015: Jonathan LEE, PhD students in Dr. Chanda's group received **UCF Teaching Excellence Award**
- 2015: Beatriz Jimenez , Samuel Nunez, Jared Cozart undergraduate students in Dr. Chanda's group received UCF EXCEL Scholarship
- 2015: Harshil Lalwani, Middle School Student in Dr. Chanda's group won the **Crooms Technology Award**, Indian Trail Middle School.
- 2014: Alireza Safaei, PhD student in Dr. Chanda's group received **Northrop Grumman Scholarship** (\$10k)
- 2014: Daniel Franklin, PhD student in Dr. Chanda's group received **Northrop Grumman Scholarship** (\$3k)
- 2014: Alysia Waugh, Jones High school student in Dr. Chanda's group received Florida Alliance Health FAHPD-HERI Scholarship
- 2014: Harry Ahlheim undergraduate student in Dr. Chanda's group received Duke Energy EXCEL Scholarship
- 2013: Wade Wilson and Dr. Chanda received Burnett Research Scholars Grant for the work on Plasmonic Bio-Sensors
- 2012: Abraham Vazquez-Guardado received National Council of Science and Technology CONACyT scholarship from Government of Mexico (\$12k + tuition for 4 years)
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SELECTED PUBLICATIONS

[1] Pablo Cencillo-Abad, Pamela Mastranzo-Ortega, Divambal Appavoo, Tianyi Guo, Lei Zhai, Javier Sanchez-Mondragon and **Debashis Chanda**, [“Reusable Structural Colored Nanostructure for Self-Powered Temperature and Humidity Sensing”](#), **Advanced Optical Materials** ,2300300, 2023.

[2] Pablo Cencillo-Abad, Daniel Franklin, Pamela Mastranzo-Ortega, J. Sanchez-Mondragon and **Debashis Chanda**, “Ultralight Plasmonic Structural Color Paint”, **Science Advances** , vol. 9, issue 10, DOI: 10.1126/sciadv.adf7207, 2023.

- National Science Foundation: [Researchers create world's first energy-saving paint — inspired by butterflies](#), April 17, 2023.
- Forbes: [Butterflies Inspire Paint Without Pigments](#), March 21, 2023.
- WIRED: [This Is the Lightest Paint in the World](#), March 22, 2023.
- Phys.org: [Researchers create world's first energy-saving paint—inspired by butterflies](#), March 8, 2023.



[3] Manobina Karmakar, Partha Kumbhakar, Tara Singha, Chandra Sekhar Tiwary, **Debashis Chanda***, and Prasanta Kumar Datta*, “Anomalous Indirect Carrier Relaxation in Direct Bandgap Atomically Thin Gallium Telluride”, **Physical Review B**, vol. 107, 075429, 2023.*Corresponding Author.

[4] Vázquez-Guardado, Abraham, Mehta, Freya, Jimenez, Beatriz, Biswas, Aritra, Ray, Keval, Baksh, Aliyah, Lee, Sang, Saraf, Nilesi, Seal, Sudipta and **Debashis Chanda**, “Genetically Modified Plasmonic Sensor for Direct Detection of Virus Biomarkers from the Blood”, **Nano Letters**, doi.org/10.1021/acs.nanolett.1c01609, 2021.

[5] Joong Hoon Lee, Yeong Jae Kim, Young Jin Yoo, Sehui Chang, Gil Ju Lee, Joo Hwan Ko, Kyung Muk Kang, **Debashis Chanda**, and Young Min Song, “Colored, Covert Infrared Display through Hybrid Planar- Plasmonic Cavities”, **Advanced Optical Materials**, 2100429, 2021.

[6] Rinku Saran, David Fox, Lei Zhai and **Debashis Chanda**, “Organic Non-wettable Fullerite Films”, (**Cover Article**) **Advanced Materials**, article. 2102108, 2021.

[7] Sayan Chandra, Jared Cozart, Sang Lee and **Debashis Chanda**, “Magnetoplasmons for Ultra-Sensitive Label-Free Bio-Sensing”, **ACS Photonics**, vol.8, pp.1316–1323, 2021.

[8] Manobina Karmakar, Sayantan Bhattacharya, Subhrajit Mukherjee, Barun Ghosh, Rup Kumar Chowdhury, Amit Agarwal, Samit Kumar Ray, **Debashis Chanda***, Prasanta Kumar Datta*, “Observation of Dynamic Screening in the Excited Exciton States in Multi-Layered MoS₂”, **Physical Review B**, vol. 103, pp. 075437, 2021. (*Corresponding Authors)

[9] H. Zhang, H. Zhao, X. Zhao, C. Xu, D. Franklin, A. Vázquez-Guardado, W. Bai, J. Zhao, K. Li, G. Monti, W. Lu, A. Kobeissi, L. Tian, X. Ning, X. Yu, S. Mehta, D. Chanda, Y. Huang, S. Xu, B. E. Perez White, J. A. Rogers, “Biocompatible Light Guide-Assisted Wearable Devices for Enhanced UV Light Delivery in Deep Skin”, **Advanced Functional Materials**, March 2021 (in press).

[10] Daniel Franklin, Ziqian He, Pamela Mastranzo Ortega, Alireza Safaei, Shin-Tson Wu and **Debashis Chanda**, “Self-Assembled Plasmonics for Angle-Independent Structural Color Displays with Actively Addressed Black States”, **Proceedings of the National Academy of Sciences (PNAS)**, doi/10.1073/pnas.2001435117, 2020.

- **National Science Foundation (NSF)**: [Butterfly-inspired nanotech makes natural-looking pictures on digital screens](#), June 10, 2020.

- **Phys.org**: [Butterfly-inspired nanotech makes natural-looking pictures on digital screens](#), June 4, 2020.

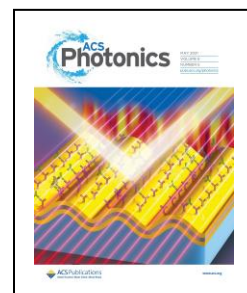
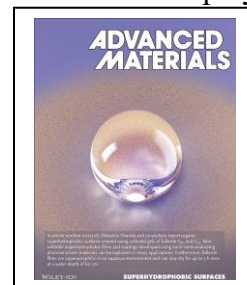
[11] Alireza Safaei, Sayan Chandra, Muhammad Waqas Shabbir, Michael N. Leuenberger, and **Debashis Chanda**, “Dynamically Tunable Graphene based Uncooled Long Wave Infrared Detection and Imaging”, **Nature Communications**, DOI:10:3498, 2019.

- **Nature**: [Dirac plasmon-assisted asymmetric hot carrier generation for room-temperature infrared detection](#)

- **Phys.org**: [Researchers work to create infrared detectors for viper-like night vision](#)

[12] H. Zhao, K. Li, M. Han, F. Zhu, A. Vázquez-Guardado, P. Guo, Z. Xie, Y. Park, L. Chen, X. Wang, H. Luan, Y. Yang, H. Wang, C. Liang, Y. Xue, R. D. Schaller, **Debashis Chanda**, Y. Huang, Y. Zhang, and J. A. Rogers, “Buckling and Twisting of Advanced Materials into Morphable 3D Mesostructures”, **Proceedings of the National Academy of Sciences (PNAS)**, vol. 116, pp. 13239-13248, 2019.

[13] H. Zhang, P. Gutruf, K. Meacham, M. C. Montana, X. Zhao, A. M. Chiarelli, A Vázquez-Guardado, A. Norris, L. Lu, Q. Guo, C. Xu, Y. Wu, H. Zhao, X. Ning, W. Bai, I. Kandela, C. R. Haney, **Debashis Chanda**, R. W. Gereau IV, and J. A. Rogers, “Wireless, Battery-Free Optoelectronic Systems as Subdermal Implants for Local Tissue Oximetry”, **Science Advances**, 5(3): eaaw0873, 2019. doi:10.1126/sciadv.aaw0873.



[14] ZIQIAN HE, GUANJUN TAN, **DEBASHIS CHANDA***, SHIN-TSON WU*, “Novel liquid crystal photonic devices enabled by two-photon polymerization [[INVITED](#)]”, **Optics Express**, vol.27, pp. 11472-11491, 2019. (*Corresponding Authors)

[15] Abraham Vázquez-Guardado, Swetha Barkam, Madison Pepler, Aritra Biswas, Dennis Wessley, Soumen Das, Sudipta Seal, **Debashis Chanda**, “Enzyme-Free Plasmonic Biosensor for Direct Detection of Neurotransmitter Dopamine from Whole Blood”, **Nano Letters**, vol.19, pp. 449-454, 2019.

- [MRS Bulletin: Biosensor enables simplified dopamine detection](#)

[16] Alireza Safaei, Sayan Chandra, Michael Leuenberger, **Debashis Chanda**, “Wide Angle Dynamically Tunable Enhanced Infrared Absorption on Large Area Nanopatterned Graphene”, **ACS Nano**, vol. 13, pp. 421-428, 2019.

[17] Philipp Gutruf, Vaishnavi Krishnamurthi, Abraham Vázquez-Guardado, Zhaoqian Xie, Anthony Banks, Chun-Ju Su, Yeshou Xu, Chad Haney, Emily Waters, Irawati Kandela, Siddharth Krishnan, Tyler Ray, John Leshock, Yonggang Huang, **Debashis Chanda**, and John Rogers, “Fully implantable optoelectronic systems for battery-free, multimodal operation in neuroscience research”, **Nature Electronics**, vol. 1, pp. 652-660, 2018.

[18] Alireza Safaei, Sushrut Modak, Abraham Vazquez-Guardado, Daniel Franklin and **Debashis Chanda**, Cavity induced tunable perfect infrared absorption in imprinted coupled complementary hole-disk array, **Optics Letters**, vol. 43, pp. 6001, 2018.

[19] Daniel Franklin, Sushrut Modak, Abraham Vázquez-Guardado, and Alireza Safaei, **Debashis Chanda**, “Covert Infrared Image Encoding through Imprinted Plasmonic Cavities”, **Light: Science & Applications**, vol. 7, Article no. 93, 2018.

-[Has been selected for Web of Science Special Topic target promotion and press coverage.](#)

[20] Sayan Chandra, Daniel Franklin, Jared Cozart, Alireza Safaei, **Debashis Chanda**, “Adaptive Multispectral Infrared Camouflage”, **ACS Photonics**, (**Cover Article**), vol. 5, pp. 4513, 2018.

- [National Science Foundation \(NSF\) News: UCF researchers develop method to hide images and information in plain sight, December 17, 2018](#)

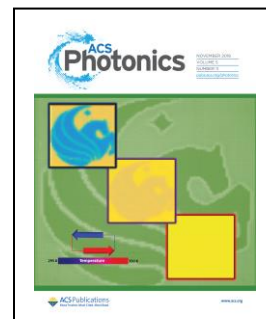
[21] Alireza Safaei, Sushrut Modak, Jonathan Lee, Sayan Chandra, Daniel Franklin, Abraham Vasquez-Gaurdado, **Debashis Chanda**, “Multi-spectral frequency selective mid-infrared microbolometers”, **Optics Express**, vol. 26, pp. 32931, 2018.

[22] Ziqian He, Ran Chen, Yun-han Lee, **Debashis Chanda***, Shin-Tson Wu*, “Switchable Pancharatnam–Berry microlens array”, **Optics Letters**, vol. 43, pp.5062, 2018. (*Corresponding Authors)

[23] Daniel Franklin, Matthew George, James Fraser, **Debashis Chanda**, “Atomic Layer Deposition Tuning of Subwavelength Aluminum Grating for Angle-Insensitive Plasmonic Color”, **ACS Applied Nano Materials**, 1800216, DOI: 10.1021/acsnm.8b01147,2018.

[24] ZIQIAN HE, YUN-HAN LEE, **DEBASHIS CHANDA***, SHIN-TSON WU*, “Adaptive liquid crystal microlens array enabled by two-photon polymerization”, **Optics Express**, vol. 26, pp.21184, 2018. (*Corresponding Author)

[25] Abraham Vázquez-Guardado, Javaneh Boroumand, Daniel Franklin, **Debashis Chanda**, “Broadband Angle Independent Anti-reflection Coatings on Nanostructured Light Trapping Solar Cells”, **Physical Review Materials** , vol. 2, pp. 035201, 2018.



[26] Abraham Vazquez-Guardado, **Debashis Chanda**, “Superchiral Light Generation on Degenerate Achiral Surfaces”, **Physical Review Letters**, vol. 120, pp.137601, 2018.

[27] Alireza Safaei, Abraham Vázquez-Guardado, Daniel Franklin, Michael N. Leuenberger, **Debashis Chanda**, “High-Efficiency Broadband Mid-Infrared Flat Lens”, **Advanced Optical Materials**, 1800216, 2018.

- Selected for the Special issue on "**Applied Plasmonics**" by **Advanced Optical Materials**

[28] Luyao Lu, Philipp Gutruf, Li Xia, Dionnet L. Bhatti, Xinying Wang, Abraham Vazquez-Guardado, Ning Xin, Xinru Shen, Tian Sang, Rongxue Ma, Grace Pakeltis, Gabriel Sobczak, Hao Zhang, Dong-oh Seo, Mantian Xue, Lan Yin, **Debashis Chanda**, Xing Sheng, Michael R. Bruchas, John A. Rogers, “Wireless, implantable optoelectronic photometers for monitoring neuronal dynamics in the deep brain”, **Proceedings of the National Academy of Sciences (PNAS)**, vol. 115 (7) pp. E1374-E1383, 2018.

[29] Luyao Lu, Zijian Yang, Kathleen Meacham, Caroline Cvetkovic, Elise A. Corbin, Abraham Vázquez-Guardado, Mantian Xue, Lan Yin, Javaneh Boroumand, Grace Pakeltis, Tian Sang, Ki Jun Yu, **Debashis Chanda**, Rashid Bashir, Robert W. Gereau IV, Xing Sheng and John A. Rogers, “Biodegradable Monocrystalline Silicon Photovoltaic Microcells as Power Supplies for Transient Biomedical Implants”, **Advanced Energy Materials**, pp. 1703035 (DOI: 10.1002/aenm.201703035), January 2018.

[30] Alireza Safaei, Jean Calderon, Daniel Franklin, Abraham Vazquez-Guardado, Laurene Tetard, Lei Zhai, Michael N. Leuenberger, **Debashis Chanda**, “Dynamically tunable extraordinary light absorption in monolayer graphene”, **Physical Review B**, **96**, 165431, 2017, 2017.

- Breakthrough in DARPA Funded Research on Infrared Detector Technology using one Atomic Layer Thick Graphene

[31] Daniel Franklin, Russell Frank, Shin-Tson Wu and Debashis Chanda, **Debashis Chanda**, “Dynamically Tunable, Single Pixel Full-Color Plasmonic Display”, **Nature Communications** Vol. 8, pp. 15209, 2017.

[32] Ziqian He, Yun-Han Lee, Fangwang Gou, Daniel Franklin, **Debashis Chanda***, Shin-tson Wu*, “Polarization-independent phase modulators enabled by two-photon polymerization”, **Optics Express**, Vol. 25, pp. 33688, 2017 (*Corresponding Author).

[33] YUN-HAN LEE†, DANIEL FRANKLIN†, FANGWANG GOU, GUIGENG LIU, FENGLIN PENG, **DEBASHIS CHANDA***, SHIN-TSON WU*, “Two-photon polymerization enabled multi-layer liquid crystal phase modulator”, **Scientific Reports**, Vol. 7, pp. 16260, 2017 (*Corresponding Author).

[34] **Debashis Chanda et. al.**, “Roadmap on optical metamaterials”, **Journal of Optics**, Vol. 18, pp. 093005, 2016.

- Air Force Research Laboratory (AFRL) led this review article on future of optical metamaterials which includes all leading experts of nanophotonics.

[35] Abraham Vázquez-Guardado, Alexandra Smith, Wade Wilson, Jeanette Ortega, J. Manuel Perez, **Debashis Chanda**, “Low Concentration Label-Free Selective Biomolecular Detection Using Hybrid Cavity-Coupled Plasmonic Biosensors”, **Optics Express**, Vol. 22, pp. 25785, 2016.

[36] Javaneh Boroumand, Sonali Das, Abraham Vazquez-Guardado, Daniel Franklin, **Debashis Chanda**, “Unified Electromagnetic-Electronic Device Design of Light Trapping Silicon Solar Cells”, **Scientific Reports**, Vol. 6, pp. 31013, 2016.

[37] Daniel Franklin, Yuan Chen, Abraham Vazquez-Guardado, Sushrut Modak, Javaneh Boroumand, Daming Xu, Shin-Tson Wu, **Debashis Chanda**, “Polarization Independent, Actively Tunable Color Generation on Imprinted Plasmonic Surfaces”, (**Featured Article**) **Nature Communications**, Vol. 6, pp. 7337, June 2015.

- **National Science Foundation (NSF)**: NSF selected the plasmonic full-color display as one of the “Year of Light” favorites, **National Science Foundation (NSF) News**, Nov 26, 2015.



- **Photonics Spectra Top Stories 2015**: Flexible Film

Creates Colors from Reflected Light, **Photonics Spectra**, December 2015.

- **BBC News**: Flexible 'skin-like' colour display developed, **BBC News**, June 25, 2015.

- Start-up company: **e-Skin Displays Inc**, California (www.eskindisplays.com)

[38] Abraham Vázquez-Guardado, Mason Money, Nathaniel McKinney, **Debashis Chanda**, “Multi-Spectral Infrared Spectroscopy for Robust Plastic Identification”, **Applied Optics**, Vol. 54, pp. 7396-7405, August 20 2015.

[39] Abraham Vázquez-Guardado, Alireza Safaei, Daniel Franklin, Sushrut Modak, **D. Chanda**, “Hybrid Coupling Mechanism in a System Supporting Higher Order Diffraction, Plasmonic and Cavity Resonances”, **Physical Review Letters**, Vol. 113, pp.263902, December 31, 2014.

[40] Li Gao, Kazuki Shigetac, Abraham Vazquez-Guardado, C.J. Progler, G.R.Bogart, J.A.Rogers, **D.Chanda***, “Nanoimprinting Techniques for Large-Area Three-Dimensional Negative Index Metamaterials with Operation in the Visible and Telecom Bands”, **ACS Nano**, Vol. 6, pp. 5535–5542, June 2014.

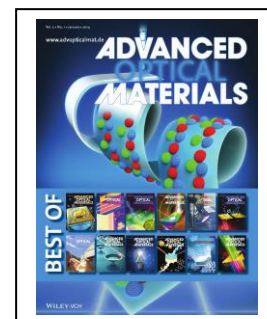
- Highlight Article: “Scale-up of the manufacturing of optical metamaterials”, Xiang Zhang (University of California, Berkeley) et.

al., **Nature Publishing Group Asia Materials**, doi:10.1038/am.2014.99, Nov 2014.



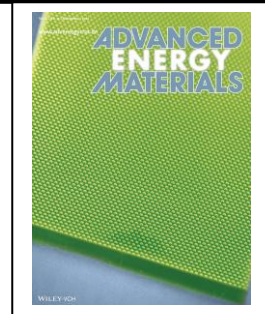
- **American Scientist Feature Article**: Fabrication at the Nano Scale with Molds and Imprinting – **implemented by companies like Intel, Toshiba etc.**, **American Scientist**, 103, pp. 212-217, May-June 2015.

[41] L.Gao, Y.Kim, A.Vazquez-Guardado, K.Shigeta, S.Hartanto, D. Franklin, C.J. Progler, G.R.Bogart, J.A.Rogers, **D. Chanda***, “Materials Selections and Growth Conditions for Large Area Multilayered Visible Negative Index Metamaterials Formed by Nanotransfer Printing”, (**Cover Article**) **Advanced Optical Materials**, Vol. 2, pp. 256–261, March 2014.



-Selected for the Best of Advanced Optical Materials - 2014 Edition

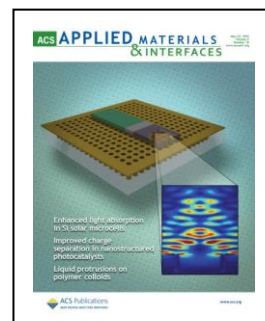
[42] K.J. Yu, L. Gao, J.S.Park, Y.R. Lee, C. J. Cocoran, R. G. Nuzzo, **D. Chanda***, J.A. Rogers*, “Light Trapping in Ultra-thin Monocrystalline Silicon Solar Cells”, (**Cover Article**) **Advanced Energy Materials**, Vol. 3, pp.1528, December 2013. (*Corresponding Author)



- **Science Daily:** Solar Cells Made Thin, Efficient and Flexible, December 09, 2013

- **Photonics Spectra:** Tapping Solar’s Full Potential, December 10, 2013

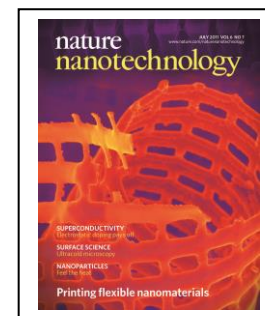
[43] C. Corcoran, S. Kang, L. Li, X. Guo, **D. Chanda***, R. G. Nuzzo*, “Mechanisms of Enhanced Optical Absorption for Ultrathin Silicon Solar Micro-Cells with an Integrated Nanostructured Backside Reflector”, (**Cover Article**) **Applied Materials and Interfaces**, (dx.doi.org/10.1021/am400408g), June 2013. (*Corresponding Author)



[44] M.L.Ng, **D. Chanda**, Peter R. Herman, “Coherent stitching of light in multilayered diffractive optical elements”, **Optics Express**, Vol. 20, pp. 23960, Oct 2012.

[45] K. Balasundaram, J. S Sadhu, J. C. Shin, B. Azeredo, **D. Chanda**, M. Malik, K. Hsu, J. A Rogers, P. Ferreira, S. Sinha, X. Li, “Porosity control in metal-assisted chemical etching of degenerately doped silicon nanowires”, **Nanotechnology**, Vol. 23, pp. 305304, July 2012.

[46] **D. Chanda**, K. Shigeta, S. Gupta, T. Cain, A. Mihi, A. J. Baca, G. R. Bogart, P. V. Braun, J. A. Rogers, “Large-Area, Flexible 3-Dimensional Negative Index Metamaterials Formed by Nanotransfer Printing”, (**Cover Article**) **Nature Nanotechnology**, Vol. 6, 402-407, July 2011.



-Appeared as **featured article** of **Nature Nanotechnology** **July 2011**.

-**News & Views: A stamp of quality** -by Dr. Richard D. Averitt, was written in **Nature Nanotechnology**, **June-July 2011**.

-Printed 3D Metamaterials, Selected as “**What is Hot in Optics**” by Optical Society of America (OSA)

-Printed Metamaterial work selected for cover article of **Laser Focus World**, Vol 47, Issue 8, Aug 2011

-A Practical Way to Make Metamaterials, **MIT Technology Review**, June 2011

[47] **D. Chanda**, K. Shigeta, T. Troung, M. Schulmerich, E. Lui, A. Mihi, P. V. Braun, R. Bhargava, John A. Rogers, “Coupling of plasmonic and optical cavity modes in quasi-three-dimensional plasmonic crystals”, **Nature Communications**, Vol. 2, pp. 479, Sept 2011.

[48] **D. Chanda**, K. Shigeta, S. Gupta, T. Cain, A. Mihi, A. J. Baca, G. R. Bogart, P. V. Braun, J. A. Rogers, “A stamp of quality”, **Nature Nanotechnology**, Vol. 6, pp. 396-397, July 2011.

[49] J. Cheol Shin, **D. Chanda**, W. Chern, K. J. Yu, J. A. Rogers, X. Li, “Experimental Study of Design Parameters in Silicon Micropillar Array Solar Cells Produced by Soft Lithography and Metal Assisted Chemical Etching”, **IEEE Journal of Photovoltaics**, DOI: 10.1109/JPHOTOV.2011.2180894, (2011).

- [50] M. T. Dejarld, J. C. Shin, W. Chern, **D. Chanda**, K. Balasundaram, J. A. Rogers, and X. Li, "Formation of High Aspect Ratio GaAs Nanostructures with Metal Assisted Chemical Etching", **Nano Letters**, DOI: 10.1021/nl202708d (2011).
- [51] D. J. Shir, Yoon, **D. Chanda**, J.-H. Ryu and J.A. Rogers, "Performance of Ultrathin Silicon Solar Microcells with Nanostructures of Relief Formed by Soft Imprint Lithography for Broad Band Absorption Enhancement," **Nano Letters**, 10, 3041–3046 (2010).
- [52] D. J. Shir, E.C. Nelson, **D. Chanda**, A. Brzezinski, P.V. Braun, J.A. Rogers and P. Wiltzius, "Dual Exposure, Two-Photon, Conformal Phase Mask Lithography for Three Dimensional Silicon Inverse Woodpile Photonic Crystals," **Journal of Vacuum Science and Technology B** 28(4), 783-788 (2010).
- [53] K. Balasundaram, J. S Sadhu, J. C. Shin, B. Azeredo, **D. Chanda**, M. Malik, K. Hsu, J. A Rogers, P. Ferreira, S. Sinha, X. Li, "Porosity control in metal-assisted chemical etching of degenerately doped silicon nanowires", **Nanotechnology**, 23, 305304 (2012).
- [54] **D. Chanda**, N. Zacharia, M. Haque, M. L. Ng, P. R. Herman, "Flexible fabrication of three-dimensional optical-domain photonic crystals using a combination of single-laser-exposure diffractive-optics lithography and template inversion", **Optics Letters**, Vol. 34, pp. 3920-3922, Dec 2009.
- [55] **D. Chanda**, L. E. Abolghasemi, M. Haque, M. L. Ng, P. R. Herman, "Multi-level Diffractive Optics for Single Laser Exposure Fabrication of Telecom-Band Diamond-like 3-Dimensional Photonic Crystals", **Optics Express**, Vol. 16, Issue 20, pp. 15402-15414, Sept 2008.
- [56] **D. Chanda**, L. Abolghasemi, P. R. Herman, "Single Laser Exposure Fabrication of Diamond-Like 3-Dimensional Photonic Crystal Microstructures using Circularly Polarized Light", **Applied Physics A**, 93, 33-37 (2008).
- [57] **D. Chanda**, P. R. Herman, "Phase tunable multilevel diffractive optical element based single laser exposure fabrication of three-dimensional photonic crystal templates", **Applied Physics Letters**, 91, 061122, Aug 2007.
- [58] **D. Chanda**, L. Abolghasemi, P. R. Herman, "One-dimensional diffractive optical element based fabrication and spectral characterization of three-dimensional photonic crystal templates", **Optics Express**, Vol. 14, Issue 19, pp. 8568-8577, Sept 2006.
- [59] **D. Chanda**, A. Sesay, "Wireless signal-preamble assisted Mach-Zehnder modulator bias stabilization in wireless signal transmission over optical fibre", **Journal of European Transactions of Telecommunications**, Vol. 19, No. 6, pp.669-679, October 2008.

[B] SELECTED Press/News Coverage on my Research

- **National Science Foundation: [Researchers create world's first energy-saving paint — inspired by butterflies](#)**, April 17, 2023.
- **Forbes: [Butterflies Inspire Paint Without Pigments](#)**, March 21, 2023.
- **WIRED: [This Is the Lightest Paint in the World](#)**, March 22, 2023.
- **Phys.org: [Researchers create world's first energy-saving paint—inspired by butterflies](#)**, March 8, 2023.
- **Phys.org: [Researchers develop rapid, highly accurate test to detect viruses like SARS-COV-2](#)**, November 29, 2021.
- **UCF Today: [UCF Researchers Develop Rapid, Highly Accurate Test to Detect Viruses like COVID-19](#)**, November 29, 2021.
- **Phys.org: [A water-repellent nanomaterial inspired by nature](#)**, September 9, 2021.
- **UCF Today: [UCF Researchers Create Water-repellent Nanomaterial Inspired by Nature](#)**, September 6, 2021.

- **National Science Foundation (NSF):** [Butterfly-inspired nanotech makes natural-looking pictures on digital screens](#), June 10, 2020.
- **Florida Minds Shine Brighter:** [University of Central Florida researchers use butterflies as inspiration for new screen technology](#), June 25, 2020.
- **Phys.org:** [Butterfly-inspired nanotech makes natural-looking pictures on digital screens](#), June 4, 2020.
- **C&EN News:** Plasmonic Color Makes a Comeback, <https://dx.doi.org/10.1021/acscentsci.0c00259>, 2020.
- **TV Fox 35 News:** Complex Light-Field to Detect Neurotransmitters Directly from Blood: Blood test for Brain, Feb 4 2020.
- **Nature:** Dirac Plassmon-assisted asymmetric hot carrier generation for room-temperature infrared detection, Sept 6, 2019.
- **Phys.org:** Researchers work to create infrared detectors for viper-like night vision, Oct 23, 2019.
- **TV Fox 35 News:** UCF lab cutting through the dark of night with color night vision, Nov 6 2019.
- **TV ABC Channel 9 News:** “Color” IR Imaging, Nov 01, 2019.
- **MRS Bulletin:** Biosensor enables simplified dopamine detection, May 9, 2019.
- **Science Daily:** Sensor created to detect dopamine, brain disorders, in seconds, March 19, 2019
- **National Science Foundation News:** UCF researchers develop method to hide images and information in plain sight, December 17, 2018.
- **TV Fox 35 News:** Covert Imaging, January 05, 2019.
- **TV ABC Channel 9 News:** Covert Imaging, January 09, 2019.
- **Phys.org:** New optical sensor can determine if molecules are left or right 'handed', June 12, 2018.
- UCF Today: A Breakthrough in Graphene Research May lead to Next-Generation Tech, January 12, 2018.
- Tech Transfer: Professor Striving to Turn Nanoscale Inventions into Real-Life Products, September, 2017.
- **Phys.org:** Research could bring 'drastically' higher resolution to your TV and smartphone, May 25, 2017.
- 'Skin-like Plasmonic Full-Color Displays' selected as **Winner of Displaying Futures Award 2016 by MERCK, Germany**, October 2016.
- Dr. Chanda and PhD Student Daniel Franklin was recognized by the UCF President and Board of Trustees for the **Displaying Futures Award 2016 on Nov 17, 2016**.
- Dr. Chanda gave **Plenary Talk** at OSA Latin America Optics and Photonics Conference - LAOP 2016, Medellin, Colombia, Aug 22-26, 2016.
- Dr. Chanda gave Invited Talk at Tech Transfer Symposium, CLEO - Conference on Lasers and Electro-Optics, San Jose, CA, June 2016.
- **Photonics Spectra:** DARPA Grants \$1.3M for IR Detection, June 10, 2016.
- **UCF Today:** Next-Gen Infrared Detector Research at UCF Attracts \$1.3 Million DARPA Grant, June 02, 2016.
- **SciTech TV Show:** Flexible thin screens, which could lead to wearable displays, color-changing phone cases, and much more, 8.30 pm, February 11 2016.

- **National Science Foundation (NSF):** NSF selected the plasmonic full-color display as one of the “Year of Light” favorites, National Science Foundation (NSF) News, November 26, 2015.
- **National Science Foundation (NSF):** Researchers funded by the National Science Foundation have figured out how to change the color of a surface and play video by altering the voltage applied to it, National Science Foundation (NSF) News, November 26, 2015.
- **BBC News:** Flexible 'skin-like' colour display developed, **BBC News**, June 25, 2015.
- **American Scientist Feature Article:** Fabrication at the Nano Scale with Molds and Imprinting, **American Scientist**, 103, pp. 212-217, May-June 2015.
- **Photonics Spectra Top Stories 2015:** Flexible Film Creates Colors from Reflected Light, **Photonics Spectra**, December 2015.
- **ABC WFTV Channel 9 News:** UCF professor's high-tech camouflage innovation gets government's attention, **Channel 9 News**, October 27, 2015.
- **Daily Mail:** The full colour 'skin screen' you can wear as clothing: Radical technology could let you alter your outfit instantly, **Daily Mail**, June 24, 2015.
- **NBC News:** Flexible, Ultra-Thin Display Changes Color Like a Chameleon, **NBC News**, June 24, 2015.
- **Science Daily:** Chameleon-like clothing: World's first full-color, flexible, skin-like display, **Science Daily**, June 24, 2015.
- World's first full-color, flexible, skin-like display developed, **Phys.org**, June 24, 2015.
- Super-Thin Electronic Textile Could Dress You in Video, **Popular Science (PopSci)**, June 24, 2015.
- World's first full-color, flexible, skin-like display developed at UCF, **EurekAlert- The Global Source for Science News**, June 24, 2015.
- UCF professor on quest to mimic how nature makes color, **Orlando Sentinel- Front Page**, July 20, 2015.
- **Fox 35 TV Show:** UCF researchers make breakthrough into “invisibility” technology, 10 pm, March 31 2014
- Breakthrough in creating invisibility cloaks, stealth technology, **Science Daily**, March 31, 2014
- The U.S. Military Is One Step Closer to Having Invisibility Cloaks, **Defense One**, April 2, 2014
- Solar Cells Made Thin, Efficient and Flexible, **Science Daily**, December 09, 2013
- Research team finds way to make solar cells thin, efficient and flexible, **Eurek Alert**, December 09, 2013
- Team finds way to make solar cells thin, efficient and flexible, **Phys.org**, December 9, 2013
- Tapping Solar’s Full Potential, **Photonics.com**, December 10, 2013
- *Printed 3D Metamaterials*, Selected as “**What is Hot in Optics**” by **Optical Society of America (OSA)** in Frontier of Optics/Laser Science Conference, San Jose, CA, October 2011.
- *A Practical Way to Make Invisibility Cloaks*, **MIT Technology Review (on-line)**, **June 2011**.
- *Large-area printed 3D negative-index metamaterial is flexible*, **Featured Article Laser Focus World**, vol 47, Issue 8, Aug 2011.
- Selected for **Cover Image of Laser Focus World**, Vol 47, Issue 8, Aug 2011.

- *Research team develops method to produce large sheets of metamaterials, **Physics Today, June 2011.***
 - *Nanotransfer makes large-area NIMs, **Nanotechweb, June 2011.***
 - *Research team develops method to produce large sheets of metamaterials, **Physics.org, June 2011.***
 - *Practical Invisibility Cloaks, **MIT Technology Review (print edition), Sep-Oct 2011.***
 - *Large Area Nanomanufacturing of Negative Index of Refraction Metamaterials, **National Nanomanufacturing Network, Aug 2011.***
-

PATENT

- **D. Chanda**, D. Franklin, Liquid Crystal Tunable Plasmonic Color Generation Device, Method and Applications, **US Patent: US 11,061,286 B2, Issued: July 13, 2021.**
- **D. Chanda**, S. Modak, A. Safaei, J. Lee, Optical Frequency-Selective Absorber based Infrared Detector, Methods, and Applications, **US Patent: US 11,320,306 B2, Issued: May 3, 2022.**
- **D. Chanda**, A. Vazquez-Guardado, Optoelectronic Device For Multi-Spectral Spectroscopic Identification of the Polymer Composition of an Unknown Plastic Object and Related Methods, Published Patent App. No.: 2017/0336264 Published: Nov. 23, 2017
- **D. Chanda**, A. Safaei, Optical Detector Device with Patterned Graphene Layer and Related Methods **US Patent: US 10,312,389 B2 (Device), Issued: June 4, 2019.**
- **D. Chanda**, A. Safaei, Optical Detector Device with Patterned Graphene Layer and Related Methods **US Patent: US10,784,387 B2 (Methods), Issued: Sept 22, 2020.**
- **D. Chanda**, D. Franklin, Dynamically Tunable, Single Pixel Full-Color Plasmonic Display, Method and Applications, **US Patent: US 10,175,547 B2, Issued: Jan. 8, 2019.**
- **D. Chanda**, M. Leuenberger, A. Safaei, S. Chandra, Plasmon-assisted photothermoelectric effect based detection of infrared radiation on asymmetrically patterned graphene, **US Patent: US 11,217,738 B2, Issued: Jan. 4, 2022.**
- **D. Chanda**, A. Vazquez-Guardado, Molecular Chiralty Detection Technique Using Hybrid Plasmonic Substrates, **US Patent: US 10,801,957 B2, Issued: Oct 13, 2020.**
- **D. Chanda**, D. Franklin, Plasmonic Aluminum Particle-Based Display Device and Related Methods”, **US Patent: 10,921, 680, Issued: Feb 21, 20201.**
- **D. Chanda**, D. Franklin, Inorganic Paint Pigment with Plasmonic Aluminum Reflector Layers and Related Methods, **US Patent: 11,655,377 B2, Issued: May 23, 2023.**
- **D. Chanda**, S. Chandra, Active IR Camouflage Device, Plasmonic System, and Related Methods, **US Patent: 11,619.837 B2, Issued: April 4, 2023.**
- • **D. Chanda**, Rinku Saran, Organic Non-Wettable Superhydrophobic Fullerite Films, US Patent Application.: 63/272,260, Filed: Oct 27, 2021.
- **D. Chanda**, A. Vazquez-Guardado, Method for Detecting Virus using SSDNA Functionalized Sensor, US Patent Application.: 17/661,141, Filed: April 28, 2022.
- **D. Chanda**, Sayan Chandra, Tianyi Guo, Frequency Modulation based IR Sensing, Imaging and Related Methods, US Patent Application.: 63/370,263, Filed: Aug 3, 2022.

Start-ups

1. **E-Skin Displays Inc., California (<http://www.eskindisplays.com>):** The key goal of the company is to develop a novel class of thin-film flexible reflective displays for various applications ranging from e-readers, advertisement billboards, camouflage etc.
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SELECTED CONFERENCE INVITED TALKS and SESSION CHAIR

- **(INVITED) Talk**, “Building Uncooled Infrared Camera based on One Atom Thick Graphene”, NASA Jet Propulsion Lab (JPL), Pasadena, **California**, March 16, 2023.
 - **(INVITED) Talk**, “Structural Color based Sensing”, Samsung Research Lab, Pasadena, **California**, March 15, 2023.
 - **(INVITED) Talk**, “Tunable and multifunctional optoelectronic devices, SPIE Smart Materials Conference Meeting, **Long Beach, California**, March 13-16, 2023.
 - **(KEYNOTE) Talk**, “Building Uncooled Infrared Camera based on One Atom Thick Graphene, IEEE MAPCON Conference, Bangalore, **India**, Dec 12-16, 2022.
 - **(PLENARY) Talk**, “Infrared Imaging”, ExpoIngeniería Conference, Medellin, **Colombia**, Oct 26-29, 2022.
 - **(INVITED) Talk**, “Structural Color based Displays and Paint”, META Conference, **Malaga, Spain**, June, 2022.
 - **(INVITED) Talk**, “Tunable and multifunctional optoelectronic devices, MRS Spring Meeting, **Honolulu, Hawaii**, May 8-13, 2022.
 - **(KEYNOTE) Talk**, “Building Uncooled Infrared Camera based on One Atom Thick Graphene, **Marrakech, Morocco**, May 23-27, 2022.
 - **(INVITED) Talk**, “Structural Color based Displays and Paint”, SPIE Photonics West, **San Francisco, CA**, Jan 8-13, 2022.
 - **(INVITED) Talk**, “Dirac Plasmon-Assisted Asymmetric Hot Carrier Generation for Room-Temperature Infrared Detection”, International Conference on Nano-photonics and Nano-optoelectronics Conference (ICNN), Yokohama, **Japan**, April 20 2021.
 - **(INVITED) Talk**, “*Neurotransmitter Detection and Brain Monitoring*”, Simon Fraser University, Canada, April 7, 2021.
 - **(INVITED) Talk**, “Infrared Detection and Sensing”, NGA-DARPA Symposium, January 6, 2021.
 - **(INVITED) Talk**, “*Adaptive Infrared Signal Control*, **NGA/DoD**, June 18, 2020.
 - **(INVITED) Talk** OSA-Harvard Flat Optics Conference, Washington DC, Feb 25, 2020.
 - **(INVITED) Talk** at II-VI Conference, Chicago, Nov 20, 2019.
 - **(INVITED) Talk** at IEEE IPC Conference, San Antonio, Tx, Oct 01, 2019.
 - **(INVITED) Talk** at IEEE RAPID Conference, Pensacola, FL, Aug 30, 2019.
 - **(INVITED) Talk and Session Chair** at ICMAT Conference, Singapore, June 26, 2019.
 - **(INVITED) Talk** at SPIE Photonics West, San Francisco, Feb 3, 2019.
 - **(INVITED) Talk** at Conference on Electronic Materials and Nanotechnology for Green Environment (ENGE 2018), Jeju Island, South Korea, Nov 11-14, 2018.
 - **(INVITED) Symposium Chair** of META Conference - 2018, Marseille, France, June, 2018.
 - **(INVITED) Talk** at META Conference - 2018, Marseille, France, June, 2018.
 - **(INVITED) Talk** at NASA Jet Propulsion Laboratory, Pasadena, CA, May 21, 2018.
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- **(INVITED) Talk** at SPIE DCS Conference, Orlando, April 2018.
- **(INVITED) Talk** at SPIE Photonics West, San Francisco, January 29, 2018.
- **(INVITED) Talk** at International Display Workshop (IDW-2017), Sendai, Japan, December 7, 2017.
- **(INVITED) Talk** at National University of Singapore (NUS), Singapore, December 12, 2017.
- **(INVITED) Talk** at Conference on Lasers and Electro-Optics Conference (CLEO - Pacific Rim) - 2017, Singapore, August 2, 2017.
- **(INVITED) Talk** at META Conference - 2017, Incheon, South Korea, July 27, 2017.
- **(INVITED) Talk** Electron, Ion, Photon Technology and Nanofabrication Conference - EIPBN 2017, Orlando, Florida, June 2, 2017.
- **(INVITED) Talk** at Optical Society of America's Latin American Optics and Photonics (LAOP) workshop, Guadajara, Mexico, Feb 19-24, 2017.
- **(INVITED) Symposium and Session Chair** of IEEE Photonics Conference, Hawaii, October 2016.
- **(INVITED) Plenary Speaker** of Optical Society of America's Latin American Optics and Photonics (LAOP) conference, Medellin, Colombia, Aug 22-15, 2016.
- **(INVITED)** Optical Society of America (OSA) Advanced Photonics Congress, Vancouver, Canada, July 20, 2016.
- **(INVITED)** Tech Transfer Symposium, CLEO - Conference on Lasers and Electro-Optics, San Jose, CA, June 2016.
- **(INVITED)** Harvard Nanoscribe Laser Lithography Symposium, **Harvard University**, MA, June 22-23, 2016.
- **(INVITED)** OSA Frontier in Optics FiO-2015 Conference, San Jose, CA, October 2015.
- **(INVITED)** Session Chair OSA Frontier in Optics FiO-2015 Conference, San Jose, CA, October 2015.
- **(INVITED)** META-2015 Conference, New York, NY, August 2015
- **(INVITED)** SPIE Photonics West Conference, San Francisco, Feb 12, 2015.
- **(INVITED)** Session Chair SPIE Photonics West Conference, San Francisco, Feb 2015.
- **(INVITED)** OSA Latin America Optics and Photonics Conference (LAOP), Cancun, Mexico, November, 2014.
- **(INVITED)** SPIE Photonics North Conference, Montreal, Canada, May, 2014.
- **(INVITED) Plasmonic Nanostructures for Enhanced Light-Matter Interactions**, NanoFlorida Conference, Gainesville, Florida, September 2013.
- **(INVITED) Fabrication of Metamaterials**, CREOL Industrial Affiliates Day, March 2013.
- **(INVITED) Optical Nanostructures for Enhanced Light-Matter Interactions and Energy Harvesting**, AVS Symposium, Orlando, March 2013.
- **(INVITED) Three-Dimensional Structure Design, Fabrication and Nanopatterning I**, Conference Session Chair, **Frontier of Optics/Laser Science Conference**, San Jose, CA, October 2011.
- **(INVITED) Printing and Molding Approaches for 3D Metamaterials and Plasmonic Crystals**, Invited Talk, **Frontier of Optics/Laser Science Conference**, San Jose, CA, October 2011.
- **(INVITED) Large Area Printed Metamaterials**, Invited Talk, **MRS Spring Meeting**, San Francisco, April 2011.
- **(INVITED) Light Trapping in Thin Silicon Solar Cells**, Invited Talk, iOptics Seminar Series, **University of Illinois, Urbana-Champaign**, Illinois, USA, Feb 2011.

- **(INVITED) Three-Dimensional Nanostructures**, Invited Talk, **DOE Energy Frontier Research Centers** (EFRC) symposium. March 2010.
 - **(INVITED) Diffractive Optics Laser Lithography**, Invited Talk, **California Institute of Technology**, Pasadena, California, USA, June 2009.
 - **(INVITED) Fabrication of 3D Photonic Crystals**, Invited Talk, **University of Illinois, Urbana-Champaign**, Illinois, USA, June 2009.
-

EDITORIAL/REFEREEING ACTIVITIES

- Associate Editor of **Nature** Publishing Group's Scientific Reports Journal
 - Guest Editor **Proceedings of the National Academy of Sciences (PNAS)**
 - Feature Editor Applied Optics Journal
 - **External Reviewer**: National Science Foundation (USA), US Army, European Commission, National Science Foundation of Poland, Université de Bordeaux-France, ROMANIAN - U.S. FULBRIGHT COMMISSION, NSERC Canada, Royal Society-UK, University of Melbourne-Australia, KAIST-South Korea, Swiss National Science Foundation.
 - Reviewer of
 - Nature Nanotechnology, Nature Electronics, PNAS, Science Advances, Scientific Reports, Nature Publishing Group Light Science & Application, Advanced Optical Materials, ACS Photonics, ACS Nano, Nano Letters, Optics Express (OSA journal), Optics Letters, Applied Physics Letters, Journal of Applied Physics (JAP), Journal of Optical Society America-B (JOSA-B), Applied Optics, IEEE Transaction on Nanotechnology, IEEE Transaction on Quantum Electronics, IEEE Journal of Photonics
-

Instructional Activities

- OSE6938Z: Special Topic: Photonic Crystals (*Graduate Course*)
 - OSE6615: Optoelectronic Device Fabrication (*Graduate Course*)
 - IDS 6254: Nanofabrication and Characterization (*Graduate Course*)
 - PHY 3323: Electricity & Magnetism –I (*Upper Level Undergraduate Course*)
 - PHY 4324: Electricity & Magnetism –II (*Upper Level Undergraduate Course*)
-

Dissertation/Theses Directed, Student Graduation and PDF Mentoring

Graduated:

1. Sang Lee, Master of Science (**MS**), NanoScience, Fall 2022.
[Present location: Research Scientist at a Biotech Company, Sofie]
 2. Zuriel Caribe, Master of Science (**MS**), NanoScience, Summer 2021.
[Present location: PhD at MSE UCF]
 3. Sushrut Modak, Master of Science (**MS**), CREOL, Fall 2014.
[Present location: PhD at PHY UCF]
 4. Abraham Vazquez-Guardado, Master of Science (**MS**), CREOL, Spring 2016.
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5. Javaneh Borouman, Physics, **PhD**, graduated Spring 2017.
[Present location: Intel Corp.]
6. Abraham Vazquez-Guardado, CREOL, **PhD**, graduate Spring 2018.
[Present location: ****Tenure-Track Assistant Professor, NC State (NCSU)**]
7. Daniel Franklin, Physics, **PhD**, graduated Spring 2018.
[Present location: ****Tenure-Track Assistant Professor, University of Toronto**]
8. Alireza Safaei, Physics, **PhD**, Graduated Spring 2019.
[Present location: Post-Doctoral Fellow UIUC]

Post-Doc Mentoring:

- Dr. Sayan Chandra 2016-2020 (Present: **** Tenure-Track Assistant Professor, Appalachian State University, North Carolina**)
- Dr. Rinku Saran 2018-20 (Present: Research Assistant, Nanyang Technological University (NTU), **Singapore**)
- Dr. Pablo Manuel Cencillo 2018-till date
- Dr. Souptik Mukherjee 2020-till date
- Dr. Muhammad Waqas Shabbir 2021-till date
- Dr. Arindam Dasgupta 2022-till date
- Dr. Manobina Karmakar 2022-till date

Past and Present Industrial Consulting Activities

- Toyota Corporation
- EPIR Inc., Chicago
- E-Skin Displays Inc., California
- Siva Labs, Chicago
- EMX Internationals
- Moxtek Corporation
- VC Golf Ball Products
- Lee Lasers
- City Labs

Professional Service Activities

- **Symposium Chair** *SPIE Photonics West Conference*, San Francisco, 2019 – till date.
- **Symposium Chair** *OSA CLEO Conference*, San Jose, 2023 – till date.
- **Chair and Organizer** of “Structural Color Symposium” of *META Conference* (International Conference on Metamaterials and Plasmonics) – 2017 – till date.
- **Chair** of IEEE Photonics Conference (IPC-2016-17) Nanophotonics Symposium.
- Organizing Committee Member of OSA Novel Optical Materials and Applications (2014-2018).
- Organizing Committee Member of Latin America Optics and Photonics Conference (LOAP) (2104-2018).
- Executive committee member of the Optical Society of America (OSA)'s Optical Fabrication and Testing Technical Group (2015-2018).

- Member of the UCF **University level Conflict of Interest (COI)** committee (2017-Nov 2022).
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