

Zhaoyang (Frank) Fan, Ph.D.

Professor of Electrical and Computer Engineering
Adjunct Professor of Physics

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Education

- Ph.D. in Electrical Engineering, 2001
Department of Electrical and Computer Engineering
Northwestern University, Evanston, Illinois, USA
- M.E. in Nuclear Engineering, 1994
Institute of Nuclear and New Energy Technology
Tsinghua University, Beijing, China
- B.E. in Engineering Physics, 1991
Department of Engineering Physics
Tsinghua University, Beijing, China

Experience

- Professor, 09/2018 – Present
Texas Tech University, Department of Electrical and Computer Engineering
Lubbock, Texas, USA
- Associate Professor, 09/2014 – 08/2018
Assistant Professor, 01/2008 – 08/2014
Adjunct Professor (Physics), 2015 –
Texas Tech University, Department of Electrical and Computer Engineering
Lubbock, Texas, USA
- VP of Research, 07/2005 – 12/2007
Senior Scientist, 06/2003 – 05/2005
III-N Technology Inc.
Manhattan, Kansas, USA
- Postdoctoral Research Associate, 2001 –2003
Kansas State University, Department of Physics
Manhattan, Kansas, USA
- Research Scientist, 1994 –1996
Tsinghua University, Institute of Nuclear and New Energy Technology
Beijing, China

Research Interests

My researches concern wide bandgap semiconductors and functional oxides for electronic/photonics devices; perovskite photovoltaic materials; nanomaterials for batteries and supercapacitors. Through collaboration, I also work on nanotechnology-based nutrient/drug delivery for chronic diseases.

I have published more than one hundred scientific publications and given one hundred invited talks or conference presentations, as well as a dozen of patents. Based on Google Scholar, my publication

citation is close to 5000 with an h-index of 39.

Before joining Texas Tech in 2008, I was a principle investigator and then VPR in a startup from 2003, leading the R&D efforts in developing MicroLED display and high-voltage LED lighting technologies. As one of the pioneers in developing MicroLED technology, I contributed to the emergence of new generation of display. I am currently exploring the commercialization potential of AC-SupercapTM, toward disruption of electrolytic capacitors in the low voltage market. I have been a senior member and now Red Raider Inventor of Texas Tech University System and was elected to the Inaugural Class of Senior Members, National Academy of Inventors in 2019.

Couse Teaching

Solid State Devices
Advanced Semiconductor Devices
Renewable Energy Generation and Storage
Optical Fiber Communication
Electromagnetic Theory I
Electromagnetic Theory II
General Electrical Engineering

Awards and Editorial Roles

- 2020 The President’s Innovation Award of Texas Tech University System
- 2019- Elected to the Inaugural Class of Senior Members, National Academy of Inventors
- 2019- Editorial Board Member of *Electronics*
- 2018-2019 Guest Editor of *Materials*
- 2018 2018 TechConnect Innovation Award
- 2018 Red Raider Inventor, Texas Tech University System
- 2017-2020 Ed and Linda Whitacre Faculty Fellowship
- 2017 Senior Member, TTU System Chapter of National Academy of Inventors
- 2016 Whitacre Engineering Research Award
- 2016 TTU Transdisciplinary Research Academy Award
- 2012 Senior Member, Institute of Electrical and Electronics Engineers (IEEE)

Current and Previous Funded Projects

- Manufacturing of High-Performance Lithium-Sulfur Batteries Using Microbial Nanomachines
Funding Source: National Science Foundation
Role: PI Total Award: \$380,971 Share: 50%
Award Period: 09/2019 – 08/2022
- Browning White Adipose Tissue for Diabetes Treatment
Funding Source: National Institutes of Health
Role: co-PI Total Award: \$435,755 Share: 8%
Award Period: 06/2019 – 05/2022
- STTR Phase I: AC-Supercapacitors for Power Applications
Funding Source: National Science Foundation
Role: co-PI Total Award: \$225,000 Share: 41%
Award Period: 06/2018 – 08/2019

- I-Corps: Supercapacitors for Power Applications
Funding Source: National Science Foundation
Role: PI Total Award: \$50,000 Share: 100%
Award Period: 10/2017 – 03/2019
- Plaque-targeted nanocarriers for atherosclerosis diagnosis and treatment
Funding Source: TTU System Presidents' Collaborative Research Initiative
Role: co-PI Total Award: \$44,553 Share: 33%
Award Period: 09/2017 – 08/2018
- AC-Supercapacitors
Funding Source: TTU Spark Fund
Role: PI Total Award: \$56,464 Share: 100%
Award Period: 05/2017 – 05/2018
- Supporting the Global Laboratory for Energy Asset Management and Microgrid (GLEAMM)
Funding Source: TX Emerging Technology Fund
Role: co-PI Total Award: \$3,100,000 Share: 3%
Award Period: 03/2017 – 05/2018
- Studies of AlGaIn Solar-Blind Photodetectors
Funding Source: Bolb Inc.
Role: PI Total Award: \$300,000 Share: 100%
Award Period: 10/2016 – 08/2018
- High Density Capacitors: Bridging the Performance Gap Between Conventional Capacitors and Electric Double Layer Capacitors
Funding Source: National Science Foundation
Role: PI Total Award: \$355,573 Share: 100%
Award Period: 08/2016 – 07/2020
- Nanodevices and Chronic Disease Theranostics
Funding Source: TTU Transdisciplinary Research Academy
Role: PI Total Award: \$4,000 Share: 50%
Award Period: 05/2016 – 04/2017
- Research on Nitride Semiconducting Materials for Light Emitters and Detectors
Funding Source: Bolb Inc.
Role: PI Total Award: \$100,000 Share: 100%
Award Period: 04/2016 – 12/2017
- Research on Nitride Semiconducting Materials for Light Emitters and Detectors
Funding Source: Bolb Inc.
Role: PI Total Award: \$100,000 Share: 100%
Award Period: 03/2015 – 03/2016
- Organometal Halide Perovskites: Sequential Vapor Deposition and Device Study Toward Highly Efficient Thin-Film Solar Cells
Funding Source: National Science Foundation
Role: PI Total Award: \$345,000 Share: 100%
Award Period: 09/2014 – 02/2018
- Oxide/Quantum-Dots Superlattice Based Photo-electrodes
Funding Source: TTU Proposal Stimulus Program
Role: PI Total Award: \$20,000 Share: 100%
Award Period: 04/2013 – 03/2014

- Diamond Schottky Barrier Based Alpha Voltaic Energy Sources
Funding Source: Athena Energy/Army Research Lab
Role: PI Total Award: \$50,000 Share: 50%
Award Period: 11/2012 – 10/2013
- Electrically Controlled Metal-Insulator Transition and Its Terahertz Applications
Funding Source: National Science Foundation
Role: PI Total Award: \$396,000 Share: 34%
Award Period: 09/2011 – 08/2014
- Nanophotonic Devices Research
Funding Source: US Army
Role: co-PI Total Award: \$1,402,000 Share: 16%
Award Period: 09/2010 – 08/2011
- MRI: Acquisition of a Molecular Beam Epitaxy System for Nano-Engineered AlGaInN
Optoelectronic Devices: Research, Training, and Education
Funding Source: National Science Foundation
Role: co-PI Total Award: \$646,520 Share: 20%
Award Period: 09/2009 – 08/2012
- Nanophotonic Devices Research
Funding Source: US Army
Role: co-PI Total Award: \$1,358,460 Share: 12%
Award Period: 09/2009 – 08/2010
- AlGaIn/GaN Heterostructure Based DNA Field-Effect
Funding Source: Texas Tech University
Role: PI Total Award: \$35,000 Share: 100%
Award Period: 09/2008 – 08/2009
- Nanophotonic Devices Research
Funding Source: US Army
Role: co-PI Total Award: \$1,420,000 Share: 12%
Award Period: 09/2008 – 08/2009
- Instrumentation: Phillips X'Pert Four-Crystal X-ray Diffractometer
Funding Source: Texas Tech University
Role: co-PI Total Award: \$14,700 Share: 50%
Award Period: 06/2008 – 05/2009
- 3D Integrated Microdisplays Based on InGaIn/AlGaInP Semiconductor Micro-emitters
Funding Source: US Army
Role: PI Total Award: \$70,000 Share: 100%
Award Period: 01/2007 – 06/2007
- Rare Earth Doped III-Nitrides for Optical Communications
Funding Source: Army Research Office
Role: PI Total Award: \$661,125 Share: 34%
Award Period: 05/2006 – 04/2008
- SBIR II: Microdisplays Based on III-Nitride Wide Band Gap Semiconductors
Funding Source: National Science Foundation
Role: PI Total Award: \$492,000 Share: 100%
Award Period: 02/2005 – 01/2007

- SBIR I: Microdisplays Based on III-Nitride Wide Band Gap Semiconductors
Funding Source: National Science Foundation
Role: PI Total Award: \$100,000 Share: 100%
Award Period: 01/2004 – 06/2004

Patents and Applications

1. Shu Wang, Ling Zhao, Zhaoyang Fan, “Particles for Targeted Delivery of Molecules into Adipose Stromal Cells”, U.S. Patent Application 62/633,300. February 2019
2. Zhaoyang Fan, “High Frequency Supercapacitors and Methods of Making Same”, PCT/US18/29812
3. Shu Wang, Guigen Li, and Zhaoyang Fan; “Nanoparticle-Based Delivery System with Oxidized Phospholipids as Target Ligands for the Prevention, Diagnosis and Treatment of Atherosclerosis”, US20140287024.
4. Jacob Day, Jing Li, Donald Lie, Zhaoyang Fan, Jingyu Lin, Hongxing Jiang; “CMOS IC for micro-emitter based microdisplay”, US Patent 9,047,818
5. Zhaoyang Fan, Jingyu Lin, and Hongxing Jiang, “Heterogeneous Integrated High Voltage DC/AC Light Emitter”, US 7221044.
6. Jing Li, Zhaoyang Fan, Jingyu Lin, and Hongxing Jiang, “Extreme Ultraviolet (EUV) Detectors Based upon Aluminum Nitride (AlN) Wide Bandgap Semiconductors”, US 7498645.
7. Zhaoyang Fan, “Light Emitting Diode Lamp”, US 7525248.
8. Zhaoyang Fan, Jingyu Lin, and Hongxing Jiang, “Micro-LED Based High Voltage AC/DC Indicator Lamp”, US 7535028.
9. Zhaoyang Fan, Jing Li, Jingyu Lin, and Hongxing Jiang, “AC/DC Light Emitting Diodes with Integrated Protection Mechanism”, US 7714348.
10. Zhaoyang Fan, Jing Li, Jingyu Lin, and Hongxing Jiang, “Micro-Emitter Array Based Full-Color Microdisplay”, US 8058663.
11. Zhaoyang Fan, Jingyu Lin, and Hongxing Jiang, “Light emitting diode lamp capable of high AC/DC voltage operation”, US 8272757
12. Frank Yue Jiang and Zhaoyang Fan, “Biological Sensors System”, US 20090075843 A1
13. Zhaoyang Fan, Jingyu Lin, and Hongxing Jiang, “The Encapsulation and Packaging of Ultraviolet and Deep-Ultraviolet Light Emitting Diodes”, WO 2006071327 A1
14. Zhaoyang Fan, Jingyu Lin, and Hongxing Jiang, “III-Nitride Quantum-Well Field Effect Transistors”, US 20050133816 A1.

Journal Papers:

1. Shiqi Li, Dan Leng, Wenye Li, Long Qie, Zhihua Dong, Zhiqun Cheng, Zhaoyang Fan, “Recent Progress in Developing Li₂S Cathodes for Li-S Batteries”, *Energy Storage Materials*, DOI: 10.1016/j.ensm.2020.02.010
2. Shiqi Li, Zhaoyang Fan, “Advances in Electrochemical Energy Materials”, *Materials*, **13** (4), 844 (2020). DOI: 10.3390/ma13040844

3. Shiqi Li, Junjie Jiang, Zihua Dong, Jun Wu, Zhiqun Cheng, Huacheng Zhu, Zhaoyang Fan, Yutian Wang, Dan Leng, “Ferroconcrete-inspired construction of self-supporting Li₂S cathode for high-performance lithium–sulfur batteries”, *Microporous and Mesoporous Materials*, **293**, 109822 (2020). DOI: 10.1016/j.micromeso.2019.109822
4. Haoran Lai, Wenyue Li, Yang Zhou, Tianyu He, Ling Xu, Siyu Tian, Xiaoming Wang, Zhaoyang Fan, Zhongli Lei, Huan Jiao, “Hydrophilically engineered polyacrylonitrile nanofiber aerogel as a soft template for large mass loading of mesoporous poly(3,4-ethylenedioxythiophene) network on a bare metal wire for high-rate wire-shaped supercapacitors”, *Journal of Power Sources*, **441**, 227212 (2019). DOI: 10.1016/j.jpowsour.2019.227212
5. Wenyue Li, Nazifah Islam, Sakibul Azam, Zhen Xu, Juliusz Warzywoda, Zhaoyang Fan, “ZIF-67-derived edge-oriented graphene clusters coupled with carbon nanotubes containing encapsulated Co nanoparticles for high-frequency electrochemical capacitors”, *Sustainable Energy & Fuels*, **3**, 3029 – 3037 (2019). DOI: 10.1039/C9SE00503J
6. Milinda Pattanayak, Md Nadim F Hoque, Yong Zhao, Zhaoyang Fan, Ayrton Bernussi, “Tunable VO₂ relaxation oscillators for analog applications”, *Semiconductor Science and Technology*, **34**, 105028 (2019). DOI: 10.1088/1361-6641/ab38f3
7. Wenyue Li, Nazifah Islam, Guofeng Ren, Shiqi Li, Zhaoyang Fan, “AC-Filtering Supercapacitors Based on Edge Oriented Vertical Graphene and Cross-Linked Carbon Nanofiber”, *Materials* **12**, 604, (2019). DOI: 10.3390/ma12040604
8. Nazifah Islam, Md Nadim Ferdous Hoque, Wenyue Li, Shu Wang, Juliusz Warzywoda, Zhaoyang Fan, “Vertically edge-oriented graphene on plasma pyrolyzed cellulose fibers and demonstration of kilohertz high-frequency filtering electrical double layer capacitors”, *Carbon*, **141**, 523-530 (2019). DOI: 10.1016/j.carbon.2018.10.012
9. Shiqi Li, Zhaoyang Fan, “Nitrogen-doped carbon mesh from pyrolysis of cotton in ammonia as binder-free electrodes of supercapacitors”, *Microporous and Mesoporous Materials*, **274**, 313-317, (2019). DOI: 10.1016/j.micromeso.2018.09.002
10. Ye Zhang, Dejie Meng, Xiao Li, Honghao Yu, Jianjun Lai, Zhaoyang Fan, and Changhong Chen, “Significantly enhanced infrared absorption of graphene photodetector under surface-plasmonic coupling and polariton interference”, *Optical Express*, **26**, 30862-30872 (2018). DOI: 10.1364/OE.26.030862
11. Milinda Pattanayak, Md Nadim Ferdous Hoque, Zhaoyang Fan, Ayrton Bernussi, “Electrical oscillation generation with current-induced resistivity switching in VO₂ micro-channel devices”, *Science and Technology of Advanced Materials*, **19**, 693-701 (2018). DOI:10.1080/14686996.2018.1521249
12. Md Nadim Ferdous Hoque, Rui He, Juliusz Warzywoda, Zhaoyang Fan, “Effects of Moisture-Based Grain Boundary Passivation on Cell Performance and Ionic Migration in Organic–Inorganic Halide Perovskite Solar Cells”, *ACS Applied Materials & Interfaces*, **10**, 30322–30329 (2018). DOI:10.1021/acsami.8b08981
13. Nazifah Islam, Shu Wang, Juliusz Warzywoda, Zhaoyang Fan, “Fast supercapacitors based on vertically oriented MoS₂ nanosheets on plasma pyrolyzed cellulose filter paper”, *Journal of Power Sources*, **400**, 277-283 (2018). DOI: 10.1016/j.jpowsour.2018.08.049

14. Guofeng Ren, Ruibo Zhang, Zhaoyang Fan, “VO₂ nanoparticles on edge orientated graphene foam for high rate lithium ion batteries and supercapacitors”, *Applied Surface Science*, **441**, 466-473 (2018). DOI: 10.1016/j.apsusc.2018.02.059
15. Yongqiang Jiang , Yu Zhang , Zhaoyang Fan , Peng Wang , Xiaohong Li , Yingwei Wang , Jianqiang Shen , Sheng Liu , Jingdi Zhang , Zhong-Jian Yang , Si Xiao, Yongli Gao , Jun He, “The abnormal nonlinear optical properties of hybrid graphene-TiO₂ nanostructures”, *Optics Letters*, **43**, 523-526 (2018). DOI: 10.1364/OL.43.000523
16. Yujiao Zu, Haley Overby, Guofeng Ren, Zhaoyang Fan, Ling Zhao, Shu Wang, “Resveratrol liposomes and lipid nanocarriers: comparison of characteristics and inducing browning of white adipocytes”, *Colloids and Surfaces B: Biointerfaces*, **164**, 414-423 (2018). DOI: 10.1016/j.colsurfb.2017.12.044
17. Nazifah Islam, Juliusz Warzywoda, Zhaoyang Fan, “Edge-oriented graphene on carbon nanofiber for high-frequency supercapacitors”, *Nano-Micro Letters* **10**, 9 (2018). DOI: 10.1007/s40820-017-0162-4. (**Highlighted in the front cover page**)
18. Yu-Che Ho, Md Nadim Ferdous Hoque, Elizabeth Stoneham, Juliusz Warzywoda, Tim Dallas, Zhaoyang Fan, “Reduction of oxygen vacancy related traps in TiO₂ and the impacts on hybrid perovskite solar cells”, *Journal of Physical Chemistry C* **121**, 23939–23946 (2017). DOI: 10.1021/acs.jpcc.7b08384
19. Shiqi Li, Juliusz Warzywoda, Shu Wang, Guofeng Ren, Zhaoyang Fan, “Bacterial Cellulose Derived Carbon Nanofiber Aerogel with Lithium Polysulfide Catholyte for Lithium–Sulfur Batteries”, *Carbon* **124**, 212-218 (2017). DOI:10.1016/j.carbon.2017.08.062
20. Nazifah Islam, Shiqi Li, Guofeng Ren, Yujiao Zu, Juliusz Warzywoda, Shu Wang, Zhaoyang Fan, “High-frequency electrochemical capacitors based on plasma pyrolyzed bacterial cellulose aerogel for current ripple filtering and pulse energy storage”, *Nano Energy*, **40**, 107-114 (2017). DOI: 10.1016/j.nanoen.2017.08.015
21. Zhaoyang Fan, Nazifah Islam, Stephen B. Bayne, “Towards Kilohertz Electrochemical Capacitors for Filtering and Pulse Energy Harvesting”, *Nano Energy*, **39**, 306-320 (2017). DOI: 10.1016/j.nanoen.2017.06.048
22. Ali Eftekhair, Zhaoyang Fan, “Ordered Mesoporous Carbon and Its Applications for Electrochemical Energy Storage and Conversion”, *Material Chemistry Frontiers*, **1**, 1001-1027 (2017). DOI: 10.1039/C6QM00298F
23. Shiqi Li, Tong Mou, Guofeng Ren, Juliusz Warzywoda, Zidong Wei, Bin Wang, Zhaoyang Fan, “Gel Based Sulfur Cathodes with High Sulfur Content and Large Mass Loading for High-Performance Lithium-Sulfur Batteries”, *Journal of Materials Chemistry A*, **5**, 1650-1657 (2017). DOI: 10.1039/C6TA09841J (**2016-2017 Journal of Materials Chemistry A HOT Papers**)
24. Shiqi Li, Guofeng Ren, Md Nadim Ferdous Hoque, Zhihua Dong, Juliusz Warzywoda, Zhaoyang Fan, “Carbonized cellulose paper as an effective interlayer in lithium-sulfur batteries”, *Applied Surface Science*, **396**, 637-643 (2017). DOI: 10.1016/j.apsusc.2016.10.208
25. Jia Zhang, Yujiao Zu, Chathurika S Dhanasekara, Jun Li, Dayong Wu, Zhaoyang Fan, Shu Wang, “Detection and treatment of atherosclerosis using nanoparticles”, *WIREs Nanomedicine and*

Nanobiotechnology, **9**, e1412 (2017). DOI: 10.1002/wnan.1412. **(invited)**

26. Guofeng Ren, Shiqi Li, Zhao-Xia Fan, Juliusz Warzywoda, Zhaoyang Fan, “Soybean-derived hierarchical porous carbon with large sulfur loading and sulfur content for high-performance lithium-sulfur batteries”, *Journal of Materials Chemistry A* **4**, 16507-16515 (2016). DOI: 10.1039/C6TA07446D
27. Md Nadim Ferdous Hoque, Nazifah Islam, Zhen Li, Guofeng Ren, Kai Zhu, Zhaoyang Fan, “Ionic and Optical Properties of Methylammonium Lead Iodide Perovskite across Its Tetragonal-Cubic Structural Phase Transition”, *ChemSusChem* **9**, 2692-2698 (2016). DOI: 10.1002/cssc.201600949
28. Shiqi Li, Tong Mou, Guofeng Ren, Juliusz Warzywoda, Bin Wang, Zhaoyang Fan, “Confining Sulfur Species in Cathodes of Lithium–Sulfur Batteries: Insight into Nonpolar and Polar Matrix Surfaces”, *ACS Energy Letters*, **1**, 481–489 (2016). DOI: 10.1021/acsenerylett.6b00182
29. Guofeng Ren, Shiqi Li, Zhao-Xia Fan, Md Nadim Ferdous Hoque, Zhaoyang Fan, “Ultrahigh-rate supercapacitors with large capacitance based on edge oriented graphene coated carbonized cellulose paper as flexible freestanding electrodes”, *Journal of Power Sources*, **325**, 152-160 (2016). doi:10.1016/j.jpowsour.2016.06.021
30. Md Nadim Ferdous Hoque, Mengjin Yang, Zhen Li, Nazifah Islam, Xuan Pan, Kai Zhu, Zhaoyang Fan, “Polarization and Dielectric Study of Methylammonium Lead Iodide Thin Film to Reveal its Nonferroelectric Nature under Solar Cell Operating Conditions”, *ACS Energy Letters*, **1**, 142–149 (2016). doi: 10.1021/acsenerylett.6b00093
31. Guofeng Ren, Md Nadim Ferdous Hoque, Jianwei Liu, Juliusz Warzywoda, Zhaoyang Fan, “Perpendicular Edge Oriented Graphene Foam Supporting Orthogonal TiO₂(B) Nanosheets as Freestanding Electrode for Lithium Ion Battery”, *Nano Energy*, **21**, 162-171 (2016); DOI: 10.1016/j.nanoen.2016.01.010 **(Highlighted on the front cover page)**
32. Nazifah Islam, Mengjin Yang, Kai Zhu, Zhaoyang Fan, “Mesoporous scaffolds based on TiO₂ nanorods and nanoparticles for efficient hybrid perovskite solar cells”, *Journal of Materials Chemistry A* **3**, 24315-24321 (2015); DOI: 10.1039/C5TA06727H
33. Shufang Nie, Jia Zhang, Raul Martinez-Zaguilan, Souad Sennoune, Md Nazir Hossen, Alice H Lichtenstein, Jun Cao, Gary E Meyerrose, Ralph Paone, Suthipong Soontrapa, Zhaoyang Fan, Shu Wang, “Detection of atherosclerotic lesions and intimal macrophages using CD36-targeted nanovesicles”, *Journal of Controlled Release*, **220**, 61-70 (2015); DOI: 10.1016/j.jconrel.2015.10.004
34. Guofeng Ren, Md Nadim Ferdous Hoque, Xuan Pan, Juliusz Warzywoda, Zhaoyang Fan, “Vertically aligned VO₂(B) nanobelt forest and its three-dimensional structure on oriented graphene for energy storage”, *Journal of Materials Chemistry A* **3**, 10787-10794 (2015); DOI: 10.1039/C5TA01900A **(2015 Journal of Materials Chemistry A Hot Article)**
35. Deji Meng, MNF Hoque, Wei Wang, Zhaoyang Fan, Kejia Wang, Jianjun Lai, Changhong Chen, “Controllable near-field intensity and spot size of hybrid terahertz metamaterial”, *Optics Letters* **40**, 1745-1748 (2015); DOI: 10.1364/OL.40.001745

36. Md Nadim Ferdous Hoque, Gulden Karaoglan-Bebek, Mark Holtz, Ayrton A Bernussi, and Zhaoyang Fan, "High performance spatial light modulators for terahertz applications", *Optics Communications* **350**, 309-314 (2015); DOI: 10.1016/j.optcom.2015.04.022 (IF: 1.588)
37. M. Nazari, Y. Zhao, Z. Y. Fan, K. Ziemer, A.A. Bernussi, and M. Holtz, "Current-induced formation of stable M2-phase vanadium dioxide", *Journal of Physics D: Applied Physics* **48**, 135101 (2015); DOI: 10.1088/0022-3727/48/13/135101
38. Xuan Pan, Guofeng Ren, Md Nadim Ferdous Hoque, Stephen Bayne, Kai Zhu, and Zhaoyang Fan, "Fast Supercapacitors Based on Graphene-Bridged V₂O₃/VO_x Core-Shell Nanostructure Electrodes with a Power Density of 1 MW kg⁻¹", *Advanced Materials Interfaces*, **1**, 1400398 (2014); doi: 10.1002/admi.201400398
39. G. Karaoglan-Bebek, M. N. F. Hoque, M. Holtz, Z. Fan, and A. A. Bernussi, "Continuous tuning of W-doped VO₂ optical properties for terahertz analog applications", *Applied Physics Letters*, **105**, 201902 (2014); doi: 10.1063/1.4902056
40. Xuan Pan, Kai Zhu, Guofeng Ren, Nazifah Islam, Juliusz Warzywoda, and Zhaoyang Fan, "Electrocatalytic properties of a vertically oriented graphene film and its application as a catalytic counter electrode for dye-sensitized solar cells", *Journal of Materials Chemistry A*, **2**, 12746-12753 (2014).
41. Yong Zhao, Gulden Karaoglan-Bebek, Xuan Pan, Mark Holtz, Ayrton A. Bernussi, and Zhaoyang Fan, "Hydrogen-doping stabilized metallic VO₂ (R) thin films and their application to suppress Fabry-Perot resonances in the terahertz regime", *Applied Physics Letters*, **104**, 241901 (2014); doi: 10.1063/1.4884077
42. Shibin Li, Xuan Pan, Lindsay K. Wallis, Zhaoyang Fan, ZuLiang Chen, Stephen A. Diamond, "Comparison of TiO₂ nanoparticle and graphene-TiO₂ nanoparticle composite phototoxicity to *Daphnia magna* and *Oryzias latipes*", *Chemosphere*, **112**, 62-69 (2014).
43. Robert J. Fullerton, Daniel P. Cole, Kristopher D. Behler, Sriya Das, Fahmida Irin, Dorsa Parviz, M.N.F. Hoque, Zhaoyang Fan, Micah J. Green, "Graphene non-covalently tethered with magnetic nanoparticles", *Carbon*, **72**, 192-199 (2014).
44. Guofeng Ren, Xuan Pan, Stephen Bayne, and Zhaoyang Fan, "Kilohertz ultrafast electrochemical supercapacitors based on perpendicularly-oriented graphene grown inside of nickel foam", *Carbon*. **71**, 94-101 (2014).
45. Subash Vegesna, Yanhan Zhu, Yong Zhao, Zhaoyang Fan, Ayrton Bernussi, Mohammad Saed, "Terahertz Frequency Selective Surface with Reconfigurable Polarization Characteristics Using Vanadium Dioxide", *Journal of Electromagnetic Waves and Applications*, **28**, 83-90 (2014).
46. M. Sun, S. Nie, X. Pan, R. Zhang, Z. Fan, S. Wang, "Quercetin-Nanostructured Lipid Carriers: Preparation, Characteristics, Anti-Breast Cancer Activities in Vitro and Intravenous Pharmacokinetics in Rats", *Colloids and Surfaces B: Biointerfaces*, **113**, 15 (2014).
47. Yong Zhao, Changhong Chen, Xuan Pan, Yanhan Zhu, Mark Holtz, Ayrton Bernussi, and Zhaoyang Fan, "Tuning the properties of VO₂ thin-films through growth temperature for infrared and terahertz modulation applications", *J. Appl. Phys.* **114**, 113509 (2013).
48. Xuan Pan, Yong Zhao, Guofeng Ren, and Zhaoyang Fan, "Highly conductive VO₂ treated with hydrogen for supercapacitors", *Chem. Comm.* **49**, 3943, (2013).

49. M. Nazari, Y. Zhao, V. Hallum, A. A. Bernussi, Z.Y. Fan, M. Holtz, "Finite size effect on the phase transition of vanadium dioxide", *Appl. Phys. Lett.* **103**, 043108 (2013)
50. Yanhan Zhu, Subash Vegesna, Yong Zhao, Vladimir Kuryatkov, Mark Holtz, Zhaoyang Fan, Mohammad Saed, and Ayrton A. Bernussi, "Tunable dual-band terahertz metamaterial bandpass filters", *Optics Lett.* **38**, 2382 (2013).
51. R. C. de Pace, X. Liu, M. Sun, S. Nie, J. Zhang, Q. Cai, W. Gao, X. Pan, Z. Fan, and S. Wang, "Anticancer activities of (-)-epigallocatechin-3-gallate encapsulated nanoliposomes in MCF7 breast cancer cells", *J. Liposome Res.* **23**, 187-196 (2013).
52. M. Nazari, Y. Zhao, V. V. Kuryatkov, Z. Y. Fan, A. A. Bernussi, and M. Holtz, "Temperature dependence of the optical properties of VO₂ deposited on sapphire with different orientations", *Phys. Rev. B* **87**, 035142 (2013).
53. X. Pan, Y. Zhao, S. Liu, C. L. Korzeniewski, S. Wang, and Zhaoyang Fan, "Comparing Graphene-TiO₂ Nanowire and Graphene-TiO₂ Nanoparticle Composite Photocatalysts", *ACS Appl. Mater. Interfaces* **4**, 3944 (2012).
54. Y. Zhu, Y. Zhao, M. Holtz, Z. Y. Fan, and A. Bernussi, "Effect of substrate orientation on terahertz optical transmission through VO₂ thin films and application to functional antireflection coatings", *J. Opt. Soc. Am. B* **29**, 2373 (2012)
55. Xuan Pan, Yong Zhao, and Zhaoyang Fan, "TiO₂ Nanostructures by Electrochemical Anodization for Dye-Sensitized Solar Cells", *Nanoscience and Nanotechnology Lett.* **4**, 463-470 (2012). (Invited)
56. Yong Zhao, Joon Hwan Lee, Yanhan Zhu, M. Nazari, Changhong Chen, Haiyan Wang, Ayrton Bernussi, Mark Holtz, and Zhaoyang Fan, "Structural, electrical, and terahertz transmission properties of VO₂ thin films grown on c-, r-, and m-plane sapphire substrates", *J. Appl. Phys.* **111**, 053533 (2012).
57. Yong Zhao, Ji Hao, Changhong Chen, and Zhaoyang Fan, "Electrically controlled metal-insulator transition process in VO₂ thin films", *J. Phys.: Condens. Matter* **24**, 035601 (2012).
58. Yahya Alivov, Pan Xuan, Z. Y. Fan, "TiO₂ nanotube height effect on the efficiency of dye-sensitized solar cells", *J. Nanopart. Res.* **13**:7159–7165 (2011).
59. M. Nazari, Changhong Chen, A. A. Bernussi, Z. Y. Fan, and M. Holtz, "Effect of free-carrier concentration on the phase transition and vibrational properties of VO₂", *Appl. Phys. Lett.* **99**, 071902 (2011).
60. Changhong Chen, Yong Zhao, Xuan Pan, V. Kuryatkov, A. Bernussi, M. Holtz, and Zhaoyang Fan, "Influence of defects on structural and electrical properties of VO₂ thin films", *J. Appl. Phys.* **110**, 023707 (2011).
61. Xuan Pan, Changhong Chen, Kai Zhu, Zhaoyang Fan, "TiO₂ Nanotubes Infiltrated with Nanoparticles for Dye Sensitized Solar Cells", *Nanotechnology* **22**, 235402, 2011.
62. C. Chen, Y. Zhu, Y. Zhao, J. H. Lee, H.Y. Wang, A. Bernussi, M. Holtz, and Zhaoyang Fan, "VO₂ multidomain heteroepitaxial growth and terahertz transmission modulation", *Appl. Phys. Lett.* **97**, 211905 (2010).

63. Sandeep Sohal, Yahya Alivov, Zhaoyang Fan, and Mark Holtz, "Role of Phonons in the Optical Properties of Magnetron Sputtered ZnO Studied by Resonance Raman and Photoluminescence", *J. Appl. Phys.* **108**, 053507, (2010).
64. Y. Alivov and Z. Y. Fan, "Dye-sensitized solar cells using TiO₂ nanoparticles transformed from nanotube arrays", *J. Mater. Sci.* **45**, 2902–2906 (2010).
65. C. Chen and Z. Y. Fan, "Changes in VO₂ band structure induced by charge localization and surface segregation", *Appl. Phys. Lett.* **95**, 262106 (2009).
66. Y. Alivov and Z. Y. Fan, "Efficiency of dye sensitized solar cells based on TiO₂ nanotubes filled with nanoparticles", *Appl. Phys. Lett.* **95**, 063504 (2009).
67. Y. Alivov and Z. Y. Fan, "TiO₂ nanostructure transformation: from ordered nanotubes to nanoparticles", *Nanotechnology* **20**, 405610 (2009).
68. Y. Alivov, Z. Y. Fan, and D. Johnstone, "Titanium nanotubes grown by titanium anodization", *J. Appl. Phys.* **106**, 034314 (2009).
69. Y. Alivov and Z. Y. Fan, "A Method for Fabrication of Pyramid-Shaped TiO₂ Nanoparticles with a High {001} Facet Percentage", *J. Phys. Chem. C*, **113**, 12954 (2009).
70. Y. Alivov, M. Pandikunta, S. Nikishin, and Z. Y. Fan, "The anodization voltage influence on the properties of TiO₂ nanotubes grown by electrochemical oxidation", *Nanotechnology* **20**, 225602(2009).
71. Z. Y. Fan, J. Y. Lin, and H. X. Jiang, "III-nitride micro-emitter arrays: development and applications", *J. Phys. D: Appl. Phys.* **41**, 094001(2008). **Invited.**
72. R. Dahal, J. Li, Z. Y. Fan, M. L. Nakarmi, T. M. Al Tahtamouni, J. Y. Lin, H. X. Jiang, "AlN MSM and Schottky photodetectors", *Phys. Stat. Sol. (c)*, **5**, 2148 (2008).
73. R. Dahal, T.M. Al Tahtamouni, Z. Y. Fan, J. Y. Lin, and H. X. Jiang, "Hybrid AlN–SiC deep ultraviolet Schottky barrier photodetectors", *Appl. Phys. Lett.*, **90**, 263505 (2007).
74. J. Li, Z.Y. Fan, R. Dahal, M. L Nakarmi, J. Y. Lin, and H. X. Jiang, "200 nm deep ultraviolet photodetectors based on AlN", *Appl. Phys. Lett.* **89**, 213510 (2006).
75. Z. Y. Fan, J. Li M. L. Nakarmi J. Y. Lin, and H. X. Jiang, "AlGaIn/GaN/AlN quantum-well field-effect transistors with highly resistive AlN epilayers," *Appl. Phys. Lett.* **88**, 073513 (2006).
76. M. Khizar, Z. Y. Fan, K. H. Kim, J. Y. Lin, and H. X. Jiang, "Nitride deep-ultraviolet light-emitting diodes with microlens array," *Appl. Phys. Lett.* **86**, 173504 (2005).
77. M. L. Nakarmi, K. H. Kim, M. Khizar, Z. Y. Fan, J. Y. Lin and H. X. Jiang, "Electrical and optical properties of Mg-doped Al_{0.7}Ga_{0.3}N alloys," *Appl. Phys. Lett.* **86**, 092108 (2005).
78. K. H. Kim, Z. Y. Fan, M. Khizar, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "AlGaIn-based ultraviolet light-emitting diodes grown on AlN epilayers," *Appl. Phys. Lett.* **85**, 4777 (2004).
79. J. J. Diao, G. D. Chen, Xi Cong, Song Yan, Z. Y. Fan, and Jing Xuan, "Optical resonant of metal-coated nanoshell", *Chinese Phys.* **12**, 100 (2003).
80. Z. Y. Fan, J. Li, J. Y. Lin, and H. X. Jiang, "Delta-doped AlGaIn/GaN metal oxide semiconductor heterostructure field effect transistors with high breakdown voltages," *Appl. Phys. Lett.* **81**, 4649 (2002).

81. Z. Y. Fan, D.G. Hinks, N. Newman, and J.M. Rowell, "Experimental study of MgB₂ decomposition," *Appl. Phys. Lett.*, **79**, 87 (2001).
82. Z. Y. Fan and N. Newman, "Experimental determination of the rates of decomposition and cation desorption from nitride surfaces", *Mat. Sci. and Eng.* **B87**, 244 (2001).
83. Z. Y. Fan, G. Rong, and N. Newman and David J. Smith, "Defect annihilation in AlN thin films by ultrahigh temperature processing," *Appl. Phys. Lett.* **76**, 1839 (2000).
84. Z. Y. Fan, G. Rong, J. Browning and N. Newman, "High temperature Growth of AlN by Plasma-enhanced Molecular Beam Epitaxy", *Mat. Sci. and Eng.* **B67**, 80 (1999).
85. Z. Y. Fan and N. Newman, "Precise control of atomic nitrogen production in an ECR plasma using N₂/noble gas mixtures," *Appl. Phys. Lett.* **73**, 456 (1998).
86. Z. Y. Fan and N. Newman, "Kinetic energy distribution of nitrogen ions in an electron cyclotron resonance (ECR) plasma", *J. Vac. Sci. Technol.* **A16**, 2132 (1998).
87. Z. Y. Fan and Liangju Zhang, "Multithreaded programming concepts and its applications", *Mini- and Micro Computer System*, **17**, 1 (1996).
88. Z. Y. Fan, Liangju Zhang, Xu Liu, and Youhua Zhang, "I/O operation of non-standard VAX/VMS devices in VAX/VMS systems", *Mini- and Micro Computer System*, **16**, 54 (1995).

Books and Book Chapters

1. Zhaoyang Fan, Shiqi Li (edit) "Advances in Electrochemical Energy Materials", in press.
2. Shiqi Li, Wenyue Li, Zhaoyang Fan, "Cellulose-Derived Electrodes for Energy Storage", in "Biomass-Based Energy Storage Materials", in press.
3. Xuan Pan, Wenyue Li, Zhaoyang Fan, "Vanadium-Based Compounds for Supercapacitors", pp59-77, in "Inorganic Nanomaterials for Supercapacitors", edited by Inamuddin, R. Boddula, M. I. Ahmed, A. M. Asiri, CRC Press, December 20, 2019.
4. Wenyue Li, Xuan Pan, Zhaoyang Fan, "Vertically Aligned 1D and 2D Nanomaterials for High-Frequency Supercapacitors", pp101-114, in "Morphology Design Paradigms for Supercapacitors", edited by Inamuddin, R. Boddula, M. F. Ahmer, A. M. Asiri, CRC Press, December 23, 2019.
5. Xuan Pan, Yong Zhao, Shu Wang, and Zhaoyang Fan, "TiO₂/graphene nanocomposite for photocatalytic application", in "Materials and processes for energy: communicating current research and technological developments", edited by A. Mendez-Vilas, Formatex Research Center. ISBN (13): 978-84-939843-7-3. August 2013.

Proceeding Papers

1. Jiguo Dai, Chandika Annasiwatta, Ayrton Bernussi, Zhaoyang Fan, Jordan M. Berg and Beibei Ren, "Continuous Phase Tuning of Vanadium Dioxide Films Using Robust Feedback Mechanism", Proc. American Control Conference (ACC), 2019, 5743-5748. Philadelphia, PA, USA, July 10-12, 2019.
2. Nazifah Islam, Md Nadim Ferdous Hoque, Yujiao Zu, Shu Wang, Zhaoyang Fan, "Carbon Nanofiber Aerogel Converted from Bacterial Cellulose for Kilohertz AC-Supercapacitors", MRS Advances 3, 855-860, 2018. DOI: 10.1557/adv.2018.139.

3. Md Nadim Ferdous Hoque, Nazifah Islam, Kai Zhu, Zhaoyang Fan, “Hybrid Perovskite Phase Transition and Its Ionic, Electrical and Optical Properties”, *MRS Advances* 2, 3077-3082, 2017. DOI: 10.1557/adv.2017.423.
4. Chandika Annasiwatta, Jinhao Chen, Jordan M. Berg, Ayrton Bernussi, Zhaoyang Fan, Beibei Ren, “Multi-physics modeling hysteresis in vanadium dioxide thin films”, *Proc. American Control Conference*, 2016, 6905-6910. DOI: 10.1109/ACC.2016.7526760
5. Zhaoyang Fan, Guofeng Ren, “Perpendicular Edge-Oriented Multilayered Graphene Foam Based Nanostructured Electrodes for Energy Conversion and Storage”, *International Photonics and OptoElectronics*, OSA Technical Digest (Optical Society of America, 2015), paper PT2F.5. doi:10.1364/PFE.2015.PT2F.5
6. Md Nadim Ferdous Hoque, Gulden Karaoglan-Bebek, Mark Holtz, Ayrton A. Bernussi and Zhaoyang Fan, “Exploiting the Metal-Insulator Transition of VO₂ Thin Films for Terahertz Wave Modulation and Switching”, *MRS Proceedings* 2015, Volume 1805, mrs15-2134529. DOI:10.1557/opl.2015.594
7. Guofeng Ren and Zhaoyang Fan, “VO₂(B)/Graphene Forest for High-Rate Li-Ion Battery”, *MRS Proceedings* 2015, Volume 1773, 7-14. DOI: 10.1557/opl.2015.536
8. Zhaoyang Fan and Nate Newman, “Tailoring the properties of plasma and ion sources for growth and processing of thin films”, *Vacuum Technology & Coating*, p44-47, May 2014.
9. Subash Vegesna, Yanhan Zhu, Yong Zhao, Zhaoyang Fan, Ayrton Bernussi, Mohammad Saed, “Reconfigurable terahertz frequency selective structures using vanadium dioxide”, *Microwave Symposium Digest (IMS)*, 2013 IEEE MTT-S International, article number 06697598.
10. M. Nazari, Y. Zhao, Y. Zhu, V. V. Kuryatkov, Z. Y. Fan, A. A. Bernussi and M. Holtz, “Optical Properties of Vanadium Dioxide Grown on Sapphire Substrate with Different Orientations”, *TMS 2013 Supplemental Proceedings*, 933–940.
11. M. Nazari, Y. Zhao, Y. Zhu, V. V. Kuryatkov, A. A. Bernussi, Z. Fan and M. Holtz, “Optical, Structural, and Electrical Properties of Vanadium Dioxide Grown on Sapphire Substrates with Different Crystallographic Orientations”, *MRS Proceedings* 2013, 1494, DOI: 10.1557/opl.2012.1582.
12. Marc S. Litz; Zhaoyang Fan; James J. Carroll; Stephen Bayne, “Alpha Schottky Junction Energy Source”, *Proc. SPIE* 8377, *Energy Harvesting and Storage: Materials, Devices, and Applications III*, 83770R (May 1, 2012); doi:10.1117/12.918588;
13. Changhong Chen, Yong Zhao, Xuan Pan, Mark Holtz and Zhaoyang Fan, “Twin-domain Epitaxial Growth and Metal-insulator Transition of VO₂ Thin Film on C-Plane Sapphire”, *MRS Proceedings* 2011, 1292, mrsf10-1292-k09-10. doi:10.1557/opl.2011.153.
14. Xuan Pan, Yong Zhao, Changhong Chen and Zhaoyang Fan, “Titanium Dioxide Nanotubes Decorated with Nanoparticles for Dye Sensitized Solar Cells”, *MRS Proceedings* 2011, 1303, mrsf10-1303-y05-06. doi:10.1557/opl.2011.404.
15. Yahya Alivov, Xuan Pan, Mahesh Pandikunta, Vladimir Kuryatkov, Sergey Nikishin, Mark Holtz, and Zhaoyang Fan, “Nanoparticle Layers Transformed from Ordered TiO₂ Nanotube Arrays and Based Dye-Sensitized Solar Cells”, *Mater. Res. Soc. Symp. Proc. Vol. 1211*, 1211-R08-33, 2010.

16. Yahya Alivov, Vladimir Kuryatkov, Mahesh Pandikunta, Gautam Rajanna, D. Johnstone, Ayrton Bernussi, Sergey Nikishin, and Z. Y. Fan, "Optical and Electrical Properties of TiO₂ Nanotubes Grown by Titanium Anodization", *Mater. Res. Soc. Symp. Proc.* Vol. 1178, 1178-AA09-27, 2009.
17. Z. Y. Fan, J. Y. Lin, and H. X. Jiang, "Achieving conductive high Al-content AlGa_N alloys for deep UV photonics", *Proc. SPIE* 6479, 64791I, 2007, (invited).
18. Z. Y. Fan, J. Y. Lin, and H. X. Jiang, "III-nitride deep ultraviolet micro- and nano-photonics," *Proc. SPIE* 6127, 61271C, 2006, (invited).
19. Z. Y. Fan, J. Y. Lin, and H. X. Jiang, "Recent advances in III-nitride UV Materials and Devices," Proceedings of the International Symposia (State-of-the-Art Program on Compound Semiconductors XL), The Electrochemical Society, 2004-02, 24 2004, (invited).
20. Z. Y. Fan, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "Delta-doped AlGa_N/Ga_N Heterostructure Field-Effect Transistors with Incorporation of Al_N Epilayers", *MRS Proc.* 798, Y10.23, 2003.
21. Z. Y. Fan, J. Li, J. Y. Lin, H. X. Jiang, Y. Liu, J. A. Bardwell, J. B. Webb, and H. Tang, "AlGa_N/Ga_N metal-oxide-semiconductor heterostructure field-effect transistors (MOSHETs) with the delta-doped barrier layer", *MRS Proc.* L9.11, 2002.
22. Z. Y. Fan, G. Rong, N. Newman, D.J. Smith, and D. Chandrasekhar, "MBE growth and ultrahigh temperature processing of high-quality nitride films", *MRS Proc.* 587, O7.2.1 2000.

Invited Talks and Conference Presentations

1. Zhen Xu, Zhaoyang Fan, "Volatile Insulator-Metal Transition of VO₂ Resistors as Artificial Neurons", 2019 Joint Fall Meeting of the Texas Sections of APS, AAPT and Zone 13 of the SPS, October 25-26, 2019, Lubbock, Texas.
2. Milinda Pattanayak, Md Nadim F. Hoque, Yong Zhao, Zhaoyang Fan, Ayrton Bernussi, "Non-linear dynamics and simulation of VO₂ oscillators for micro-electronics applications", 2019 Joint Fall Meeting of the Texas Sections of APS, AAPT and Zone 13 of the SPS, October 25-26, 2019, Lubbock, Texas.
3. Wenyue Li, Zhaoyang Fan, "Edge-Dominated Graphene Cluster Wrapped Metal Nanoparticles on Carbon Fibers for AC-Line Filtering Electrochemical Capacitors", 236th ECS (Electrochemical Society) Meeting, October 13-17, 2019, Atlanta, Georgia.
4. Zhen Xu, Zhaoyang Fan, "Electrical Pulse Driven Insulator-Metal Transition of VO₂ Devices as Leaky-Integrate-and-Fire Artificial Neurons", 236th ECS (Electrochemical Society) Meeting, October 13-17, 2019, Atlanta, Georgia.
5. Wenyue Li, Zhaoyang Fan, "Conformal Dielectric Thin Film by Electrodeposition in 3D Porous Carbon Fiber Sheets", 236th ECS (Electrochemical Society) Meeting, October 13-17, 2019, Atlanta, Georgia.
6. Zhaoyang Fan, "Enabling Extreme Fast Charging in Electrical Vehicles: Battery Technology Gap and Potential of TiO₂(B) as an Anode Material", 2019 Rotating Machinery Transmission and Controls Conference (RMTC 2019). July 19-21, 2019, Beijing, China.

7. Jiguo Dai, Chandika Annasiwatta, Ayrton Bernussi, Zhaoyang Fan, Jordan M. Berg and Beibei Ren, “Continuous Phase Tuning of Vanadium Dioxide Films Using Robust Feedback Mechanism”, 2019 American Control Conference, July 10-12, 2019, Philadelphia, PA, USA.
8. Zhaoyang Fan, “Metal-Insulator Transition in VO₂ and its Electronic and Photonic Applications”, Department of Electrical and Computer Engineering, The University of Alabama, May 23, 2019, Tuscaloosa, AL. USA.
9. Milinda Pattanayak, Md Nadim F. Hoque, Zhaoyang Fan, Ayrton Bernussi, “Current-induced resistivity switching in VO₂ micro-electronic oscillators”, APS March Meeting 2019, March 4–8, 2019; Boston, MA. USA.
10. Zhaoyang Fan, “Kilohertz High-Frequency AC-Supercapacitors”, TechConnect World Innovation Conference 2018, May 13-16, 2018, Anaheim, CA. USA.
11. Zhaoyang Fan, “Kilohertz High-Frequency High-Voltage Supercapacitors for Alternating Current Filtering and Pulse Energy Storage”, Materials Research Society (MRS) Spring Meeting, Apr. 2-6, 2018, Phoenix, AZ. USA.
12. Nazifah Islam, Zhaoyang Fan, “High Power Fast Supercapacitors Based on Vertically Oriented MoS₂ Nanosheets Grown on Plasma Pyrolyzed Cellulose Fibers”, Materials Research Society (MRS) Spring Meeting, Apr. 2-6, 2018, Phoenix, AZ. USA.
13. Zhaoyang Fan, “High-Frequency Supercapacitors: Design, Electrodes, and Applications”, TMS 2018 Annual Meeting & Exhibition, Mar 11-15, 2018, Phoenix, AZ. USA. (Invited)
14. Nazifah Islam, Yujiao Zu, Shu Wang, Zhaoyang Fan, “Carbon nanofiber aerogel from bacterial cellulose for kilohertz AC-supercapacitors”, Materials Research Society (MRS) Fall Meeting, Nov. 26- Dec. 1, 2017, Boston, MA. USA.
15. Md Nadim Ferdous Hoque, Zhaoyang Fan, “Hybrid perovskite crystalline grain effects on electronic and ionic conduction”, Materials Research Society (MRS) Fall Meeting, Nov. 26- Dec. 1, 2017, Boston, MA. USA.
16. Yuche Ho, Md Nadim Ferdous Hoque, Zhaoyang Fan, “TiO₂ annealing effect on its stoichiometry and the impacts on perovskite solar cells”, Materials Research Society (MRS) Fall Meeting, Nov. 26- Dec. 1, 2017, Boston, MA. USA.
17. M. Pattanayak, M. N. F. Hoque, Z. Fan, A. A. Bernussi, “Electrical switching, loop hysteresis and charge oscillation in VO₂ micro-channel devices”, Joint Fall 2017 Meeting of the Texas Section of the APS, Texas Section of the AAPT, and Zone 13 of the Society of Physics Students, Oct. 20–21, 2017; The University of Texas at Dallas, Richardson, TX, USA.
18. M. Pattanayak, M. N. F. Hoque, Z. Fan, A. A. Bernussi, “Electrical switching and charge oscillation in VO₂ micro-channel devices”, 2017 Departmental Poster Competition, Oct. 6, 2017, TTU Physics, Lubbock, TX, USA.
19. Zhaoyang Fan, “Introduction to electrochemical energy storage”, The Global Laboratory for Energy Asset Management and Manufacturing (GLEAMM) Energy Innovation Scholars Education, Sept. 6, 2017, Texas Tech University, Lubbock, TX, USA. (invited)

20. Zhaoyang Fan, “Graphene and Carbon Fiber Based Nanostructures for KiloHertz Ultrafast Supercapacitors”, Collaborative Conference on Material Research 2017, June 26 – 30, 2017, Jeju, South Korea. (invited)
21. Zhaoyang Fan, “KiloHertz supercapacitors based on graphene and carbon fiber for AC filtering and energy harvesting”, Nano-Micro Conference 2017, June 19 – 23, 2017, Shanghai, China. (invited)
22. Zhaoyang Fan, “AC-Supercap”, Texas Tech GLEAMM Spark Fund Conference and Innovation Poster Showcase, Apr. 27 – Apr. 28, 2017, Lubbock, TX, USA.
23. Nazifah Islam, Md Nadim Ferdous Hoque, Zhaoyang Fan, “KiloHertz AC-Supercapacitors for Ripple Current Filtering”, Texas Tech GLEAMM Spark Fund Conference and Innovation Poster Showcase, Apr. 27 – Apr. 28, 2017, Lubbock, TX, USA.
24. Raymundo Roig, Elizabeth Stoneham, Eric Ho, Zhaoyang Fan, “Study of Mesostructured Organometal Halide Perovskite Based Photovoltaic: Fabrication and Characterization”, Texas Tech GLEAMM Spark Fund Conference and Innovation Poster Showcase, Apr. 27 – Apr. 28, 2017, Lubbock, TX, USA.
25. Nazifah Islam, Guofeng Ren, Zhaoyang Fan, “Edge Oriented Graphene on Carbon Nanofibers for Kilo-Hertz Ultrafast Electric Double Layer Supercapacitors”, MRS Spring Meeting, Apr. 17 – Apr. 21, 2017, Phoenix, AZ. USA.
26. Md Nadim Ferdous Hoque, Nazifah Islam, Zhen Li, Kai Zhu, and Zhaoyang Fan, “Hybrid Perovskite Phase Transition and Its Ionic and Electrical Properties under Normal Solar Cell Operation”, MRS Spring Meeting, Apr. 17 – Apr. 21, 2017, Phoenix, AZ. USA.
27. Nazifah Islam, Shiqi Li, Zhaoyang Fan, “Cellulose Aerogel and Its Carbonized Aerogel for High-Performance Lithium-Sulfur Battery”, MRS Spring Meeting, Apr. 17 – Apr. 21, 2017, Phoenix, AZ. USA.
28. Nazifah Islam, Zhaoyang Fan, “High Energy Density Ultrafast Supercapacitors Based on Graphitized Bacterial Cellulose Aerogel”. MRS Spring Meeting, Apr. 17 – Apr. 21, 2017, Phoenix, AZ. USA.
29. Elizabeth Stoneham, Yu-Che Ho, Zhaoyang Fan, “Study of Organo-Metal Halide Perovskite Based Photovoltaics: the Conventional and Inverted Structures”, 2017 TTU Undergraduate Research Conference, March 28-29, 2017, Lubbock, TX, USA.
30. Shu Wang, Zhaoyang Fan, “Nanodevices and Chronic Disease Theranostics”, TTU Faculty Research Club Meeting, October 28, 2016, Lubbock, TX, USA.
31. Zhaoyang Fan, “AlGaN Solar Blind Ultraviolet Photodetectors and Focal Plane Array”, Bolb Inc., September 3, 2016, San Jose, CA, USA. (Invited)
32. Zhaoyang Fan, “Nanomaterials for Supercapacitors and Rechargeable Batteries”, Beijing Institute of Technology, July 28, 2016. Beijing, China. (Invited)
33. Zhaoyang Fan, “Nanomaterial Structures for Electrochemical Energy Storage: Supercapacitor & Battery”, Henan Normal University Physics Colloquium, July 12, 2016. Xinxiang, Henan, China. (Invited)

34. Chandika Annasiwatta, Jinhao Chen, Jordan M. Berg, Ayrton Bernussi, Zhaoyang Fan, Beibei Ren, “Multi-Physics Modeling of Hysteresis in Vanadium Dioxide Thin Films (I)”, 2016 American Control Conference, July 6-8, 2016, Boston, MA, USA.
35. Zhaoyang Fan, “Edge Oriented Multilayer Graphene Foam and Supported Oxide Nanosheets for Ultrafast Supercapacitors and High-Performance Batteries”, (invited) Next-Generation Energy Storage’s Symposium 2: Flexible Batteries, Apr. 20, 2016, San Diego, CA, USA. (Invited)
36. Zhaoyang Fan, “Nanostructured Electrodes based on 1D and 2D Nanomaterials for Electrochemical Energy Storage”, University of Texas at Arlington Physics Colloquium, Apr. 13, 2016. Arlington, TX, USA. (Invited)
37. Shiqi Li, Guofeng Ren, Ying Gao, Zhaoyang Fan, “Combined Physical and Chemical Immobilization of Sulfur Species using Cellulose-Derived Nanofibers for Lithium-Sulfur Batteries”, MRS Spring Meeting, Mar. 28 – Apr. 1, 2016, Phoenix, AZ. USA.
38. Guofeng Ren, Shiqi Li, Zhaoyang Fan, “Soybean-Derived 3-in-1 Carbon Structure for High-Performance Lithium-Sulfur Batteries”, MRS Spring Meeting, Mar. 28 – Apr. 1, 2016, Phoenix, AZ. USA.
39. Shiqi Li, Guofeng Ren, Zhaoyang Fan, “Pyrolyzed Cellulose Paper Based Sulfur Cathode for High-Performance and Cost-Effective Lithium-Sulfur Batteries”, MRS Spring Meeting, Mar. 28 – Apr. 1, 2016, Phoenix, AZ. USA.
40. Md Nadim Ferdous Hoque, Mengjin Yang, Nazifah Islam, Kai Zhu, Zhaoyang Fan, “Polarization and Electrical Measurements to Reveal the Non-Ferroelectric Nature of Hybrid Perovskites”, MRS Spring Meeting, Mar. 28 – Apr. 1, 2016, Phoenix, AZ. USA.
41. Md Nadim Ferdous Hoque, Nazifah Islam, Shuo Qiao, Guigen Li, Kai Zhu, Zhaoyang Fan, “Engineering the Interface between the Perovskite and the Hole Transport Material by an Interlayer” MRS Spring Meeting, Mar. 28 – Apr. 1, 2016, Phoenix, AZ. USA.
42. Elizabeth Stoneham, Nazifah Islam, and Zhaoyang Fan, “Organic-Inorganic Hybrid Perovskite Solar Cells: Principle and Fabrication”, 2016 TTU Undergraduate Research Conference, March 29-30, 2016, Lubbock, TX, USA.
43. Shiqi Li, Guofeng Ren, Zhaoyang Fan, “Nitrogen-Doped Carbon Derived from Pyrolysis of Cotton in Ammonia for Energy Storage”, MRS Fall Meeting, Nov. 30- Dec. 4, 2015, Boston, MA. USA.
44. Nazifah Islam, Md Nadim Ferdous Hoque, Zhaoyang Fan, “Titanium Oxide Anatase Nanoplates with Dominant (100) Facets as Porous Scaffolds for Hybrid Perovskite Solar Cells”, MRS Fall Meeting, Nov. 30- Dec. 4, 2015, Boston, MA. USA.
45. Shiqi Li, Guofeng Ren, Zhaoyang Fan, “Nitrogen-Doped Carbon Membranes as Interlayers for Improving the Performance of Lithium Sulfur Batteries”, MRS Fall Meeting, Nov. 30- Dec. 4, 2015, Boston, MA. USA.
46. Guofeng Ren, Shiqi Li, Zhaoyang Fan, “Perpendicularly Oriented Graphene Network on Carbonized Papers for High-Rate Supercapacitors”, MRS Fall Meeting, Nov. 30- Dec. 4, 2015, Boston, MA. USA.

47. Md Nadim Ferdous Hoque, Nazifah Islam, Guofeng Ren, Zhaoyang Fan, “Comparing the Performance and Hysteresis of Planar-Type Hybrid Perovskite Solar Cells Deposited by Several Hybrid Methods”, MRS Fall Meeting, Nov. 30- Dec. 4, 2015, Boston, MA. USA.
48. Zhaoyang Fan, “Perpendicular Edge-Oriented Multilayered Graphene Foam Based Nanostructured Electrodes for Energy Conversion and Storage”, the 8th International Photonics and Optoelectronics Meetings (POEM 2015), June 16-19, 2015, Wuhan, China.
49. Zhaoyang Fan, “Nanostructures for Energy Harvesting and Energy Storage”, Texas Tech University Physics Department Colloquium, Apr. 30, 2015, Lubbock, TX. USA. (Invited)
50. Guofeng Ren, Zhaoyang Fan, “3-D TiO(B) Nanosheets Coated Perpendicularly Oriented Graphene as Hierarchical Nanostructured Electrode for High-Performance Li-Ion Battery”, MRS Spring Meeting, Apr. 6-10, 2015, San Francisco, CA. USA.
51. Md Nadim Ferdous Hoque, Gulden Karaoglan-Bebek, Mark Holtz, Ayrton A. Bernussi and Zhaoyang Fan, “Exploiting the Metal-Insulator Transition of VO₂ Thin Films for Terahertz Wave Modulation and Switching”, MRS Spring Meeting, Apr. 6-10, 2015, San Francisco, CA. USA.
52. Guofeng Ren, Zhaoyang Fan, “VO₂(B)/Graphene Forest for High-Rate Li-Ion Battery”, MRS Spring Meeting, Apr. 6-10, 2015, San Francisco, CA. USA.
53. Nazifah Islam, Mengjin Yang, Zhaoyang Fan, Kai Zhu, “Blending TiO₂ Nanorods with Nanoparticles as the Porous Layer for Efficient Mesostuctured Hybrid Perovskite Solar Cells”, MRS Spring Meeting, Apr. 6-10, 2015, San Francisco, CA. USA.
54. Gulden Karaoglan-Bebek, Nadim Hoque, Mark Holtz, Zhaoyang Fan, Ayrton Bernussi, “Tungsten-doped vanadium dioxide thin films for THz analog optical applications”, APS March Meeting Mar. 2-6, 2015, San Antonio, TX. USA.
55. Sanchari Sen, Md Nadim Ferdous Hoque, Luis Grave De Peralta, Zhaoyang Fan, Ayrton Bernussi, “Photo-induced typography with vanadium dioxide thin films”, Fall 2014 Joint Meeting of the Texas Section of the APS, Texas Section of the AAPT, and Zone 13 of the Society of Physics Students, October 17–19, 2014; College Station, Texas, USA.
56. Xuan Pan, Guofeng Ren, and Zhaoyang Fan, “Rapid Pseudocapacitors Based on Vanadium Oxides Core-Shell Nanostructures”, MRS Spring Meeting, Apr. 21-25, 2014, San Francisco, CA. USA.
57. Guofeng Ren, Xuan Pan, Kai Zhu, and Zhaoyang Fan, “Electrocatalytic Properties of Graphene Forest and its Solar Energy Applications”, MRS Spring Meeting, Apr. 21-25, 2014, San Francisco, CA. USA.
58. Yong Zhao, Karaoglan-Bebek Gulden, Md Nadim Ferdous Hoque, Mark Holtz, Ayrton A. Bernussi and Zhaoyang Fan, “Properties of Hydrogen Doped Vanadium Oxide Thin Film and Its Application as Antireflection Coating”, MRS Spring Meeting, Apr. 21-25, 2014, San Francisco, CA. USA.
59. Zhaoyang Fan, “Epitaxial growth of VO₂ on sapphire and its terahertz wave modulation based on insulator-metal transition”, 2014 Lawrence Symposium on Epitaxy, Feb. 16-19, 2014, Scottsdale, AZ, USA.
60. Josh Wyatt and Zhaoyang Fan, “Preliminary Study Towards VO₂ Based Spatial Light Modulators”, IEEE Medical Devices Symposium November 7-8, 2013, Dallas, TX.

61. Z. Fan and S. S. Bayne, "Towards Diamond Based Alpha Voltaic Energy Source", 2013 IEEE Mini Colloquium on Sensor Devices, September 25, 2013. University of Maryland.
62. S. Vegesna, Y. Zhu, Y. Zhao, Z. Fan, A. Bernussi, M. Saed, "Reconfigurable Terahertz Frequency Selective Structures Using Vanadium Dioxide", 2013 International Microwave Symposium, June 2-7, 2013. Seattle, WA.
63. M. Sun, S. Nie, X. Pan, Z. Fan, S. Wang, "Quercetin encapsulated nanocarriers: effects on breast cancer cell growth, apoptosis, and uptake in vitro and bioavailability in vivo", 2013 Experimental Biology Meeting, April 20-24, 2013. Boston, MA.
64. Kay Igwe, Nadim Horque, and Zhaoyang Fan, "Device Microfabrication and Experimental Study of VO₂ Insulator-Metal Transition under Electrical Control", 2013 TTU Undergraduate Research Conference, April 23-25, 2013, Lubbock, TX, USA.
65. Xuan Pan, Yong Zhao, Guofeng Ren and Zhaoyang Fan, "Supercapacitors Based on Nanostructured Vanadium Oxide and Graphene Composite", MRS Spring Meeting, Apr. 01-05, 2013, San Francisco, CA. USA.
66. Yong Zhao, Yanhan Zhu, Ayrton A. Bernussi and Zhaoyang Fan, "A Terahertz Spatial Light Modulator Based on Metal-Insulator Transition", MRS Spring Meeting, Apr. 01-05, 2013, San Francisco, CA. USA.
67. Xuan Pan, Yong Zhao, and Zhaoyang Fan, "Tune the Conductivity of Vanadium Oxide for Energy Storage Applications", MRS Spring Meeting, Apr. 01-05, 2013, San Francisco, CA. USA.
68. Yong Zhao, Xuan Pan, and Zhaoyang Fan, "Growth Temperature Tuned Electrical and Optical Properties of VO₂ Thin Films", MRS Spring Meeting, Apr. 01-05, 2013, San Francisco, CA. USA.
69. Guofeng Ren, Yanhan Zhu, Xuan Pan, Yong Zhao, Ayrton A. Bernussi, and Zhaoyang Fan, "Nitrogen Doped Vertical Few-Layer Graphene Films: Synthesis and Material Analysis", MRS Spring Meeting, Apr. 01-05, 2013, San Francisco, CA. USA.
70. Mohammad Nazari, Yong Zhao, Yanhan Zhu, Ayrton Bernussi, Zhaoyang Fan, Mark Holtz, "Optical Properties of Vanadium Dioxide Grown on Sapphire Substrates with Different Orientations", TMS 2013 Meeting, Mar 03-07, San Antonio, TX, USA.
71. Mohammad Nazari, Yong Zhao, Yanhan Zhu, Ayrton Bernussi, Zhaoyang Fan, Mark Holtz, "Optical, Structural, and Electrical Properties of Vanadium Dioxide Grown on Sapphire Substrates with Different Orientations", MRS Fall Meeting, Nov. 25-30, 2012, Boston, MA. USA.
72. Nazari, M., Zhao, Y., Kuryatkov, V., Fan, Z., Bernussi, A., Holtz, M., "Temperature dependence of the optical properties of VO₂ deposited on sapphire with different orientations," 2012 Texas Section Fall Meeting, APS. (October 25-27, 2012), Lubbock, TX. USA.
73. Marc S. Litz; Zhaoyang Fan; James J. Carroll; Stephen Bayne, "Alpha Schottky junction energy source", Technical Conference of Energy Harvesting and Storage: Materials, Devices, and Applications III, 23–24 April 2012, Baltimore, Maryland, United States.

74. S. Wang, J. Zhang, M. Sun, and Z.Y. Fan, "Nanoencapsulation increases (-)-epigallocatechin gallate stability and its cellular bioavailability in macrophages", Experimental Biology Meeting, April 21-25, 2012, San Diego, CA. USA.
75. Joshua Bruhn, Jim Hotchkin, Xuan Pan, and Zhaoyang Fan, "Labview Programming and Photovoltaic Efficiency Measurement", 2012 TTU Undergraduate Research Conference, April 18, 2012, Lubbock, TX, USA.
76. Xuan Pan, Yong Zhao, and Zhaoyang Fan, "Comparative Study of Photocatalysts Based on Different TiO₂/Graphene Hybrid Nanostructures", MRS Spring Meeting, Apr. 09-13, 2012, San Francisco, CA. USA.
77. Yong Zhao, Xuan Pan, and Zhaoyang Fan, "The Evolution Process of VO₂ Metal-Insulator Transition under Electrical Control", MRS Spring Meeting, Apr. 09-13, 2012, San Francisco, CA. USA.
78. Xuan Pan, Yong Zhao, and Zhaoyang Fan, "Self-Assembled TiO₂ Nanowire/Graphene Hybrid Structure for Photoelectrochemical Applications", MRS Fall Meeting, Nov. 28 – Dec. 2, 2011, Boston, MA. USA.
79. Yong Zhao, Changhong Chen, Joon Hwan Lee, Haiyan Wang, and Zhaoyang Fan, "Comparative Study of Vanadium Dioxide Thin Films Grown on c-, r-, and m-plane Sapphire Substrates", MRS Fall Meeting, Nov. 28 – Dec. 2, 2011, Boston, MA. USA.
80. Changhong Chen, Xuan Pan, Yong Zhao, and Zhaoyang Fan, "Deposition, Properties, and Solar-Energy Conversion of Cu₂O Thin Films", MRS Fall Meeting, Nov. 28 – Dec. 2, 2011, Boston, MA. USA.
81. Yong Zhao, Ji Hao, Changhong Chen, and Zhaoyang Fan, "Metal-insulator transition mechanism in VO₂ under electric bias", APS March Meeting, March 21–25, 2011; Dallas, Texas.
82. Changhong Chen, Yong Zhao, and Zhaoyang Fan, "Dependence of VO₂ thin-film metal-insulator transition on its intrinsic impurities", APS March Meeting, March 21–25, 2011; Dallas, Texas.
83. S Sohal, Y Alivov, Z Fan, M Holtz, "Behavior of Phonons in the Optical Properties of Magnetron Sputtered ZnO", APS March Meeting, March 21–25, 2011; Dallas, Texas.
84. Xuan Pan, Changhong Chen, and Zhaoyang Fan, "Titanium dioxide nanotubes decorated with nanoparticles for dye sensitized solar cells", MRS Fall Meeting, Nov. 29 – Dec. 3, 2010, Boston, MA. USA.
85. Changhong Chen, Yong Zhao, and Zhaoyang Fan, "Twin-domain epitaxial growth and metal-insulator transition of VO₂ thin film on c-plane sapphire", MRS Fall Meeting, Nov. 29 – Dec. 3, 2010, Boston, MA. USA.
86. Y. Alivov, X. Pan, K. Vladimir, S. Nikishin, M. Holtz, and Z. Y. Fan, "Dye-Sensitized Solar Cells Based on TiO₂ Nanoparticles Transformed from Nanotube Arrays", MRS Fall Meeting, Nov. 30 – Dec. 4, 2009, Boston, MA. USA.
87. Y. Alivov, X. Pan, and Z. Y. Fan, "Dye Sensitized Solar Cells Based on TiO₂ Nanotubes Filled with Nanoparticles", 1st IEEE Green Technology Conference, April 16-17, 2009, Lubbock, Texas, USA.

88. Y. Alivov, V. Kuryatkov, M. Pandikunta, G. Rajanna, D. Johnstone, A. Bernussi, S. Nikishin, and Z. Y. Fan, "Optical and Electrical Properties of TiO₂ Nanotubes Grown by Titanium Anodization", MRS Spring Meeting, April 13 - 17, 2009, San Francisco, CA. USA.
89. R. Dahal, J. Li, Z. Y. Fan, M. L. Nakarmi, T. M. Al Tahtamouni, J. Y. Lin, and H. X. Jiang, "AlN MSM and Schottky photodetectors", 7th International Conference of Nitride Semiconductors (ICNS-7), Sept. 16–21, 2007, Las Vegas, Nevada, USA.
90. Z. Y. Fan, "Nitride Nano-Electronic and Photonic Devices", August 2, 2007, Texas Tech University, Department of Electrical and Computer Engineering, Lubbock, TX.
91. Z. Y. Fan, "III-Nitride Wide Bandgap Semiconductor Devices", April 3, 2007, Rutgers University, Department of Electrical and Computer Engineering, New Brunswick, NJ.
92. B. Pantha, R. Dahal, J. Li, Z. Y. Fan, J. y. Lin, H. X. Jiang, and G. Pomrenke, "Thermoelectrical properties of InGaN", APS March Meeting, March 5–9, 2007; Denver, Colorado.
93. R. Dahal, J. Li, Z.Y. Fan, M.L. Nakarmi, J.Y. Lin, H.X. Jiang, "200 nm deep ultraviolet photodetectors based on AlN", APS March Meeting, March 5–9, 2007; Denver, Colorado.
94. Z. Y. Fan, "Recent Progresses in Nitride Research", Condense Matter Physics Seminar, Kansas State University, Sept. 22, 2006, Manhattan, Kansas.
95. Z. Y. Fan, "SBIR Phase II: Microdisplays Based on III-Nitride Wide Band Gap Semiconductors", The 2006 Spring National SBIR/STTR Conference and Small Business Tech Expo, May 15-18, 2006, Louisville, KY.
96. K. Knabe, J. Shakya, K. Kim, Z. Y. Fan , J. Y. Lin, and H. X. Jiang, "Polarization Properties of III-Nitride Blue and UV Light-Emitting Diodes", APS March Meeting, Mar. 21-25, 2005, Los Angeles, CA.
97. T.M. Al Tahtamouni, M. L. Nakarmi, M. Khizar, Z.Y. Fan, J.Y. Lin, H.X. Jiang, "Growth and Fabrication of III-Nitride Deep Ultraviolet Emitters", APS March Meeting, Mar. 21-25, 2005, Los Angeles, CA.
98. K. Muhammad, Z. Y. Fan, K. H. Kim, J. Y. Lin , H. X. Jiang, "Nitride Deep Ultraviolet Light-Emitting Diodes with Microlens Array", APS March Meeting, Mar. 21-25, 2005, Los Angeles, CA.
99. J. Shakya, Z.Y. Fan, K. H. Kim, T. N. Oder, J. Y. Lin and H. X. Jiang, "III-Nitride UV Photonic Crystals", MRS Fall Meeting, Nov.29 - Dec. 3, 2004, Boston, Massachusetts.
100. K. H. Kim, Z. Y. Fan, M. L. Nakarmi, J. Li, S. X. Jin, J. Y. Lin, H. X. Jiang, "III-Nitride Ultraviolet Light Emitting Diodes with Delta-Doping", APS March Meeting, 2004, Mar 22-26, Montreal, Canada.
101. Z. Y. Fan, M. L. Nakarmi, J. Li, J. Y. Lin, and H. X. Jiang, "Insulator-Gated AlGaIn/GaN Heterostructure Field Effect Transistors", APS March Meeting, Mar. 3-7, 2003, Austin, Texas.
102. Z. Y. Fan, J. Li, J. Y. Lin, and H. X. Jiang, "Delta-Doped AlGaIn/GaN MOSHFETs with High Breakdown Voltages", MRS Fall Meeting, Dec. 2-6, 2002, Boston, Massachusetts.
103. Z. Y. Fan, "AlGaIn/GaN heterostructure field-effect transistor (HFET)", Condense Matter Physics Seminar, Kansas State University, Nov. 22, 2002, Manhattan, Kansas.

104. Z. Y. Fan, "III-N Semiconductors: from MBE growth to electronic applications", Condense Matter Physics Seminar, Kansas State University, Dec. 7, 2001, Manhattan, Kansas.
105. Z. Y. Fan, "Development of AlN and GaN for practical applications", Department of Physics, Kansas State University, July 7, 2001, Manhattan, Kansas.
106. Z. Y. Fan, "High Temperature Growth of AlN by Molecular Beam Epitaxy", EMCORE Corporation, May, 2001, Somerset, New Jersey.
107. Z. Y. Fan, N. Newman, and D. J. Smith, "Optimizing the Quality of MBE-Grown AlN: the Role of Al Surface Lifetime and AlN Decomposition", Lawrence Symposium on Critical Issues in Epitaxy, Jan. 3-6, 2001, Scottsdale, Arizona.
108. N. Newman, Z. Y. Fan, D. J. Smith, "A Systematic Study of III-N MBE Synthesis", High-Temperature, High-Power, High-Frequency Electronics Workshop, Nov. 17, 2000, Tempe, Arizona.
109. Z. Y. Fan, G. Rong, N. Newman, D. J. Smith, and D. Chandrasekhar, "AlN-Based Overlayers for III-N Substrates", MRS Fall Meeting, Nov. 29 Dec. 3, 1999, Boston, Massachusetts.