

Resume of Abu Farzan Mitul

Graduate Student Fellowship
Physical Chemistry and Applied Spectroscopy Group (C-PCS)
Chemistry Division

Los Alamos National Laboratory (LANL)
Los Alamos, NM 87545, USA

Google Scholar: <https://scholar.google.com/citations?user=3cuPCxQAAAAJ&hl=en>

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Los Alamos, NM 87544, USA

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EDUCATION

P.h.D. Degree in Optical Science and Engineering (OSE/ECE) 2015 – contd.

University of New Mexico

Achieved Score: 3.97 out of (4.00)

M.Sc. Degree in Electrical Engineering 2013 – 2015

South Dakota State University

Achieved Score: 4.00 out of (4.00)

M.Sc. Degree in Electrical and Electronic Engineering 2012

Khulna University of Engineering and Technology (KUET), Bangladesh

Achieved Score: 4.00 out of (4.00), Course work (only)

B.Sc. Degree in Electrical and Electronic Engineering 2007 - 2011

Khulna University of Engineering and Technology (KUET), Bangladesh

Achieved Score: 3.87 out of (4.00), Highest CGPA in session: 2009 – 2010 (out of 385 students)

RESEARCH EXPERIENCE

Los Alamos National Laboratory, Center for Advanced Solar Photophysics, 2016 – contd.

Physical Chemistry and Applied Spectroscopy Group (C-PCS).

and University of New Mexico (UNM), Center for High Technology Materials (CHTM)

(Optical Science and Engineering program, Electrical and Computer Engineering Department)

Position: Graduate Student fellowship

Supervisor: Dr. Jaehoon Lim

University of New Mexico (UNM), Center for High Technology Materials (CHTM) 2015 – contd.

(Optical Science and Engineering program, Electrical and Computer Engineering Department)

Position: Graduate Assistant

Project title: Type II super lattice mid-wave infrared detectors (MWIR)

Supervisor: Prof Dr Sanjay Krishna.

South Dakota State University, Center of Advanced Photovoltaic 2013 – 2015

(Electrical Engineering Department)

Position: Research Assistant

Project title: Design, fabrication and characterization of tandem polymer solar cell.

- Selection of sub-cells which have absorbance in a complementary wavelength range (using UV-Vis-NIR absorption spectroscopy).

- Fabrication and characterization of high molecular weight low bandgap polymer solar cell (single junction) in order to achieve optimum device performance.
- Optimization of a robust interconnecting layer to obtain $V_{oc}(\text{tandem}) = V_{oc1} + V_{oc2}$ in tandem solar cell (using spin coater, hot plate etc.)
- Fabrication and characterization of tandem polymer solar cell (using Glove box, Semiconductor parameter analyzer, Raman spectroscopy, SEM, AFM, XRD in group work).
- Transient analysis for loss mechanisms (e.g., monomolecular or bimolecular recombination) during the charge generation, transport, and extraction (for bottom cell only).

Project title: Joint experimental and theoretical investigation on dendrimers for triplet generation and good charge mobility in polymer solar cell (**sub-project**).

Supervisor: Prof Dr Qiquan Qiao.

Khulna University of Engineering and Technology (Bangladesh), Consultancy Research & Testing Services (CRTS), Department of Electrical and Electronic Engineering **2012 – 2013**

Position: Research Engineer

Responsibility: Design, Development and Testing of different Industrial Equipment

Experience: Light intensity and electrical parameter measurements of CFL, LED, tube lights (using Digital Lumen Meter, Orthogonal Double Circle Arrangement etc.)

Khulna University of Engineering and Technology (Bangladesh), Simulation and Hardware Laboratory, Department of Electrical and Electronic Engineering **2012 – 2013**

Position: Lab in Charge

Projects:

- Development of a Noninvasive Continuous Blood Pressure Measurement and Monitoring System, (**IEEE indexed**).
- Electronic Energy Meter with Remote Monitoring and Billing System, (**IEEE indexed**).

Khulna University of Engineering and Technology (Bangladesh), Simulation and Hardware Laboratory, Department of Electrical and Electronic Engineering **2010 – 2011**

Position: Undergraduate (senior student)

Projects:

- Automatic Motion Tracking and Chaos Analysis of a Real Time Moving Object (**IEEE indexed**).
- Classification of Real Time Moving Object Using Echo State Network (**IEEE indexed**).

Research Interest:

Photovoltaic devices, Optoelectronics, Photonic Devices, Nanotechnology and Nanofabrication.

APPOINTMENTS & POSITIONS

Graduate Student fellowship

2016 - contd.

Physical Chemistry and Applied Spectroscopy Group (C-PCS)

Center for Advanced Solar Photophysics

Los Alamos National Laboratory (LANL)

Los Alamos, NM 87545, USA

Graduate Teaching Assistantship

2015 - 2016

Electrical and Computer Engineering Department

University of New Mexico (UNM)

Albuquerque, NM 87131-0001, USA

Course: ECE-101, ECE- 590.

Graduate Research Assistantship **2013 - 2015**
Center for Advanced Photovoltaic
Department of Electrical Engineering and Computer Sciences
South Dakota State University
Brookings, SD 57007, USA
<http://www.sdstate.edu/eecs/about/faculty/qiquan-qiao/equipment-and-facilities.cfm>

Lecturer (full time) **2012 – 2013**
Department of Electrical and Electronic Engineering,
Khulna University of Engineering and Technology,
<http://kuet.ac.bd/eee/abu/>
Khulna, Bangladesh.

Lab in Charge **2012 – 2013**
Simulation and Hardware Laboratory
Khulna University of Engineering and Technology,
<http://www.kuet.ac.bd/departments/index.php/welcome/index/40>
Khulna, Bangladesh.

Engineer (Research oriented), part time **2012 – 2013**
Consultancy Research & Testing Services (CRTS)
Khulna University of Engineering and Technology,
<http://www.kuet.ac.bd/departments/index.php/welcome/index/40>
Khulna, Bangladesh.
Responsibility: Design, Development and Testing of different Industrial Equipment

Project Instructor, part time **2013**
IDCOL Solar Home System- Bangladesh (Funded by **World Bank**)
<http://www.worldbank.org/projects/P107906/bangladesh-idcol-solar-home-systems-project?lang=en>,
<http://foundation.e-arttic.com/wiki/tiki-index.php?page=IDCOL%3A+Renewable+Energy+Projects>
Certified authority: Khulna University of Engineering and Technology,
Khulna, Bangladesh.
Responsibility: to train the students on solar home system connection at rural area of Bangladesh

MEMBERSHIP OF PROFESSIONAL & LEARNED SOCIETIES

- Member of **Organizing Committee** of International Conference on Electrical Information and Communication Technology, (EICT-2013).
http://www2.kuet.ac.bd/eict2013/?page_id=109
- Member of Steering Committee of **TECH FIESTA`12**, an Inter University Software Exhibition and Project Competition of Bangladesh. <http://www.eeeassociationkuet.com/>
- **Reviewer** of International Scholars Journals.
www.internationalscholarsjournals.org/
- Materials Research Society (MRS) [2014-2015]
- SPIE- the international society for optics and photonics (ID # 3626798)

- IEEE (ID # 93068121)
- IEEE Photonics Society (formerly IEEE LEOS)
- IEEE Electron Device Society
- IEEE Nanotechnology Council
- IEEE Sensors Council
- IEEE Council on Superconductivity
- Reviewer of **2nd International Conference on Electrical Information and Communication Technology (EICT)**.
<http://www2.kuet.ac.bd/eict2015/>
- Reviewer of Journal of Advanced Physics (<http://www.aspbs.com/jap.htm>)

HONORS AND AWARDS

- Attained graduate student fellowship position in Physical Chemistry and Applied Spectroscopy Group (C-PCS) of Center for Advanced Solar Photophysics at **Los Alamos National Laboratory (LANL)**.
- **Fellowship** for Ph.D. in Optical Science and Engineering program, Electrical and Computer Engineering Department (OSE/ECE) at University of New Mexico (UNM), USA.
(contact person: <http://professorhayat.com/>)
- Awarded prestigious "**2014 SPIE Travel Scholarship**" in the amount of \$2000 to attend SPIE Optics + Photonics Symposium 2015 at San Diego, CA, USA, August 9-13, 2015.
http://spie.org/Documents/Courses/Education_Outreach/Scholarships/Abu-Mitul-PR14.pdf
- Awarded "**Travel grant**" to attend **Kentucky Organic Electronic Materials Symposium (KOEM)**, June 22-24. <http://www.kynsfepscor.org/Symposium/KOEM.aspx>
- Invited to join "**SDSU Phi Kappa Phi**" chapter due to outstanding academic achievements at South Dakota State University (SDSU).
Note: Membership is by invitation only to SDSU's top 7.5% of second-term juniors and the **top 10%** of seniors and graduate students.
<http://www.sdsufoundation.org/2014/12/south-dakota-states-phi-kappa-phi-chapter-initiates-40-members.html>
- Selected to be member of **Golden Key International Honour Society at South Dakota State University** due to ranked within the top 15% of the class.
- Honored **Gold medal** for securing 1st position and getting highest CGPA in the faculty
<http://www2.kuet.ac.bd/convocation/medal.php>
- Awarded "**Best student award for the year 2010**" by KUET Alumni, Canada and IEB, Bangladesh.
<http://kuetians.atspace.com/alumni.html>, <http://kuetalumni.com/>, <http://iebeed.org/>.
- Nominated for "**Prime Minister Gold Medal**" for being **faculty 1st** by University Grants Commission of Bangladesh (UGC). <http://www.ugc.gov.bd/university/?action=public>
- Achieved **University Technical Scholarship** throughout the 4 years of B.Sc. for outstanding performance in education.
- **YGPA** in final year: **3.97** (out of 4.00) and occupied position in **Dean's List** (in B.Sc).
- Achieved **Honors GPA** in 7 semesters out of 8 in B.Sc.
- Awarded "**Reimbursement of Expenses against one way air travel**" from the Bangladesh Sweden Trust Fund (Academic Session: 2013).
Authority: Economic Relations Division, Ministry of Finance, Bangladesh.
http://erd.gov.bd/images/Notice/2014-2015/bstf_report_Final_231114.pdf
<http://bstf.erd.gov.bd/app/standard/login/login.php>
- Working under research project of **NSF CAREER grant, NSF CAREER (ECCS-0950731), NASA EPSCoR (NNX13AD31A) and NSF MRI (grant no. 1229577)**.

WORKSHOPS, TRAINING AND SYMPOSIUM

- Attendee and presented poster in **SPIE Optics + Photonics Symposium 2015** at San Diego, CA, USA, August 9-13, 2015.
- Attendee and presented poster in **Kentucky Organic Electronic Materials Symposium**, June 22 - 24, 2014.
- Attendee of **Chemical Hygiene and Laboratory Safety Class** at South Dakota State University
- Successfully completed **Radiation Safety Training (May 22, 2014)** for safe use of **XRD** at South Dakota State University.
- Attendee of a **"Tour to East River Electric's Dispatch and Technology Centers - SIOUXLAND PE31 CHAPTER"**, organized by **IEEE Siouxland Section**.
- Successful completion of **Collaborative Institutional Training Initiative (CITI program)** for NSF funded projects.
<https://www.citiprogram.org/index.cfm?pageID=22>
- Invited and attendee of **Material Science and Engineering (MSE) Research Exposition** at Washington State University (WSU), Pullman in 2015.
- Invited and attendee of **Material Science and Engineering (MSE) RED Weekend event** at University of Houston, Texas in 2015.
- Invited to join **Energy, Materials and Nanotechnology (EMN) Beijing Meeting**, from April 22 to 25, 2016. <http://www.emnmeeting.org/beijing/>
- Invited to join **Solar Energy Forum-2016, Qingdao, China**, from November 10-12, 2016.
<http://www.bitcongress.com/sef2016/>
- **"Treasurer"** of Materials Research Society (MRS) Student chapter at South Dakota State University (2014 - 2015).
- Worked as **"Judge"** at **2015 Eastern South Dakota Science and Engineering Fair**, held in Frost Arena, South Dakota State University.
- Successfully completed **"HAZCOM training"** of **Center for High Technology Materials (CHTM)** at University of New Mexico.
- Worked as **"Judge"** at **iBN-SINA Mind Crafters School**, held in Islamic Center of New Mexico (ICNM), Albuquerque, New Mexico; organized by Salam academy and Islamic Center of New Mexico (ICNM).
Note: It's a robotic and gaming competition for school students.
- Attended 7 days training at Bangladesh Power Development Board, Khulna Power Station (110MW & 60MW unit), Khulna and certified.
- Trained through workshop on Embedded system Design and Development Organized by IICT, BUET and funded by World Bank. **Chief Instructor:** Prof. Dr. Mohd. Liakot Ali (<http://teacher.buet.ac.bd/liakot/>)
- Participated and certified to be present in various workshops including **S-PAC**, organized by **IEEE KUET Branch**.
<http://theinstitute.ieee.org/people/students/organizing-an-ieee-student-professional-awareness-conference875> , <http://sites.ieee.org/sb-kuet/>

MENTORING EXPERIENCE

I have the experience of mentoring KUET undergraduate students. Our research was mainly simulation and hardware based. We published some of our works in International conferences and journal. I have trained the following students in fabricating and characterizing organic photovoltaic devices.

- **Laursen, Evan Luverne**, SDSU undergraduate student (evan.laursen@jacks.sdstate.edu)
- **Neupane, Upendra**, SDSU MSc student (upendra.neupane@sdstate.edu)

- **Sally Adel**, SDSU PhD Student (sally_mabrouk85@yahoo.com)
- **Elbohy, Hytham Ibrahim**, SDSU PhD student (hytham.elbohy@jacks.sdstate.edu)

PUBLICATIONS

- Swaminathan Venkatesan, Evan C. Ngo, Qiliang Chen, Ashish Dubey, Mohammad Lal, Nirmal Adhikari, **Abu Farzan Mitul**, and Qiquan Qiao, "Benzothiadiazole based Polymer for Single and Double Junction Solar Cells with High Open Circuit Voltage", *Nanoscale*, 2014,6, 7093-7100.
DOI: 10.1039/C4NR01040J
- **Abu Farzan Mitul**, Lal Mohammad, Swaminathan Venkatesan, Nirmal Adhikari, Qi Wang, Ashish Dubey, Devendra Khatiwada and Qiquan Qiao, " Low temperature efficient interconnecting layer for tandem polymer solar cells " (**Accepted** to publish in *Nano Energy*- Elsevier, **IF: 10.211**).
<http://www.sciencedirect.com/science/article/pii/S2211285514201546>
Note: Accepted as cover article in *Nano Energy*- Elsevier.
- Nirmal Adhikari, Ashish Dubey, Devendra Khatiwada, **Abu Mitul**, Qi Wang, Swaminathan Venkatesan, Anastasiia Iefanova, Jiantao Zai, Xuefeng Qian, Mukesh Kumar, Qiquan Qiao, Interfacial study to suppress charge carrier recombination for high efficiency Perovskite solar cells, *ACS Applied Materials & Interfaces*, accepted, 2015. <http://pubs.acs.org/doi/abs/10.1021/acsami.5b09797>
- **Abu Farzan Mitul**, Lal Mohammad, Bjorn Vaagensmith, Ashish Dubey, Devendra Khatiwada, Qiquan Qiao, Optimization of interconnecting layers for double and triple junction polymer solar cells, *IEEE Journal of Photovoltaics*, 2015.
[http://ieeexplore.ieee.org/xpl/articleDetails.jsp?reload=true&arnumber=7283539&filter%3DAND\(p_IS_Number%3A5986669\)](http://ieeexplore.ieee.org/xpl/articleDetails.jsp?reload=true&arnumber=7283539&filter%3DAND(p_IS_Number%3A5986669))
- Devendra Khatiwada, Swaminathan Venkatesan, Jihua chen, Qiliang Chen, Nirmal Adhikari, **Abu Farzan Mitul**, Cheng Zang, Sun Jianyuan and Qiquan Qiao, " Morphological Evolution and its Impacts on Photovoltaic Performance of Polymer Solar Cells", *IEEE Transactions on Electron Devices*, 62 (4), 1284-1290,2015.
<http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=7060639&url=http%3A%2F%2Fieeexplore.ieee.org%2Fiel7%2F16%2F4358746%2F07060639.pdf%3Farnumber%3D7060639>
- Lal Mohammad, **Abu Mitul**, Qi Wang, Bjorn Vaagensmith, Cheuk-Lam Ho, Wai-Yeung Wong and Qiquan Qiao, Influence of nanoscale morphology on performance of inverted structure metallated conjugated polymer solar cells, *IEEE Transactions on Electron Devices*, 62(9), 3029-3033, 2015.
<http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=7173016&url=http%3A%2F%2Fieeexplore.ieee.org%2Fiel7%2F16%2F7210242%2F07173016.pdf%3Farnumber%3D7173016>
- Devendra Khatiwada, Swaminathan Venkatesan, Qiliang Chen, Jihua Chen, Nirmal Adhikari, Ashish Dubey, **Abu Farzan Mitul**, Lal Mohammed and Qiquan Qiao, Improved performance by morphology control via fullerenes in PBDT-TBT-alkoBT based organic solar cells, *Journal of Materials Chemistry A*, 2015, 3, 15307 - 15313. <http://pubs.rsc.org/en/content/articlelanding/2015/ta/c5ta02709h#!divAbstract>
- Lal Mohammad, Qiliang Chen, **Abu Mitul**, Jianyuan Sun, Devendra Khatiwada, Bjorn Vaggensmith, Cheng Zhang, Jing Li, Qiquan Qiao, Improved Performance for Inverted Organic Photovoltaics via Spacer

between Benzodithiophene and Benzothiazole in Polymers, Journal of Physical Chemistry C, accepted, 2015. <http://pubs.acs.org/doi/abs/10.1021/acs.jpcc.5b05608>

- Lal Mohammad, **Abu Farzan Mitul**, Sudhan Sigdel, Ashish Dubey, Devendra Khatiwada, Nirmal Adhikari, Hytham Elbohy and Qiquan Qiao, Interface modification of inverted structure PSBTBT:PC70BM solar cells for improved performance, IEEE Journal of Photovoltaics, 62, 3029-3033, 2015. <http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=7279064&url=http%3A%2F%2Fieeexplore.ieee.org%2Fiel7%2F5503869%2F5986669%2F07279064.pdf%3Farnumber%3D7279064>
- Devendra Khatiwada, Swaminathan Venkatesan, Nirmal Adhikari, Ashish Dubey, **Abu Farzan Mitul**, Lal Mohammed, Anastasiia Iefanova, Seth Darling, and Qiquan Qiao, Efficient Perovskite Solar Cells by Temperature Control in Single and Mixed Halide Precursor Solutions and Films, Journal of Physical Chemistry C, accepted, 2015. <http://pubs.acs.org/doi/abs/10.1021/acs.jpcc.5b08294?journalCode=jpccck>
- Md. Manirul Islam, Fida Hasan Md. Rafi, **Abu Farzan Mitul**, Mohiuddin Ahmad, M. A. Rashid, and M. Farek bin A. Malek, "Development of a Noninvasive Continuous Blood Pressure Measurement and Monitoring System", Proceedings of International Conference on Informatics, Electronics & Vision (ISSN: 2226-2105), ICIEV12, May 18~19, 2012, Dhaka, Bangladesh. http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=6317436&contentType=Conference+Publications&searchField%3DSearch_All%26queryText%3DMitul
- Soundaram J. Ananthakrishnan, Jacob Strain, Niharika N. Sreeramulu, **Abu Mitul**, Louis E. McNamara, Anastasiia Iefanova, Nathan I. Hammer, Qiquan Qiao, and Hemali Rathnayake, A Novel Donor-Donor Dyad of P3HT-block- Poly(anthracene-9,10-diyl): Synthesis, Solid-State Packing, and Electronic Properties, Polymer Science, Part A: Polymer Chemistry, accepted 2016. <http://onlinelibrary.wiley.com/doi/10.1002/pola.28189/abstract>
- **Abu Farzan Mitul**, Muhammad Rakeeb, Md. Manirul Islam and Md. Shahjahan, "Automatic Motion Tracking and Chaos Analysis of a Real Time Moving Object", Proc. 7th International Conference on Electrical & Computer Engineering (ICECE 2012), pp. 872-875, December 20-22, 2012, Dhaka, Bangladesh, 2012. http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6471689&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxppls%2Fabs_all.jsp%3Farnumber%3D6471689
- Md. Abu Shahab Mollah, Md. Liton Hossain, **Abu Farzan Mitul**, " High Efficiency InGaN Based Quantum Well & Quantum Dot Solar Cell", ELEKTRIKA - UTM Journal of Electrical Engineering, Vol 15, No 2 (2013), pp. 27-31, ISSN 0128-442. <http://conf.fke.utm.my/elektrika/index.php/elektrika/article/view/220>
- Md. Shareef Iftekhar, **Abu Farzan Mitul**, Fida Hasan Md Rafi, Mohammad Muhiminun Islam, "Performance Improvement of a Solar Cell Using Particular Window Material (GaP)", International Conference on Electrical, Computer and Telecommunication Engineering (ICECTE), pp. 65-68, 1~ 2 December 2012, Rajshahi, Bangladesh. http://icecte-ruet.com/?page_id=82
- Ashim Gurung, Hytham Elbohy, Devendra Khatiwada, **Abu Farzan Mitul** and Qiquan Qiao, A simple cost-effective approach to enhance power conversion performance of platinum counter electrode-based bifacial dye sensitized solar cells, IEEE Journal of Photovoltaics, accepted, 2016. <http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=7470245>

- **Abu Farzan Mitul**, Fida Hasan Md Rafi, Md. Manirul Islam, Mohiuddin Ahmad, “Microcontroller Based Remote Control of Home Appliances”, International Conference on Electrical, Computer and Telecommunication Engineering (ICECTE), pp. 511-514, 1~ 2 December 2012, Rajshahi, Bangladesh. http://icecte-ruet.com/?page_id=82
- Sohel Hossain, Md. Farid Uddin Khan, Md. Liton Hossain and **Abu Farzan Mitul**, “A Simulation Analysis of Dislocations Reduction in InxGa1-xN/GaN Heterostructure Using Step-graded Interlayers”, American Journal of Engineering Research (AJER), pp. 110-116, 2013. [http://www.ajer.org/papers/v2\(12\)/L0212110116.pdf](http://www.ajer.org/papers/v2(12)/L0212110116.pdf)
- **Abu Farzan Mitul**, Md. Jubayer Alam Rabin, Muhammad Rakeeb, Abdullah Al Mamun Khan, G.M. Sultan Mahmud Rana, Abu Shahab Mollah, Md. Hafizur Rahman, “Classification of Real Time Moving Object Using Echo State Network”, Proceedings of 2nd International Conference on Informatics, Electronics & Vision ICIEV13, May 17~18, 2013, Dhaka, Bangladesh. http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6572662&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxppls%2Fabs_all.jsp%3Farnumber%3D6572662
- Md. Liton Hossain, Md. Imtiaz Islam, **Abu Farzan Mitul**, Md. Abu Shahab Mollah, Md. Jahirul Islam, “Efficiency Enhancement of InGaN Based Quantum Well and Quantum Dot Solar Cell”, Proceedings of 2nd International Conference on Informatics, Electronics & Vision ICIEV13, May 17~18, 2013, Dhaka, Bangladesh. http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6572562&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxppls%2Fabs_all.jsp%3Farnumber%3D6572562
- Md. Manirul Islam, Mohiuddin Ahmad, Md. Ajjul Islam, **Abu Farzan Mitul**, M. F. Malek, and M. A. Rashid, “Electronic Energy Meter with Remote Monitoring and Billing System”, Proc. 7th International Conference on Electrical & Computer Engineering (ICECE 2012), pp. 240-243, December 20-22, 2012, Dhaka, Bangladesh, 2012. http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6471530&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxppls%2Fabs_all.jsp%3Farnumber%3D6471530
- Rajab Suliman, **Abu Farzan Mitul**, Lal Mohammad, Yunpeng Pan, Qiquan Qiao, "Modeling of organic solar cell based on response surface methodology" (accepted).

POSTER PRESENTATION

- **Abu Farzan Mitul**, Lal Mohammad, Swaminathan Venkatesan, Nirmal Adhikari, Ashish Dubey, Devendra Khatiwada, Qi Wang and Qiquan Qiao, "A novel low temperature solution processed interfacial layer for double and tripple junction polymer solar cell", Kentucky Organic Electronic Materials Symposium, June 22-24, 2014.
- **Abu Farzan Mitul**, Lal Mohammad, Qi Wang, Qiquan Qiao, " Towards a lossless and transparent interfacial layer for double and triple junction polymer solar cell", (Abstract ID: 2129143), MRS- Spring 2015 (accepted).
- Lal Mohammad, **Abu Farzan Mitul**, Swaminathan Venkatesan, Qiliang Chen, Qiquan Qiao, " High current generating wide band gap polymer solar cell with good air stability", MRS- Spring 2015 (accepted).
- **Abu Farzan Mitul**, Lal Mohammad, Nirmal Adhikari, Ashish Dubey, Devendra Khatiwada, Bjorn Vaagensmith and Qiquan Qiao, " Optimization of interfacial layer for double and triple junction polymer solar cell", (Paper ID: 9567-65), SPIE Organic Photonics + Electronics 2015. <http://spie.org/Publications/Proceedings/Paper/10.1117/12.2187673>

- Nirmal Adhikari, Ashish Dubey, Devendra Khatiwada, Sudhan Sigdel, Swaminathan Venkatesan, **Abu Farzan Mitul** and Qiquan Qiao, "Morphological and interfacial engineering in Perovskite solar cell for improved charge transport", MRS- Spring 2015 (accepted).
- Rajab Suliman, **Abu Farzan Mitul**, Lal Mohammad, Yunpeng Pan and Qiquan Qiao, "Modelling of bulk heterojunction polymer solar cell based on response surface methodology", National Symposium on R (programming) language at South Dakota State University, May 14, 2015, held in University Student Union, Brookings, SD, USA.
<http://site1.auth.dev.sdsu.commonspotcloud.com/mathstat/research.cfm>
- Nirmal Adhikari, Ashish Dubey, Devendra Khatiwada, **Abu Farzan Mitul**, Lal Mohammad, Mukesh Kumar, Qiquan Qiao, Effect of humidity on electronic grain boundary properties of Perovskite solar cells using nanoscale characterization, 2015, MRS Fall Meeting & Exhibit, November 29 - December 4, 2015, Boston, Massachusetts Oral presentation.
<http://appsrvsp.sdstate.edu/onlinedirectory/Vita/Qiquan.pdf>

RELATED COURSE WORKS

Graduate

- Electronic Properties of Materials
- Organic Photovoltaics
- Sensors and measurements
- Advanced Electronic materials
- Advanced Photovoltaic devices
- Photovoltaic cells and materials
- Energy conversion
- Advanced Optics I
- Optoelectronic semiconductor materials and devices
- Engineering Electromagnetics
- Semiconductor properties
- Avalanche Photodiodes

Undergraduate

- Electrical Engineering materials
- Semiconductor device and technology
- Electronics I, II, III

REFERENCES:

Dr. Edl Schamiloglu

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 Department of Electrical & Computer Engineering
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 The University of New Mexico
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Dr. Jaehoon Lim

Guest Scientist
 Center for Advanced Solar Photophysics
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 Cellular: (505) 470-3172
 E-mail: jaehoon@lanl.gov
 Relation: Supervisor in work at LANL

Dr. Sanjay Krishna

Director, Center for High Technology Materials
Endowed Chair in Microelectronics
Professor and Regents Lecturer
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Lab: <http://www.krishnairlab.com/>

Dr. Majeed M. Hayat

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<http://www.ece.unm.edu/faculty-staff/electrical-and-computer/jane-lehr.html>

Dr. Mahdi Farrokh Baroughi

Display Electrical Engineer at Apple, Cupertino, CA
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mbaroughi@seas.harvard.edu
<http://www.linkedin.com/in/mahdi-baroughi-2857446>
Relation: Student at South Dakota State University.

Dr. Ralph Dawson

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