



# Di Zhang, Ph.D.

*Dept. of Sustainable and Renewable Energy Engineering (SREE)*  
*University of Sharjah, Sharjah, United Arab Emirates*  
*(971) 056 191 5604*  
*[zdi@sharjah.ac.ae](mailto:zdi@sharjah.ac.ae)*  
*[Profile Page](#)*

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## OVERVIEW

Assistant Professor, 3<sup>rd</sup> generation photovoltaics, perovskite solar cells/photodetectors, surface-enhanced Raman scattering (SERS) sensors, plasmonic nanomaterials, graphene.

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## APPOINTMENTS

**Assistant Professor** 2015-Present  
*University of Sharjah*

- Affiliation: Dept. of Sustainable and Renewable Energy Engineering (SREE)
- Research: 3<sup>rd</sup> generation solar cells, SERS Raman sensors, plasmonic nanomaterials, graphene
- Teaching: solar PV technology & systems, energy storage, optoelectronics device physics

**Postdoctoral Research Associate** 2014-2015  
*The University of Hong Kong*

- Affiliation: Dept. of Electrical and Electronic Engineering
- Research: organic/perovskite solar cells & photodetectors, plasmonic nanomaterials, graphene

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## EDUCATION

**Ph.D. Electrical and Electronic Engineering** 2010-2014  
*The University of Hong Kong, Hong Kong (QS ranking #25)*

*“Transparent Electrode Design and Interface Engineering for High Performance Organic Solar Cells”*

Advisor: Prof. Wallace C.H. Choy

**B.Sc. Microelectronics** 2006-2010  
*Tsinghua University, China (QS ranking #15)*

*“The Fabrication and Characteristics Investigation of Graphene Thin Film”*

Advisor: Prof. Dan Xie

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## PROFESSIONAL ACTIVITIES

**Associate Editor** 2020-Present  
*Journal of Functional Materials and Chemical Engineering (JFCME)*

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**Topic Editor**

2021-2022

*Frontiers in Chemistry: Research Topics on “Novel Magneto-Optic Materials and Their Applications”*

**Guest Associate Editor**

2018-2019

*Frontiers in Materials: Research Topics on “Emerging Perovskite and Interfacial Materials for Photovoltaic Applications”*

**Journal Peer Reviewer**

*J. Mater. Chem. C, RSC Adv., Appl. Phys. Lett., Phys. Chem. Chem. Phys., IEEE Photonics J., Front. Chem. Sci. Eng., MRS Adv., Sci. Total Environ., Microelectron. J., AEU-Int. J. Electron. C., etc.*

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## **JOURNAL PUBLICATIONS [Google Scholar][ResearchGate]**

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Citations: 1,876 h-index: 17 i10-index: 23

- [1] Alami, A. H., Alachkar, A., Alasad, S., Alawadhi, M., **Zhang, D.**, Aljaghoub, H., and Elkeblawy, A. **2021**, “Investigating calotropis procera natural dye extracts and pedot: Pss hole transport material for dye-sensitized solar cells”, *Agronomy Research*, vol. 19, DOI: [10.15159/ar.21.064](https://doi.org/10.15159/ar.21.064).
- [2] **Zhang, D.**, Allagui, A., Elwakil, A., Yan, Z., and Lu, H. **2020**, “Active circuit model of low-frequency behavior in perovskite solar cells”, *Organic Electronics*, vol. 85, p. 105 804, DOI: [10.1016/j.orgel.2020.105804](https://doi.org/10.1016/j.orgel.2020.105804).
- [3] Alami, A. H., Faraj, M., Aokal, K., Hawili, A. A., Tawalbeh, M., and **Zhang, D.** **2020**, “Investigating various permutations of copper iodide/FeCu tandem materials as electrodes for dye-sensitized solar cells with a natural dye”, *Nanomaterials*, vol. 10, no. 4, p. 784, DOI: [10.3390/nano10040784](https://doi.org/10.3390/nano10040784).
- [4] Daoudi, K., Columbus, S., **Zhang, D.**, Allagui, A., Shameer, M., Taieb, A., and Alawadhi, H., *et al.* **2020**, “Structural effects of silver-nanoprism-decorated si nanowires on surface-enhanced raman scattering”, *Nanotechnology*, vol. 31, no. 25, p. 255 706, DOI: [10.1088/1361-6528/ab80fa](https://doi.org/10.1088/1361-6528/ab80fa).
- [5] Allagui, A., **Zhang, D.**, Khakpour, I., Elwakil, A. S., and Wang, C. **2020**, “Quantification of memory in fractional-order capacitors”, *Journal of Physics D: Applied Physics*, vol. 53, no. 2, 02LT03, DOI: [10.1088/1361-6463/ab4e73](https://doi.org/10.1088/1361-6463/ab4e73).
- [6] **Zhang, D.**, Allagui, A., Elwakil, A., Nassef, A., Rezk, H., Cheng, J., and Choy, W. **2019**, “On the modeling of dispersive transient photocurrent response of organic solar cells”, *Organic Electronics*, vol. 70, pp. 42–47, DOI: [10.1016/j.orgel.2019.03.054](https://doi.org/10.1016/j.orgel.2019.03.054).
- [7] Alami, A. H., Aokal, K., **Zhang, D.**, Taieb, A., Faraj, M., Alhammadi, A., Ashrad, J., Soudan, B., El Hajjar, J., and Irimia-Vladu, M. **2019**, “Low-cost dye-sensitized solar cells with ball-milled tellurium-doped graphene as counter electrodes and a natural sensitizer dye”, *International Journal of Energy Research*, vol. 43, pp. 5824–5833, DOI: [10.1002/er.4684](https://doi.org/10.1002/er.4684).
- [8] **Zhang, D.**, Taieb, A., Alami, A. H., Aokal, K., Alawadhi, H., Abed, J., and Bichara, L. **2019**, “A cost-effective nanoparticle-gap-film SERS sensor using graphene nanospacer by one-step transfer-free mechanical milling”, *Journal of Applied Physics*, vol. 125, no. 6, p. 063 102, DOI: [10.1063/1.5078864](https://doi.org/10.1063/1.5078864).

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- [9] Allagui, A., **Zhang, D.**, and Elwakil, A. S. **2018**, “Short-term memory in electric double-layer capacitors”, *Applied Physics Letters*, vol. 113, no. 25, p. 253 901, DOI: [10.1063/1.5080404](https://doi.org/10.1063/1.5080404).
- [10] Al-Chaderchi, M., Sopian, K., Salameh, T., **Zhang, D.**, and Alghoul, M. A. **2018**, “Enhancing the performance of PV panel undergoing shading effects”, *International Journal of Power Electronics and Drive Systems (IJPEDS)*, vol. 9, no. 4, pp. 1937–1943, DOI: [10.11591/ijpeds.v9.i4.pp1937-1943](https://doi.org/10.11591/ijpeds.v9.i4.pp1937-1943).
- [11] Li, C., Wang, Z. S., Zhu, H. L., **Zhang, D.**, Cheng, J., Lin, H., Ouyang, D., and Choy, W. **2018**, “Thermionic emission–based interconnecting layer featuring solvent resistance for monolithic tandem solar cells with solution-processed perovskites”, *Advanced Energy Materials*, vol. 0, no. 0, p. 1 801 954, DOI: [10.1002/aenm.201801954](https://doi.org/10.1002/aenm.201801954).
- [12] Allagui, A., Elwakil, A. S., Said, Z., Abdelkareem, M. A., and **Zhang, D.** **2018**, “Band-pass filter and relaxation oscillator using electric double-layer capacitor”, *ChemElectroChem*, vol. 5, no. 23, pp. 3793–3798, DOI: [10.1002/celec.201800872](https://doi.org/10.1002/celec.201800872).
- [13] Alami, A. H., Aokal, K., **Zhang, D.**, and Soudan, B. **2018**, “Bulk turbostratic graphene deposition on aluminum substrates via high-pressure graphite blasting”, *Appl Nanosci*, vol. 8, no. 8, pp. 1943–1950, DOI: [10.1007/s13204-018-0862-1](https://doi.org/10.1007/s13204-018-0862-1).
- [14] Alami, A. H., Aokal, K., **Zhang, D.**, Tawalbeh, M., Alhammadi, A., and Taieb, A. **2018**, “Assessment of Calotropis natural dye extracts on the efficiency of dye-sensitized solar cells”, *Agronomy Research*, vol. 16, no. 4, pp. 1569–1579, DOI: [10.15159/ar.18.166](https://doi.org/10.15159/ar.18.166).
- [15] Alami, A. H., Aokal, K., Assad, M. A., **Zhang, D.**, Alawadhi, H., and Rajab, B. **2017**, “One-step synthesis and deposition of few-layer graphene via facile, dry ball-free milling”, *MRS Advances*, vol. 2, no. 15, pp. 847–856, DOI: [10.1557/adv.2017.245](https://doi.org/10.1557/adv.2017.245).
- [16] Zhu, H. L., Cheng, J., **Zhang, D.**, Liang, C., Reckmeier, C. J., Huang, H., Rogach, A. L., and Choy, W. **2016**, “Room-temperature solution-processed NiO<sub>x</sub>:PbI<sub>2</sub> nanocomposite structures for realizing high-performance perovskite photodetectors”, *ACS Nano*, vol. 10, no. 7, pp. 6808–6815, DOI: [10.1021/acsnano.6b02425](https://doi.org/10.1021/acsnano.6b02425).
- [17] Alami, A. H., **Zhang, D.**, Aokal, C., Abed, J., Abdoun, I. A., and Alawadhi, H. **2016**, “Influence of magnetic field on the mesoporous structure of Fe-Cu compounds in dye-sensitized photovoltaic cells”, *Metallurgical and Materials Transactions E*, vol. 3, no. 1, pp. 37–45, DOI: [10.1007/s40553-016-0067-z](https://doi.org/10.1007/s40553-016-0067-z).
- [18] Choy, W. and **Zhang, D.** **2015**, “Solution-processed metal oxides as efficient carrier transport layers for organic photovoltaics”, *Small*, vol. 12, no. 4, pp. 416–431, DOI: [10.1002/smll.201502258](https://doi.org/10.1002/smll.201502258).
- [19] Zhang, H., Mao, J., He, H., **Zhang, D.**, Zhu, H. L., Xie, F., Wong, K. S., Grätzel, M., and Choy, W. **2015**, “A smooth CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> film via a new approach for forming the PbI<sub>2</sub> nanostructure together with strategically high CH<sub>3</sub>NH<sub>3</sub>I concentration for high efficient planar-heterojunction solar cells”, *Advanced Energy Materials*, vol. 5, no. 23, p. 1 501 354, DOI: [10.1002/aenm.201501354](https://doi.org/10.1002/aenm.201501354).
- [20] Liu, J., Li, X., Zhang, S., Ren, X., Cheng, J., Zhu, L., **Zhang, D.**, Huo, L., Hou, J., and Choy, W. **2015**, “Synergic effects of randomly aligned SWCNT mesh and self-assembled molecule layer for high-performance, low-bandgap, polymer solar cells with fast charge extraction”, *Advanced Materials Interfaces*, vol. 2, no. 17, p. 1 500 324, DOI: [10.1002/admi.201500324](https://doi.org/10.1002/admi.201500324).

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- [21] Mao, J., Zhang, H., He, H., Lu, H., Xie, F., **Zhang, D.**, Wong, K. S., and Choy, W. **2015**, “Smooth  $\text{CH}_3\text{NH}_3\text{PbI}_3$  from controlled solid–gas reaction for photovoltaic applications”, *RSC Adv.*, vol. 5, no. 90, pp. 73 760–73 766, DOI: [10.1039/C5RA12530H](https://doi.org/10.1039/C5RA12530H).
- [22] Lu, H., **Zhang, D.**, Cheng, J., Liu, J., Mao, J., and Choy, W. **2015**, “Locally welded silver nano-network transparent electrodes with high operational stability by a simple alcohol-based chemical approach”, *Advanced Functional Materials*, vol. 25, no. 27, pp. 4211–4218, DOI: [10.1002/adfm.201501004](https://doi.org/10.1002/adfm.201501004).
- [23] Jiang, F., Choy, W., Li, X., **Zhang, D.**, and Cheng, J. **2015**, “Post-treatment-free solution-processed non-stoichiometric  $\text{NiO}_x$  nanoparticles for efficient hole-transport layers of organic optoelectronic devices”, *Advanced Materials*, vol. 27, no. 18, pp. 2930–2937, DOI: [10.1002/adma.201405391](https://doi.org/10.1002/adma.201405391).
- [24] Xie, F., **Zhang, D.**, Su, H., Ren, X., Wong, K. S., Grätzel, M., and Choy, W. **2015**, “Vacuum-assisted thermal annealing of  $\text{CH}_3\text{NH}_3\text{PbI}_3$  for highly stable and efficient perovskite solar cells”, *ACS Nano*, vol. 9, no. 1, pp. 639–646, DOI: [10.1021/nn505978r](https://doi.org/10.1021/nn505978r).
- [25] Lu, H., **Zhang, D.**, Ren, X., Liu, J., and Choy, W. **2014**, “Selective growth and integration of silver nanoparticles on silver nanowires at room conditions for transparent nano-network electrode”, *ACS Nano*, vol. 8, no. 10, pp. 10 980–10 987, DOI: [10.1021/nn504969z](https://doi.org/10.1021/nn504969z).
- [26] Li, X., Choy, W., Ren, X., **Zhang, D.**, and Lu, H. **2014**, “Highly intensified surface enhanced Raman scattering by using monolayer graphene as the nanospacer of metal film–metal nanoparticle coupling system”, *Advanced Functional Materials*, vol. 24, no. 21, pp. 3114–3122, DOI: [10.1002/adfm.201303384](https://doi.org/10.1002/adfm.201303384).
- [27] Choy, W., Sha, W., Li, X., and **Zhang, D.** **2014**, “Multi-physical properties of plasmonic organic solar cells (invited paper)”, *Progress In Electromagnetics Research*, vol. 146, pp. 25–46, DOI: [10.2528/PIER14031810](https://doi.org/10.2528/PIER14031810).
- [28] Xie, F., Choy, W., Sha, W., **Zhang, D.**, Zhang, S., Li, X., Leung, C. W., and Hou, J. **2013**, “Enhanced charge extraction in organic solar cells through electron accumulation effects induced by metal nanoparticles”, *Energy Environ. Sci.*, vol. 6, no. 11, pp. 3372–3379, DOI: [10.1039/C3EE42440E](https://doi.org/10.1039/C3EE42440E).
- [29] Lin, P., Choy, W., **Zhang, D.**, Xie, F., Xin, J., and Leung, C. W. **2013**, “Semitransparent organic solar cells with hybrid monolayer graphene/metal grid as top electrodes”, *Appl. Phys. Lett.*, vol. 102, no. 11, p. 113 303, DOI: [10.1063/1.4798254](https://doi.org/10.1063/1.4798254).
- [30] **Zhang, D.**, Xie, F., Lin, P., and Choy, W. **2013**, “Al- $\text{TiO}_2$  composite-modified single-layer graphene as an efficient transparent cathode for organic solar cells”, *ACS Nano*, vol. 7, no. 2, pp. 1740–1747, DOI: [10.1021/nn3058399](https://doi.org/10.1021/nn3058399).
- [31] **Zhang, D.**, Choy, W., Xie, F., Sha, W., Li, X., Ding, B., Zhang, K., Huang, F., and Cao, Y. **2013**, “Plasmonic electrically functionalized  $\text{TiO}_2$  for high-performance organic solar cells”, *Advanced Functional Materials*, vol. 23, no. 34, pp. 4255–4261, DOI: [10.1002/adfm.201203776](https://doi.org/10.1002/adfm.201203776).
- [32] **Zhang, D.**, Choy, W., Xie, F., and Li, X. **2012**, “Large-area, high-quality self-assembly electron transport layer for organic optoelectronic devices”, *Organic Electronics*, vol. 13, no. 10, pp. 2042–2046, DOI: [10.1016/j.orgel.2012.06.012](https://doi.org/10.1016/j.orgel.2012.06.012).
- [33] Feng, T., Xie, D., Tian, H., Peng, P., **Zhang, D.**, Fu, D., Ren, T., Li, X., Zhu, H., and Jing, Y. **2012**, “Multi-layer graphene treated by  $\text{O}_2$  plasma for transparent conductive electrode applications”, *Materials Letters*, vol. 73, pp. 187–189, DOI: [10.1016/j.matlet.2011.12.121](https://doi.org/10.1016/j.matlet.2011.12.121).

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- [34] **Zhang, D.**, Choy, W., Wang, C. C. D., Li, X., Fan, L., Wang, K., and Zhu, H. **2011**, “Polymer solar cells with gold nanoclusters decorated multi-layer graphene as transparent electrode”, *Appl. Phys. Lett.*, vol. 99, no. 22, p. 223 302, DOI: [10.1063/1.3664120](https://doi.org/10.1063/1.3664120).
- [35] Fu, D., Xie, D., Zhang, C., **Zhang, D.**, Niu, J., Qian, H., and Liu, L. **2010**, “Preparation and characteristics of nanoscale diamond-like carbon films for resistive memory applications”, *Chinese Phys. Lett.*, vol. 27, no. 9, p. 098 102, DOI: [10.1088/0256-307X/27/9/098102](https://doi.org/10.1088/0256-307X/27/9/098102).

## CONFERENCE PRESENTATIONS

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- [36] Alami, A. H., Aokal, K., Tawalbeh, M., Faraj, M., Majeed, A., Salameh, T., **Zhang, D.**, and Al-Othman, A. **2020**, “Synthesis and characterization of polycrystalline copper iodide (CuI) thin films”, presented at the 2020 Advances in Science and Engineering Technology International Conferences (ASET), Dubai, p. 1 570 618 266. DOI: [10.1109/ASET48392.2020.9118282](https://doi.org/10.1109/ASET48392.2020.9118282).
- [37] Alami, A. H., Tawalbeh, M., **Zhang, D.**, Aokal, K., Elsherbiny, L., Yasser, Z., and Abdelghani, A. **2018**, “Linear angstrom model applied to weather data collected for the city of Sharjah”, presented at the 2018 5<sup>th</sup> International Conference on Renewable Energy: Generation and Applications (ICREGA), Al Ain, pp. 150–153. DOI: [10.1109/ICREGA.2018.8337583](https://doi.org/10.1109/ICREGA.2018.8337583).
- [38] **Zhang, D.**, Alami, A. H., Tawalbeh, M., Aokal, K., Alhammadi, A., Taieb, A., and Rabah, R. A. **2018**, “Efficiency and high-temperature response of dye-sensitized solar cells using natural dyes extracted from Calotropis”, presented at the 2018 5<sup>th</sup> International Conference on Renewable Energy: Generation and Applications (ICREGA), Al Ain, pp. 183–187. DOI: [10.1109/ICREGA.2018.8337593](https://doi.org/10.1109/ICREGA.2018.8337593).
- [39] Alami, A. H., **Zhang, D.**, Aokal, K., Abed, J., Abdoun, I. A., and Alawadhi, H. **2015**, “Fe-Cu compounds in dye-sensitized solar cells: Influence of magnetic field on mesoporous structure”, presented at the 4<sup>th</sup> International Conference on Energy, Water and Environmental Sciences (ICEWES 2015), Ras Al Khaimah, p. 0 411 073.
- [40] Xie, F., **Zhang, D.**, and Choy, W. **2015**, “Hysteresis-free, stable and efficient perovskite solar cells achieved by vacuum-treated thermal annealing of CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub>”, presented at the SPIE Organic Photonics + Electronics, 2015, vol. 9567, San Diego, p. 95670L. DOI: [10.1117/12.2187973](https://doi.org/10.1117/12.2187973).
- [41] Choy, W., Xie, F., **Zhang, D.**, Sha, W., Li, X., and Ding, B. **2014**, “Plasmonic-electrical effects of metal nanoparticles for highly efficient organic solar cells”, presented at the Progress In Electromagnetics Research Symposium 2014, Guangzhou, Session 2P3a MS–1.5.
- [42] **Zhang, D.**, Xie, F., Lin, P., and Choy, W. **2013**, “Organic solar cells using transparent graphene cathode with Al-TiO<sub>2</sub> interfacial layer”, presented at the Progress In Electromagnetics Research Symposium 2013, Stockholm, Session 3AK.
- [43] **Zhang, D.**, Choy, W., and Zhu, H. **2012**, “PEDOT:PSS-free au nanocluster treated graphene as transparent anode for organic solar cells”, presented at the SPIE Organic Photonics + Electronics, 2012, vol. 8477, San Diego, p. 84771D. DOI: [10.1117/12.929505](https://doi.org/10.1117/12.929505).

## BOOK CHAPTER(S)

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1. **Zhang, D.**, and Allagui, A., “[Chapter 8 - Fundamentals and performance of solar photovoltaic systems](#)”, *Design and Performance Optimization of Renewable Energy Systems*, Academic Press , 117–129 (2021).

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## **RESEARCH GRANTS [≈ \$346,000/5yr]**

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1. University of Sharjah, “Absorber Engineering and Interface Design for Stable and Efficient Perovskite Solar Cells”, \$54,450 (**Co-PI**, Target Research Project, 2020-2022).
2. University of Sharjah, “Numerical and Experimental Investigations of Dust Effect on Solar Systems under United Arab Emirates Weather Conditions and Dust Mitigation Methods”, \$22,000 (**Co-PI**, Competitive Research Project 20020406150, 2020-2022).
3. University of Sharjah, “Development of photo-electrochemical fuel cells for simultaneous wastewater treatment and power generation”, \$22,000 (**Co-PI**, Competitive Research Project 18020406122, 2019-2021).
4. University of Sharjah, “Enhancement of optical, radiative and corrosion resistance properties of solar absorbers by low-cost graphene bulk surface modification”, \$22,000 (**Co-PI**, Competitive Research Project 18020408104, 2019-2021).
5. University of Sharjah, “Investigating plasmonic-electrical nanostructures for performance enhancement in dye-sensitized solar cells”, \$22,000 (**PI**, Competitive Research Project 18020406113, 2018-2020).
6. American University of Sharjah, “Enhancements of the properties the Organometallic mixed-halide perovskite solar cells using doped graphene nanoplatelets as a counter electrode”, \$20,420 (**Co-PI**, Enhanced Faculty Research Grant EFRG18-MSE-CAS-71, 2018-2019).
7. Sharjah Research Academy / University of Sharjah, “Enhancement of the power output and efficiency of dye-sensitized solar cells by investigating the counter electrode construction and natural organic sensitizers”, \$109,000 (**Co-PI**, Collaborative Research Project 1802040691-P, 2018-2020).
8. University of Sharjah, “Enhancing the performance of low-cost ball-milled graphene in energy and environmental applications”, \$19,000 (**PI**, Competitive Research Project 1702040681-P, 2017-2019).
9. University of Sharjah, “Nanotechnology application for the improvement of pedestrian walkway slip resistance performance”, \$22,000 (**Co-PI**, Competitive Research Project 1702040571-P, 2017-2019).
10. University of Sharjah, “Investigation of quasicrystal compound formation of Fe-Cu alloy using molecular dynamic modeling and experimental analysis: toward application to a mesoporous layer in the third generation photovoltaics and solar absorber”, \$22,000 (**Co-PI**, Competitive Research Project 1602040858-P, 2017-2019).
11. University of Sharjah, “Low-cost photovoltaic dye-sensitized solar cells using flexible transparent graphene electrodes and natural dyes”, \$11,000 (**PI**, Seed Research Project 1602040623-P, 2016-2017).

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## **SEMINARS AND COLLOQUIA**

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1. University of Sharjah, “A Cost-effective Raman Sensor using One-step Graphene Nanospacer”, 4<sup>th</sup> Sciences and Engineering Research Forum, 2019.04



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2. University of Sharjah, "Low-cost NP-Gap-Film SERS Nanostructures using Graphene Nanospacer", Research Summer Stay Scheme, 2018.09
  3. University of Sharjah, "Emerging Organic and Organometallic Perovskite PVs", UAE Innovation Week 2015, 2015.11
  4. University of Sharjah, "Flexible Transparent Electrodes and Hybrid Nanomaterials for Organic Photovoltaics", 2015.10

## **GRADUATION PROJECTS SUPERVISED**

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1. Aysha K. Alshamsi, Mahra R. Alsalami, Maryam A. Alderei – B.Sc. 2020/2021 "Design of a PV system using semi-transparent bifacial modules for greenhouses in the UAE"
2. Ali O. AlOwais, Sultan K. AlShamsi, Sultan M. AlOwais – B.Sc. 2020/2021 "Electrodynamic screen: a solution to dust accumulation on Mars rovers"
3. Faisal A. Alsoyan, Marwan R. Alsuwaidi, Saud F. Ayoon – B.Sc. 2020/2021 "Transient photocurrent study of solar cells"
4. Ahmed Alshamsi, Bader Alqaffi, Hamad Alhefeiti – B.Sc. 2019/2020 "Design and fabrication of large-area 3rd generation solar PV device prototype"
5. Maham Sohail, Maram Shafek, Reem Al-Ali – B.Sc. 2018/2019 "Lead-Free Perovskite Solar Cells"
6. Fatima Aljasmi, Halima Omar, Maryam Alshibli – B.Sc. 2018/2019 "Enhancing the Performance of Organic Solar Cells with Nanostructured Layers"
7. Ghaith Al Absi, Lougouman Bichara, Baraa' Al Atrash – B.Sc. 2017/2018 "Optical Enhancement of Dye-Sensitized Solar Cells using Metallic Nanomaterials"
8. Marwa Ali Abdulgadir, Noora Al Hammadi, Rafeeah Ali – B.Sc. 2017/2018 "Design and Manufacture of P3HT:PCBM Organic Solar Cells" *2<sup>nd</sup> place in Graduation Projects Fair of the College of Engineering, University of Sharjah (2017/2018 Fall)*
9. Talal Abdulla AlSaiaari, Mohamed Taoumi, Ammar Raed AlShargabi – B.Sc. 2017/2018 "Optically Enhanced Solar Cells Using Nanoimprinted Metallic Grating"
10. Rawda Alameeri, Maryam Maklai, Moodhi Rasheed – B.Sc. 2017/2018 "Electrolyte selection for third generation solar cells"
11. Montaser Moustafa, Ahmed Tarek El Bahy, Ahmed Nashaat Ali – B.Sc. 2016/2017 "Applying Plasmonic Effect on Dye-Sensitized Solar Cells by Integration of Au/Ag Nanoparticles"
12. Karam Alhussein, Abdul Rahman Al Bab, Mohannad Alajami – B.Sc. 2016/2017 "Photovoltaic and Thermoelectric Lossless Hybrid System"
13. Mariam Almaazmi, Wafa Alraeesi, Nada Mohammad – B.Sc. 2016/2017 "Performance Enhancement in Solar Cells using Optically Complementary Natural Dyes"

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14. Shatha Salem, Sara Oda, Haneen, Alkhofash – B.Sc. 2015/2016 “3D Third Generation Solar Panels using Edge Emitting Fiber Optics” *1<sup>st</sup> place (Environmental Engineering category), 4<sup>th</sup> UAE Undergraduate Student Research Competition, Abu Dhabi University, UAE*
  15. Aamirah Ashraf, Maira Qayyum – B.Sc. 2015/2016 “Electricity Generation from Gamma Radiating Dry-Cask via Scintillator and PV Cells”

## **AWARDS**

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- 2020 (Supervisor) Outstanding Team Award in the 8<sup>th</sup> Sharjah Sustainability Award (Sharjah Environmental and Protected Areas Authority, UAE)
- 2018 Research Summer Stay Scheme (University of Sharjah, UAE)
- 2017 (Supervisor) 2<sup>nd</sup> place in Engineering Design Projects Exhibition (College of Engineering, University of Sharjah, UAE)
- 2016 (Supervisor) 1<sup>st</sup> place (Environmental Engineering category) in the 4<sup>th</sup> UAE Undergraduate Student Research Competition (Abu Dhabi, UAE)
- 2010-2014 Hong Kong Ph.D. Fellowship (Research Grants Council (RGC), Hong Kong)
- 2008-2009 Outstanding Volunteer in Beijing Olympics and Paralympics (Tsinghua University, China)
- 2006-2007 Freshmen Scholarship 2<sup>nd</sup> Class (Tsinghua University, China)

## **MAJOR DEPT./UNIV. COMMITTEES CHAIRED**

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- Postdoc hiring committee for Center for Advanced Materials Research (CAMR), University of Sharjah, 2018.11 (submitted 3 candidates to HR after shortlisting and interview)
- SREE Photovoltaics Course Specialty Group, 2015 - Present

## **SIGNIFICANT COMMUNITY SERVICE**

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- Presentation for students at Ryan English School Sharjah, 2020
- Departmental committee for SREE M.Sc. & Ph.D. accreditation, University of Sharjah, 2019-2020
- Departmental committee for UAE Ministry of Education CAA accreditation, University of Sharjah, 2017-2018 (SREE Dept. passed and received Ministry CAA accreditation)
- Departmental Research Coordinator, University of Sharjah, 2017-2018
- Committee for Functional Nanomaterials Synthesis Laboratory, University of Sharjah 2016-2018 (established major equipment and hired lab officer for the Laboratory)
- Departmental committee for SREE ABET accreditation, University of Sharjah, 2015-2016 (SREE Dept. passed and received ABET accreditation)



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- CubeSat Research Laboratory Committee for Sharjah Center for Astronomy and Space Sciences (SCASS), University of Sharjah, 2015-2017

## **TEACHING**

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@ U. Sharjah, SREE Dept. (Course Instructor):

- 2020-2021 Spring: **0406463 Fuel Cells**
  
- 2015-2021 Fall & Spring: **0406320 Solar PV Systems**  
"Great understanding doctor, delivered ideas efficiently, very accurate in explaining i would definitely take other courses with Dr Di (Zhang)."  
"The course content is very interesting. It made me love my major even more. The instructor did a great job in delivering and explaining the material. he was always there if we needed any help."  
"Dr. Di (Zhang) is one the best and most passionate instructors I've ever come across. He teaches the material very clearly and passionately and is always open to answer questions the students may have."
  
- 2015-2021 Spring: **0406421 Advanced Solar Cells & Systems**  
"The class is extremely interesting and content is very informative. The course is relevant and important for any renewable engineer-to-be. Dr. Di (Zhang) explains every aspect of solar cells in detail, helping us understand them very well. It was a pleasure taking this course."
  
- 2015-2021 Fall & Spring: **0406321 Solar PV Systems Lab**  
"Before taking this lab, I liked PVs, now I love them. The doctor clearly had passion for what he was teaching, which makes understanding easier."
  
- 2015 Spring, 2018 Fall: **0406452 Energy Storage & Efficiency Lab**  
"Dr. Di (Zhang) is very good in explaining the theoretical part of the lab. He is always willing to explain more than one time and is always happy to answer all our questions. He is very helpful during the lab time and also during his office hours."

@ U. Hong Kong, EEE Dept. (Teaching Assistant):

- 2011 Fall: **ELEC8305. Flexible Organic Electronics**
- 2011 Spring, 2012 Fall: **ELEC3223. Optical Networking Devices and Technologies**
- 2010 Fall: **ELEC2401. Computer Architecture**