

CURRICULUM VITAE

PERSONAL INFORMATION



Dr. Fahim Ullah

📍 **Current Add:** *School of energy and power engineering, Institute of energy, Jiangsu University, Zhenjiang, China*

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Sex: Male | Date of birth 11/01/1988 | Nationality | Pakistani

Language: English confluent, Chinese intermediate, Urdu/Hindi

RESEARCH AREA

Solar Energy Utilization for Sustainable Water and Energy Solutions.

Key Words:

- **Solar Energy Applications** (solar collectors, solar distillation, solar dehydration)
- **Solar Cell Fabrication** (organic-silicon hybrid solar cells, efficiency enhancements)
- **Water and Wastewater Treatment** (desalination, wastewater purification)
- **Life Cycle Assessment (LCA)**
- **Python, Machine Learning (Visual Studio)**

Publication: Total papers: 45, Citations (331), h-index (11) and i10-index (11)

EDUCATION

- 09/12/2023 - continued **Post-Doctoral Fellowship**,
School of energy and power engineering, Institute of energy, Jiangsu University, Zhenjiang, China.
- 01/12/2022 – 01/12/2023 **Post-Doctoral Fellowship**
Department of Mechanical and Aerospace Engineering, Faculty of Engineering, International Islamic University Malaysia, P.O. Box 10, 50725 Kuala Lumpur, Malaysia
- 25/04/2019 - 01/05/2021 **Post-Doctoral Fellowship**
School of Electronic Science and Engineering, Joint International Research Laboratory of Information Display and Visualization, Southeast University, Nanjing 210096, China
- 15/09/2015 - 28/12/2018 **Doctor of Philosophy (Ph.D.) (Renewable Energy)**
School of Agricultural Mechanization Engineering, College of Engineering, Nanjing Agricultural University, Nanjing, China.

Ph.D. THESIS TITLE

Development and experimental study of solar collectors for the dehydration of fruits and water distillation

15/03/2011 – 10/04/2013 **Master of Science (HONS) (Renewable Energy)**
Department of Agricultural Mechanization, The University of Agriculture Peshawar, KPK, Pakistan

15/03/2007- 11/02/2011 **Bachelor of Science (HONS) (Agricultural Science)**
Department of Agricultural Mechanization, The University of Agriculture Peshawar, KPK, Pakistan

WEB LINK

- **Research Gate:** https://www.researchgate.net/profile/Fahim_Ullah6, Homepage.
- **Google Scholar:** <https://scholar.google.com/citations?user=t3D2eE0AAAAJ&hl=en>, Scholar: Google
- **ORCID ID:** <https://orcid.org/0000-0002-3689-8743/>, ORCID iD.
- **LinkedIn:** <https://www.linkedin.com/in/dr-fahim-ullah-982166177/>, LinkedIn.
- **Scihorizon ID:** <https://www.scihorizon.com/RID-20222851>
- **Web of Science Homepage:** <https://webofscience.clarivate.cn/wos/author/record/F-1932-2014>

PROJECTS INVOLVED DURING STUDIES

I was involved in the following projects during my studies;

- Designing and Optimization of sensible heat storage materials on Solar Still for the brackish water distillation system and Quality of Different Agricultural Products (Dates) (Post Doc).
- Fabrication of an Efficient Planar Organic-Silicon Hybrid Solar Cell with a 150 nm Thick Film of PEDOT: PSS with different organic/inorganic compounds (Post Doc).
- Development and Experimental Study of Solar Collectors for the Dehydration of Fruits and Water Distillation (Ph.D. Thesis).
- Development and Performance Evaluation of Parabolic Trough Solar Water Distillation Unit
- Bio-gas production from cow dung.
- Flat Plate Solar Collector for dehydration purposes.
- Data Base Programmer used for the repair and maintenance cost of Vehicles.

EXPERIENCE/TECHNIQUES

- Fabrication of silicon solar cell with PEDOT: PSS/PC₇₁BM (Rubrene, Graphene, etc).
- Designing and developing solar collectors for desalination, dehydration purposes, and heating systems.
- Designing and development of Heat Transfer Enhancement in a High-Temperature Thermal Energy Storage System.
- AFM topographic images (NanoScope Å V & Nikon Multimode Scan Asyst).
- Database Management Systems Lab and Data Structure Lab.
- Analysis and Design of experimental setup.

COMPUTER SKILLS

- Auto-CAD (2D)
- MS Office
- Origin Pro (Graphics design)
- Simulation (LCA)
- Statistical Analysis (MSTAT, SPSS)
- Adobe Illustrator etc

AWARD ACHIEVEMENTS

- Worked on a project, NSFC under grant numbers 61875241 and 1106000222 from the Joint International Research Laboratory of Information Display and Visualization Centre, Southeast University, titled “Fabrication of an Efficient Planar Organic-Silicon Hybrid Solar Cell with a 150 nm Thick Film of PEDOT: PSS with different organic/inorganic compounds.” under research and participation.
- Got Research funding from the Chinese Government for the project titled “Development and Experimental Study of Solar Collectors for the Dehydration of Fruits and Water Distillation” from the School of Agricultural Mechanization Engineering, College of Engineering, Nanjing Agricultural University, Nanjing, China under research and participation.
- Got Excellent International Student award, Nanjing Agricultural University, China.
- Got Silver Medal in Master of Science (HONS), The University of Agriculture Peshawar, KPK-Pakistan.
- Got Nanjing Government Scholarship, China.
- Reviewed research articles in Desalination, Energy efficiency, Agricultural engineering journals, etc.

RESEARCH/ INTERNSHIP EXPERIENCE

- **Principal Engineer**, *CASCADE ENGINEERING CONSULTANTS Sarhad Plaza Warsak Road Peshawar* (1st April, 2021-25th March 2023)
- **Administrative officer**, *IQRA High School & College Qader Khel Karak, KPK-Pakistan* (1st Jan, 2014- 30th Aug, 2015)
- **Lecturer**, *Wisdom Science College (Chokara) Karak, KPK-Pakistan* (5th Jan 2013- 30th July 2013)
- **Lecturer**, *Department of Agricultural Mechanization, The University of Agriculture Peshawar, KPK, Pakistan* (29th Sep 2011- 30th June 2012)

PUBLICATIONS

1. Kumar, S., **Ullah, F.**, Cao, B., Ding, J., Keerio, H.A., Wang, S., Sustainable vanillin production: Biotechnological advances, catalytic innovations, and integrated assessment, *Bioresource Technology* (2025), doi: <https://doi.org/10.1016/j.biortech.2025.133014>
2. **Ullah, F.**; Hasrat, K.; Mu, M.; Wang, S.; Kumar, S. Optimizing Solar–Biomass Pyrolysis: Innovations in Reactor Design and Thermal–Solar System Efficiency. *Energies* 2025, 18, 2640. <https://doi.org/10.3390/en18102640>
3. **Fahim Ullah.** Evaluating the global warming potential of a 4.6 kWp solar PV system in Karak-KPK: A life cycle assessment. *Applied Thermal Engineering* 266 (2025) 125790
4. **Fahim Ullah.** (Book) Enhanced Efficiency in Organic/Inorganic Hybrid Silicon Solar Cells

(Influence of Advanced Surface Engineering and D-A-D Organic Material Design). ISBN: 978-99993-2-198-3; Eliva Press Global Ltd. part of Eliva Press S.R.L., 2024.

5. **Fahim Ullah.** Performance evaluation of improved indirect flat-plate solar collector drier with integrated phase change material for drying kiwifruit (*Actinidia deliciosa* A. chev.). [Journal of Stored Products Research](#) 111, 102551 (2025).
6. **Fahim Ullah.** Optimizing Solar Cell Performance: Hybrid Planar-Si/Organic Heterojunction Solar Cells Achieve 14.75% Efficiency through Dibenzothiophene-Spirobifluorene-Dithienothiophene Insertion Layer Integration. [Energy technology](#), 2024/8/30. <https://doi.org/10.1002/ente.202401249>,
7. **Fahim Ullah.** PEDOT: PSS/PC71BM with various Rubrene doping levels for the production of Organic/Inorganic hybrid silicon solar cells with enhanced yield efficiency. [Materials Science and Engineering B](#) 308 (2024) 117552.
8. **Fahim Ullah.** Design and Development of D-A-D Organic Material for Solution-Processed Organic/Si Hybrid Solar Cells with 17.5% Power Conversion Efficiency. [Molecules](#) 2024, 29, 5369. <https://doi.org/10.3390/molecules29225369>.
9. **Fahim Ullah.** Achieving 15.75% efficiency in solar cells: Advanced surface engineering using Tetra-Tert-Butyl-Tercarbazol-Benzotrile and organic layer integration in n-type silicon wafer and hybrid Planar-Si systems. [Solid-State Electronics](#) 223 (2025) 109025.
10. **Fahim Ullah.** An assessment of the performance of heat transfer enhancement for optimizing high-temperature thermal energy storage. [Building Services Engineering Research and Technology](#). 2024;0(0). doi:10.1177/01436244241261162.
11. **Fahim Ullah, M Kang.** Impact of air flow rate on drying of apples and performance assessment of parabolic trough solar collector. [Applied Thermal Engineering](#) 127 (2017) 275–280, 2017/12/25.
12. **Fahim Ullah.** Performance assessment of convective heat transfer in tubes with a temperature difference in the high-temperature solar power generation system. [Journal of Food Processing and Preservation](#). 45, 12. <https://doi.org/10.1111/jfpp.16010>.
13. **Fahim Ullah, Muhammad Ameen, and Kamran Hasrat.** Experimental study on optimization of heat storage and melting salts of solar energy. [J Food Process Preservation](#). 2018. e13685; DOI: 10.1111/jfpp.13685
14. **Fahim Ullah, Mansoor Khan Khattak, and Kang Min.** Experimental investigated the comparison of the compound parabolic concentrator and ordinary heat pipe type Solar concentrator. [Energy and Environment](#), 21, 2018.
15. **Fahim Ullah and Min Kang.** Performance Evaluation of Solar Tracking Tilt Sensor Parabolic Trough Solar Collector for Water Distillation. [Energy & Environment](#) 0(0) 1–17.
16. **Fahim Ullah.** Experimentally investigated the development and performance of a parabolic trough solar water distillation. chapter in the Open Access book, "[Technology in Agriculture](#)". DOI: 10.5772/intechopen.98571
17. **Fahim Ullah, Kang Min, Mansoor Khan Khattak, Said Wahab, Nauman Wahab, Muhammad Ameen, Muhammad Sohail Memon, Xingsheng Wang, Shakeel Ahmed Soomro, Khurram Yousaf, Ninghui Li & Jun Yang.** Effects of Different Drying Methods on Some Physical and Chemical Properties of Loquat (*Eriobotrya japonica*) Fruits, [International Journal of Fruit Science](#), DOI: 10.1080/15538362.2018.1435330.
18. **Fahim Ullah, Kamran Hasrat, Sami Iqbal, Imtaiz Hussain, Azam Hussain & Yasir Mumtaz**

- (2021) An Approach to Evaluate Dehydration of Apples (*Malus Domestica L*) with the Effect of Temperature and Time Interval under the Response Surface Method. [International Journal of Fruit Science](#), 21:1, 657-669, DOI: 10.1080/15538362.2021.1920553.
19. **Fahim Ullah**, Sajjad Ahmad, Said Wahab, Alam Zeb, Mansoor Khan Khattak, Saleem Khan, and Min Kang. Quality Evaluation of Biscuits Supplemented with Alfalfa Seed Flour. [Foods](#) 2016, 5, 68; DOI: 10.3390/foods5040068. ISSN 2304-8158
 20. **Fahim Ullah**, Mansoor Khan Khattak, Min Kang, Xiuqing Fu, Niu Hengtai, Li Hengzheng, and Ninghui Li. Experimental Study on A Flat Plate Collector Assisted for Solar Water Heating Unit. Conference proceeding Advances in Engineering Research, Volume 63 (5th ICSEEE, 2016). ISSN:2352-5401.
 21. **Fahim Ullah**, Mansoor Khan Khattak, Said Wahab, Min Kang, and Nauman Wahab. Performance Evaluation of Dual-Axis Tracking System of Parabolic Trough Solar Collector. IOP Conf. Series: Materials Science and Engineering 301 (2018) 012166 doi:10.1088/ISSN:1757-899X/301/1/012166.
 22. Kamran Hasrat, **Fahim Ullah**, Fulong Ma, Guimin Zhao, Saima Misal, Fangru He, and Zhengjian Qi. Fabrication of organic-silicon Hybrid solar cells based on **PEDOT: PSS** doped and non-doped with CBP and Dibenzothiophene-Benzoyl-Tertiarybutylcarbazole. [J. Electronic Materials](#). DOI: 10.1007/s11664-021-09370-0.
 23. Sami Iqbal, Dan Su, Yi Yang, **Fahim Ullah**, Huanli Zhou, Azam Hussain, and Tong Zhang. Fabrication of an Efficient Planar Organic-Silicon Hybrid Solar Cell with a 150 nm Thick Film of PEDOT: PSS. [Micromachines](#) 2019, 10, 648; doi:10.3390/mi10100648.
 24. Muhammad Ameen, Zhang Zhuo, Wang Xiao chan, Muhammad Yaseen, Muhammad Umair, Rana Shahzad Noor, Lu Wei, Khurram Yousaf, **Fahim Ullah**, and Muhammad Sohail Memon. An Investigation of a Root Zone Heating System and Its Effects on The Morphology of Winter-Grown Green Peppers. [Energies](#) 2019, 12(5), 933; <https://doi.org/10.3390/en12050933> (ISSN 1996-1073).

REFERENCES

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