

# Dr ZULFIQAR ALI



## Contact

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## PROFESSIONAL SUMMARY

Dr Zulfiqar is an accomplished management professional engaged in business incubation. He has the ability to plan and implement innovative initiatives for bringing tangible improvements and achieving strategic goals. Dr Zulfiqar is a fast-paced learner who has worked on versatile assignments with multi-disciplinary teams from different countries. His areas of interest are Entrepreneurship, Innovation and Sustainable Development.

## EDUCATION

|                        |   |
|------------------------|---|
| <b>NEP Program</b>     | National Entrepreneurship Program Diploma               |
| 2017                   | IBA Karachi   |
| <b>PhD</b>             | Material Science (Physics-Inorganic Chemistry)          |
| 2010-2013              | University of Nantes, IMN-CNRS, <b>FRANCE</b>           |
| <b>Masters</b>         | Nanotechnology Structures <b>(With Distinction)</b>     |
| 2008-2009              | University of Paris-Sud 11, INSTN-CEA, <b>FRANCE</b>    |
| <b>Bachelors Engg.</b> | Electronics Engineering <b>(With Distinction)</b>       |
| 2003-2006              | Mehran University of Engineering & Technology, Jamshoro |

## WORK EXPERIENCE (+12 Years Experience)

1) Sep 2020 – Present, Post: Director ORIC, Ziauddin University, Karachi

2) Jul 2015 – Sep 2020, Post: Manager Innovation & Entrepreneurship (ORIC),

Head of Innovation & Entrepreneurship Center ([www.iec.muett.edu.pk](http://www.iec.muett.edu.pk))

Employer: Mehran University of Engineering & Technology, Sindh

Working with the Office of Research, Innovation & Commercialization to bring indigenously developed technologies to the industry and provide sustainable solutions to the local communities. I am managing an award winning business incubation center, supervising a team +12 employees. I helped to establish this center in less than 2 years and make it reach global recognition. We have graduated +30 startups and +50 commercial projects. In addition, we are implementing Education for Sustainable Development (ESD) program for SDGs.

### Key Achievements:

- Won the International ‘Best Young Incubator Award’ by UBI-Global 2019-20.
- Launched MUETech Pvt Ltd, a 1<sup>st</sup> social enterprise for a public sector university in Sindh for providing sustainable development solutions (registered with the SECP).
- Successfully completed Social Integration & Outreach Program by training more than 1000 female faculty/students in 5 Colleges under UNESCO with special focus on SDG 6 Clean Water and SDG 7 Clean Energy.
- Prepared Feasibility and secured funding for Mehran UET Science Technology Park (Phase 1 Rs. 38 Million)
- Prepared Feasibility and secured funding for RINU Social Entrepreneurship Program (Phase 1 Rs. 40 Million)
- Prepared Feasibility and secured funding for HEC Masters Training on Business Entrepreneurship (Rs 3.8 Million)
- Focal Person for the following: TISC, CPEC, International Office, SDGs, British Council Scholarship, Mevlana Exchange Program (Turkey), Renewable Energy Initiatives.
- Prepared Innov. & Entrepreneurship Ecosystem Report: Moving the university towards an innovation hub in the region.
- Built Triple-Helix+ liaison as the Secretary of Standing Committee on Business Academia Collaboration on Water, an initiative of Mehran UET, University of Utah USA, and Federal Chamber of Commerce and Industries.

**3) Apr 2015 – Jul 2015, Post: Asst Professor**

**Employer: Isra University, Sindh**

Teaching and Research on Renewable Energy. In addition, I taught the course of Engineering Economics & Management at undergraduate level. Implemented Solar Energy initiatives.

**4) Dec 2014 – Apr 2015, Post: Sr. Programme Coordinator**

**Employer: Sindh Rural Support Program, Hyderabad**

- Program coordination and administrative position. I was responsible for program implementation, research & development, proposal writing and compliance with funding agency regulations.

**5) May 2014 – Dec 2015, Post: Asst Professor**

**Employer: Sukkur IBA, Sindh**

Research and Teaching on Renewable Energy. Curriculum Design and Laboratory Development. Working on PV projects development in Sindh. Started the novel Engineering program “Energy Systems”; focusing on both Conventional and Alternate Energy. We developed the Laboratories and trainings that form the bedrock of this program.

- Successfully developed and launched the 1st Energy Systems Engineering bachelors program which focuses on Renewable Energy.

- Feasibility on Sukkur IBA Campus solarization developed for Sindh Government. Successfully approved and plant of 600 KW installed on campus.

- Mentored the incubation of startups in Upper Sindh

**6) Oct 2013- May 2014, Post: Asst. Professor**

**Employer: COMSATS (CIIT), Islamabad**

Research and Teaching. Creating linkages between Academia, Government and Industry. Curriculum design for new technical programs. Developing Course Content for Professional Education, Testing and Certification Organization International (PEOI).

- Official Reviewer of the Master Plan for 100 MW Quaid-e-Azam Solar Park (QASP) in Bhawalpur, Punjab and among the panel of Experts for Punjab Government (Najam Shah CEO).

- Consultative member for improving project implementation and TVET in Pakistan with GIZ.

**7) Aug 2013-Oct 2013, Post: Research Associate**

**Employer: ICT – Mehran University of Engineering & Technology, Jamshoro**

I was providing research support to various research groups in the FEECE faculty. Conducting project evaluation for research commercialization. I helped to identify research priorities areas and developed research strategy. Oct 2009- Jul 2013, Post: Research Assistant

**Employer: Institut des Matériaux Jean Rouxel de Nantes (CNRS), France**

I was responsible for conducting experimental and simulation research on novel low-cost materials via nanotechnology for achieving highly efficient solar cells. I methodically fabricated the prototype devices (Magnetic Sputtering, Spin/Dip-Coating, Screen-printing), for conversion and storage of energy developed from synthesis of novel materials via soft chemistry. And utilized various techniques for their characterization including spectroscopy, AFM, STM, XRD, electro-chemical testing and IV responses.

**8) Jan 2009-Aug 2009, Post: Research Assistant**

**Employer: ENSCP-IRDEP Électricité de France (EDF), France**

As a research assistant at ENSCP, I was responsible for the synthesis and testing of nanoparticles of ZnO/TiO2 for photocatalysis using electro-pyrolysis. We were successful in improving efficiency of waste-water treatment systems. And at EDF, I characterized Hot-Carrier Solar Cells developed by Lockheed Martin for ultra high efficiency. I tested the cells using multiple characterization techniques and determined their limiting efficiencies.

**9) Jan 2007 – Jun 2008, Post: Jr. Engineer**

**Employer: Xena Satellite Communications, Karachi**

I was part of a team that setup up the newly opened radio station in Karachi. I resolved the problems of frequency conflict and participated in Capacity Building. Equipment purchases according to QCBS were advised to the management.

- Successfully set up the radio station in Dabechi, Thatta and then contributed to the relocation to Karachi. The radio station that I helped setup is now running successfully in Karachi called Josh FM99.

**SKILLS**

|           |   |
|-----------|---|
| Technical | Business Models/Canvas, Lean Startup, Project Feasibility. Policy Analysis. Project/Program Management, Techno-Economic Reports, Mentoring, Training and Counselling. Innovation & Entrepreneurship Bootcamps and Research Commercialization Analysis |
| Softwares | PVSYST, HOMER, MATLAB, MS Office.   |
| Languages | English, French, Urdu and Sindhi  |

## TRAININGS

Setsquared Partnership, University of Bristol, Jan – Sep 2020, **UK**

Sakura Program – Japanese Ministry of Science & Technology, Tokyo University, 9-15 Oct 2019, **Japan**

CPEC Higher Education Consortium, Wuhan, 24-27 April 2018, **China**

-MIT Media Lab and Harvard Innovation Lab Summer Visit, HKS Alumni Network, 22 – 31 July 2015, **USA**

-Leaders in Science and Innovation Policy Workshop, February, 2019, NIC, NED University Karachi

Workshop for newly established ORIC, 02 - 04 May 2018, NUST Islamabad

## LEARNING VISITS (Recent 2018-19)

Entrepreneurship Plaza, Tokyo; Andalusia Technology Park; The Green Ray, **Spain**; Innovation Center Kosovo; Konya Teknokent; InnoPark **Turkey**; Zhejiang University Entrepreneurship Center, Hangzhou; **Qatar** Science & Technology Park; Yildiz Science Technology Park; ITU-ARI Teknokent.

## COURSES TAUGHT (Recent)

‘Sustainable Futures’, Prishtina Summer University, **Kosovo**, 8-19 July 2019

‘Energy Transition’, Selcuk University-KTU, Turkey, 19-31 May 2019

‘Professional Development & Entrepreneurship’, Environment & Management Dept, 2019

‘Small Business Startups’, General, HEC Diploma Program, 2018

‘Environmental Economics’, Masters, US-PCAS-Water, 2017-2019

## PROFESSIONAL SOCIETIES

- Technical Expert on the Advisory Board of QA Solar Power Company, Govt. of Punjab.
- Technical Expert on the Advisory Board of InduSun Pvt Ltd Power Company.
- Technical Expert on the Advisory Board of Xena Satellite Communications, Karachi.
- Mentor: Society of Women Engineers (SWE) International Affiliate MUET.
- Mentor: Innovation & Entrepreneurship Society (IES).
- Member of European Cooperation in the field of Scientific and Technical Research COST.
- Member of Pakistan Engineering Council (PEC), Islamabad Pakistan.
- Member of Energy & Environment Research Group (EERG), MUET Pakistan.
- Member of Pakistan Society of Development Economics (PSDE) – PIDE, Pakistan.
- Member of Institute of Electrical & Electronics Engineers (IEEE), USA
- Member of La Fédération de Recherche sur l'Energie Solaire (FEDESOL), France.

## REFERENCES

| NAME                                | ADDRESS   | BUSINESS OR OCCUPATION   |
|-------------------------------------|---|--|
| Prof. Dr. Muhammad Aslam Uqaili     | Mehran UET, Jamshoro, Pakistan<br>vc@admin.mueta.edu.pk           | The Vice-Chancellor<br>Mehran UET, Jamshoro, Pakistan                  |
| Prof. Dr. Jean-Francois Guillemoles | IRDEP, (R&D institute for PV Energy),<br>jfguillemoles3@gmail.com | Director of Research at the CNRS and<br>the French Director of NextPV  |
| Prof. Dr. Madad Ali Shah            | Sukkur IBA, Sukkur, Pakistan<br>madad@iba-suk.edu.pk              | The Vice Chancellor (BBSUTSD),<br>Chairman Electrical Engg. Dept. SIBA |

## **PUBLICATIONS/CONFERENCES**

| Type            | Published In   | Date     | Description   |
|-----------------|--|----------|---|
| Research Papers | International Journal  | 2018     | Z. A. Umrani et al, "Dye sensitized solar power generating window: towards environmentally sustainable energy efficiency in ICT" IJCAET, Inderscience 2018  |
| Books           | Foreign Journal  | 21/09/16 | "An Overview of the Challenges for Cost-effective and Energy Efficient Retrofits of the Existing Building Stock", 255-276, Cost-Effective Energy -Efficient Building  |
| Research Papers | Presented and Published in International Conference Held in Pakistan | 18/12/16 | Z A Umrani & M A Uqaili, "Social Entrepreneurship and Community Outreach", International Conference on developing public sector Universities into Entrepreneurial Institutions, Dawood• IBA Karachi, 17•18 Dec 2016                         |
| Research Papers | Presented and Published in International Conference Held in Pakistan | 27/08/16 | Z A Umrani & M A Uqaili, "Supporting Social Entrepreneurship at Universities: Integrating SDGs in Final Year Projects and Startups", 2nd International Conference for Entrepreneurial Engineering (ICEE 2016), IoBM Karachi, 27•28 Aug 2016 |
| Research Papers | Presented and Published in International Conference Held in Pakistan | 01/04/16 | Z A Umrani & M A Uqaili, "Livestock and Renewable Energy: Challenges and Opportunities in Pakistan", GIKI•SDSU INTERNATIONAL CONFERENCE ON NEXT GENERATION ENERGY TECHNOLOGIES, GIK TOPI, 01•03 April 2016                                  |
| Research Papers | Presented and Published in International Conference Held in Pakistan | 12/03/15 | Z A Umrani, "Solar Energy: Challenges and Opportunities in Pakistan", 3rd International Conference on Energy and Environment: Innovation, Research & Sustainability (ICEE'15), QUEST Nawabshah, 25-27 Feb 2015                              |
| Research Papers | Presented and Published in International Conference Held in Pakistan | 24/11/14 | Z A Umrani, "ADAPTIVE TECHNOLOGIES AND MARKETS FOR SOLAR ENERGY IN PAKISTAN", International Conference on Energy Systems and Policies (ICESP), Air University   |
| Research Papers | Presented and Published in International Conference Held in Pakistan | 22/10/14 | Z A Umrani, "Exploring New Frontiers in Solar Cell Efficiency", 3rd International Conference on Energy, Environment and Sustainable Development, EESD 2014, Mehran UET, Jamshoro, 22•24 Oct 2014  |
| Research Papers | Presented and Published in International Conference Held Abroad      | 26/05/14 | Z A Umrani and M A Shah, "Renewable Energy Scenario in Pakistan", Baku World Science Forum, Baku, Azerbaijan 26•31 May 2014   |
| Research Papers | Presented and Published in International Conference Held in Pakistan | 09/04/14 | Z A Umrani, "IBs in NanoTOx for Energy Storage: Photobattery" International Conference on Nanomaterials and Nanotechnology – ICNN 2014, FUUAST, Karachi, 7•9 April 2014   |
| Research Papers | Presented and Published in International Conference Held in Pakistan | 20/03/14 | Z A Umrani & J F Guillemoles, "New Concepts in Photovoltaic Solar Cell Devices", International conference on the impact of nanoscience on energy technologies (NanoSET•2014), CIIT Lahore, 18•20 March 2014                                 |
| Research Papers | Presented and Published in International Conference Held in Pakistan | 14/03/14 | Z A Umrani, "Towards low-cost Hybrid Solar Cells" International Scientific Spring • ISS 2014, NCP, ISLAM ABAD, 10•14 March 2014   |
| Research Papers | Presented and Published in International Conference Held in Pakistan | 13/12/13 | Z A Umrani, "High Efficiency Hybrid Solar Cells using IB" GIKI•SDSU International Symposium on Dye Solar Cells 2013 GIKI, Topi, 13•15 Dec 2013  |
| Thesis Written  | Published in Others  | 05/07/13 | Towards the development of 3rd generation intermediate bandgap solar cell and photobattery based on Titanium oxo•polymer sol•gels   |
| Research Papers | Seminars   | 20/11/12 | Z A Umrani, "L'energie photovoltaïque", La Fédération de Recherche sur l'Énergie Solaire FédESol, IM N Nantes France, 20•21 Nov 2012  |
| Research Papers | Seminars   | 09/10/12 | Z A Umrani, "Why Renewable Energy", Nationale• Fete de la Science, M AISON•E Nantes, France, 9 Oct 2012   |
| Research Papers | Presented and Published in International Conference Held Abroad      | 22/06/11 | Z A Umrani, "Photoelectrochemistry: Fundamentals to Solar Applications", 5th Gerischer Symposium, Berlin Germany, 22–24 June 2011   |
| Research Papers | Workshops and Symposia but not Published in Proceedings              | 05/04/11 | Z A Umrani, "Printed Electronics", IDTechEx Dusseldorf Germany, 5th – 6th April 2011  |
| Research Papers | Presented and Published in International Conference Held Abroad      | 22/10/10 | Z A Umrani, "DETAILED•BALANCE EFFICIENCY CALCULATIONS FOR INTERMEDIATE • BANDGAPS SOLAR CELLS (IBSC) BASED ON TI OXO•POLYMER", SLONANO International  |
| Thesis Written  | Published in Others  | 25/06/09 | Characterisation of Photovoltaic Cells & Identification of the Hot•Carrier Phenomenon   |

## **SOCIAL OUTREACH**

Our work on Energy, Environment and Gender Equity in developing regions has been appreciated by the Office of Mr. Ban Ki-Moon, Mr. Erik Solheim (UNEP), Ms Irina Bokova (UNESCO), Mr. Tony Lake (UNICEF) with recognition via video from Nobel Prize winner Ms Malala Yousafzai, Oscar winner Ms Sharmeen Obaid Chinoy, Head of UNESCO (Pakistan) Ms Vibeke Jensen, UN representative Head (Pakistan) Mr. Neil Buhne and the EU Ambassador to Pakistan, Hon. Jean-Francois Cautain among others. Our work has contributed to Mehran UET being the 1<sup>st</sup> ever public university to be awarded the CSR Excellence Award in 2017.