Usman Khan

Associate Professor

School of Electrical Engineering and Computer Science

Email: usman.khan@seecs.edu.pk
Contact: 0992403586
LinkedIn:

About

Dr. Usman Khan is working as Associate Professor in the School of Electrical Engineering and Computer Science. Dr. Usman Khan has a PhD in Micro-Nano-System. Dr. Usman Khan has published 27 research articles & conference papers having a citation count of 2163, carried out 2 projects and filed 0 intellectual property.

Qualifications

PhD in Micro-Nano-System 2011 - 2014
University of Roma "Tor Vergata" , Italy

MS in Electronic Engineering 2006 - 2008
Ghulam Ishaq Khan Institute of Science & Technology , Pakistan

BS in Electrical Engg 2002 - 2006
UET Peshawar , Pakistan

Experience

Associate Professor 2021- Present
School of Electrical Engineering and Computer Science

Assistant Professor 2018 - 2021
School of Electrical Engineering and Computer Science

Research Professor 2017 - 2018
Sungkyunkwan University, South Korea , Sungkyunkwan University, South Korea

Post Doctorate 2014 - 2015
University Of Rome "Tor Vergata" , University Of Rome "Tor Vergata", Italy

Awards

Letter of Appreciation 2019

Professional Memberships

PEC Since 2009

Research Projects

National Projects

Point of Care Electrochemical Sensor for Typhoid 2020
Funding Agency: IGNITE
Amount: PKR 45,324.00
Status: Completed

Nanogenerators for Self-powered IoTs 2021
Funding Agency: HEC
Amount: PKR 18,750,000.00
Status: Completed

International Projects

Research Articles

Enhancing output efficiency in self-powered hybrid nanogenerators with micro-pyramid surface design using ceramic/polymer film for flexible wearable electronic devices 2025

Gwangseop Lee Fiza Asif Saad ur Rehman Muhammad Zubair Khan Adnan Maqbool Rizwan Ahmed Malik Usman Khan Osama Gohar Mohsin Ali Marwat Hafiz Muhammad Waseem Khalil Jung-Hyuk Koh Mohsin Saleem

RSC Advances , Volume:15, Issue:11, Page:8385-8401

Impact Factor: 3.900 | **Quartile:** 2

DOI: https://doi.org/10.1039/D4RA08556F

Fundamentals of Skin Bioimpedances 2023

Andrea Lo Presti Nerio Andrés Montoya Valeria Criscuolo Gulaly Khan Usman Khan Raffaele Vecchione CHristian Falconi

Advanced Materials , Volume 35, Issue 33, Article Number 2302127

Impact Factor: 29.4 | **Quartile:** 1 | **Citations:** 13

DOI: 10.1002/adma.202302127

Thin PDMS-on-Sacrificial-PCB Devices 2022

Riccardo Pezzilli Giuseppe Prestopino Nerio Andrés Claudio Leonardi Usman Khan Christian Falconi Pier Gianni Medaglia

ACS Applied Electronic Materials , Volume 4, Issue 9, Pages 4490-4498

Impact Factor: 4.494 | **Quartile:** 2

DOI: https://doi.org/10.1021/acsaelm.2c00734

Ultra-efficient thermo-convective solution-growth of vertically aligned ZnO nanowires 2022

Abhisek Chakraborty Andrea Orsini Jyoti Prakash Kar Francesco Gatta Usman Khan Christian Falconi

Nano Energy , Volume 97, Article Number 107167

Impact Factor: 19.069 | **Quartile:** 1 | **Citations:** 15

DOI: https://doi.org/10.1016/j.nanoen.2022.107167

Ion Gel Coated Graphene Field Effect Transistor for Humidity Sensing Applications 2021

De-Sheng Liu Usman Khan Peihang Li Mansoor Ali Khan Jiang Wu Zhiming Wang

IEEE Sensors Journal, Volume 21, Issue 17, Pages 18483-18487

Impact Factor: 4.325 | **Quartile:** 1 | **Citations:** 12

DOI: 10.1109/JSEN.2021.3092010

Piezoionic-powered graphene strain sensor based on solid polymer electrolyte 2021

De-ShengLiu Hanjun Ryu Usman Khan Sang-Woo Kim Cuo Wu Jiang Wu Zhiming Wang Jae-Hwan Jung

Nano Energy , Volume 81, Article Number 105610

Impact Factor: 19.069 | **Quartile:** 1 | **Citations:** 34

DOI: https://doi.org/10.1016/j.nanoen.2020.105610

Zero-writing-power tribotronic MoS2 touch memory 2020

Usman Khan Tae-Ho Kim Muhammad Atif Khan Jihye Kim Christian Falconi Sang-Woo Kim

Nano Energy , Volume 75, Article Number104936

Impact Factor: 17.881 | **Quartile:** 1 | **Citations:** 14

DOI: https://doi.org/10.1016/j.nanoen.2020.104936

A triboelectric nanogenerator energy harvesting system based on load-aware control for input power from 2.4 μW to 15.6 μW 2020

Karim Rawy Ruchi Sharma Hong-Joon Yoon Usman Khan Sang-Woo Kim Tony Tae-HyoungKim

Nano Energy , Volume 74, Article Number 104839

Impact Factor: 17.881 | **Quartile:** 1 | **Citations:** 19

DOI: https://doi.org/10.1016/j.nanoen.2020.104839

High Permittivity CaCu3Ti4O12 Particle-Induced Internal Polarization Amplification for High Performance Triboelectric Nanogenerators 2020

Jihye Kim Hanjun Ryu Jeong Hwan Lee Usman Khan Sung Soo Kwak Hong?Joon Yoon Sang-Woo Kim

Advanced Energy Materials , Volume10, Issue 9, Article Number 1903524

Impact Factor: 29.368 | **Quartile:** 1 | **Citations:** 153

DOI: https://doi.org/10.1002/aenm.201903524

Butylated melamine formaldehyde as a durable and highly positive friction layer for stable, high output triboelectric nanogenerators 2019

Sung Soo Kwak, Seong Min Kim Hanjun Ryu Jihye Kim Usman Khan Hong-Joon Yoon Yo Han Jeong Sang-Woo Kim

Energy and Environmental Science , Volume 12, Issue 10. Pages 3156-3163

Impact Factor: 30.289 | **Quartile:** 1 | **Citations:** 130

DOI: 10.1039/c9ee01267b

3D-printed biomimetic-villus structure with maximized surface area for triboelectric nanogenerator and dust filter 2019

Hong-Joon Yoon Dong-Hoon Kim Wanchul Seung Usman Khan Sang-Woo Kim

Nano Energy , Volume 63, Article Number 103857

Impact Factor: 16.602 | **Quartile:** 1 | **Citations:** 81

DOI: 10.1016/j.nanoen.2019.103857

Water droplet-driven triboelectric nanogenerator with superhydrophobic surfaces 2019

Tae Yun Kim Jeong Hwan Lee SeongMin Kim Usman Khan Sang-Woo Kim

Nano Energy , Volume 58, Pages 579-584

Impact Factor: 16.202 | **Quartile:** 1 | **Citations:** 150

DOI: 10.1016/j.nanoen.2019.01.078

Self-Powered Motion-Driven Triboelectric Electroluminescence Textile System 2019

Jeong Hwan Lee Hyoung Taek Kim Wanchul Seung Youngin Son Tae Yun Kim Nae-Man Park Hye-Jeong Park Seong Min Kim Usman Khan Sang-Woo Kim

ACS Applied Materials and Interfaces , Volume 11, Issue 5, Pages 5200-5207

Impact Factor: 8.758 | **Quartile:** 1 | **Citations:** 105

DOI: 10.1021/acsami.8b16023

Sustainable direct current powering a triboelectric nanogenerator via a novel asymmetrical design 2018

Usman Khan Sang-Woo Kim Jeong Hwan Lee Sung Soo Kwak Ronan Hinchet Hanjun Ryu

Energy and Environmental Science , Volume 11, Issue 8

Impact Factor: 33.250 | **Quartile:** 1 | **Citations:** 180

DOI: 10.1039/c8ee00188j

Piezoelectric properties in two-dimensional materials: Simulations and experiments 2018

Usman Khan Ronan Hinchet Christian Falconi Sang-Woo Kim

Materials Today , Volume 21, Issue 6, Pages 611-630

Impact Factor: 24.372 | **Quartile:** 1 | **Citations:** 282

DOI: 10.1016/j.mattod.2018.01.031

High-Performance Triboelectric Nanogenerators Based on Solid Polymer Electrolytes with Asymmetric Pairing of Ions 2017

Usman Khan Sang-Woo Kim Ju-Hyuck Lee Tae-Yun Kim Jeong Hwan Lee Sung Soo Kwak Hong-Joon Yoon Hanjun Ryu

Advanced Energy Materials , Volume 7, Issue 17, Article Number 1700289

Impact Factor: 21.875 | **Quartile:** 1 | **Citations:** 146

DOI: 10.1002/aenm.201700289

Research Update: Nanogenerators for self-powered autonomous wireless sensors 2017

Usman Khan Sang-Woo Kim Ronan Hinchet Hanjun Ryu

APL Materials , Volume 5, Issue 7, Article Number 073803

Impact Factor: 4.127 | **Quartile:** 1 | **Citations:** 49

DOI: 10.1063/1.4979954

High-Performance Piezoelectric, Pyroelectric, and Triboelectric Nanogenerators Based on P(VDF-TrFE) with Controlled Crystallinity and Dipole Alignment 2017

Usman Khan Sang-Woo Kim Jeong Hwan Lee Hanjun Ryu Ju-Hyuck Lee Han Kim Sung Soo Kwak Jihye Kim

Advanced Functional Materials , Volume 27, Issue 22

Impact Factor: 13.325 | **Quartile:** 1 | **Citations:** 221

DOI: 10.1002/adfm.201700702

Graphene Tribotronics for Electronic Skin and Touch Screen Applications 2017

Usman Khan Wanchul Seung Sang-Woo Kim Tae-ho Kim Hanjun Ryu

Advanced Materials , Volume 29, Issue 1

Impact Factor: 21.95 | **Quartile:** 1 | **Citations:** 244

DOI: 10.1002/adma.201603544

Triboelectric Nanogenerators for Blue Energy Harvesting 2016

Usman Khan Sang-Woo Kim

ACS Nano , Volume 10, Issue 7, Pages 6429-6432

Impact Factor: 13.942 | **Quartile:** 1 | **Citations:** 238

DOI: 10.1021/acsnano.6b04213

Self-powered transparent flexible graphene microheaters 2015

Usman Khan Tae-Ho Kim Kang Hyuck Lee Ju-Hyuck Lee Hong-Joon Yoon Ravi Bhatia Ivaturi Sameera Wanchul Seung Hanjun Ryu Christian Falconi Sang-

Woo Kim

Nano Energy , Volume 17, Pages 356-365

Impact Factor: 11.553 | **Quartile:** 1 | **Citations:** 47

DOI: 10.1016/j.nanoen.2015.09.007

An Accurate and Computationally Efficient Model for Membrane-Type Circular-Symmetric Micro-Hotplates 2014

Usman Khan Christian Falconi

Sensors , Volume 14, Issue 4, Pages 7374-7393

Impact Factor: 2.245 | **Quartile:** 1 | **Citations:** 5

DOI: 10.3390/s140407374

Micro-hot-plates without simply connected hot-spots and with almost-circular temperature distribution 2013

Usman Khan Christian Falconi

Sensors and Actuators B-Chemical , Volume 185, Pages 274-281

Impact Factor: 3.840 | **Quartile:** 1 | **Citations:** 11

DOI: 10.1016/j.snb.2013.04.098

Temperature distribution in membrane-type micro-hot-plates with circular geometry 2013

Usman Khan Christian Falconi

Sensors and Actuators B: Chemical , Volume 177, Pages 535-542

Impact Factor: 3.840 | **Quartile:** 1 | **Citations:** 14

DOI: 10.1016/j.snb.2012.11.007

Conference Proceedings

Layered Double Hydroxide Based Self-Powered Triboelectric Sensor for Biomechanical Motions 2024

Claudio Leonardi Muhammad Saad Ur Rahman Fatima Rehan Antonio Giodano Muhammad Ihzam Zia Mohsin Saleem Pier Gianni Medaglia Usman Khan

2024 21st International Bhurban Conference on Applied Sciences and Technology (IBCAST) , res.country(177,)

Citations: N/A

DOI: 10.1109/IBCAST61650.2024.10877250

An 88% Efficiency 2.4|iW to 15.6|iW Triboelectric Nanogenerator Energy Harvesting System Based on a Single-Comparator Control Algorithm 2018

Karim Rawy Hong-Joon Yoon Usman Khan Sang-Woo Kim Tony T. Kim Ruchi Sharma

IEEE Asian Solid-State Circuits Conference (A-SSCC) , res.country(227,)

Citations: N/A

DOI: 10.1109/ASSCC.2018.8579338

Book Chapters

Ferroelectricity in Perovskite Solar Cells 2022

Sungkyun Kim Sang A. Han Usman Khan Sang-Woo Kim

In: *Book on Multifunctional Organic–Inorganic Halide Perovskite* , 1st Edition, Chapter 4, Pages 69-98

Citations: N/A

DOI: https://doi.org/10.1201/9781003275930

Editorial Activities

2022

Reviewed Papers for Journals

Impact Factor: 4.105

2020

Reviewed Papers for Journals

Impact Factor: 3.998

2020

Reviewed Papers for Journals

Impact Factor: 3.275

2020

Reviewed Papers for Journals

Impact Factor: 3.275