Muhammad Ali Muhammad

Adjunct Faculty

School of Chemical & Materials Engineering

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About

Dr. Muhammad Ali Muhammad is working as Adjunct Faculty in the School of Chemical & Materials Engineering. Dr. Muhammad Ali Muhammad has a PhD in Electrical And Computer Engineering. Dr. Muhammad Ali Muhammad has published 45 research articles & conference papers having a citation count of 2007, carried out 0 projects and filed 0 intellectual property.

Qualifications

PhD in Electrical And Computer Engineering 2008 - 2013
University of Alberta , Pakistan

BSc in Electrical Engineering 2004 - 2008
University of Alberta , Pakistan

Experience

Adjunct Faculty 2024- Present
School of Chemical & Materials Engineering

Adjunct Faculty 2021 - 2021
School of Chemical & Materials Engineering

Director Research 2021 - 2021
University Main Office (UMO)

Director Research 2019 - 2021
University Main Office (UMO)

Director Research 2018 - 2019
University Main Office (UMO)

Assistant Professor 2018 - 2018
School of Chemical & Materials Engineering

Assistant Professor 2016 - 2018
School of Chemical & Materials Engineering

Postdoc Fellow 2013 - 2016
Tsinghua University China ,

Research Articles

A flexible piezoresistive strain sensor based on laser scribed graphene oxide on polydimethylsiloxane 2022
Maham Iqra Furqan Anwar Rahim Jan Muhammad Ali Muhammad
Scientific Reports , Volume 12, Issue 1, Article Number 4882
Impact Factor: 4.6 | **Quartile:** 2 | **Citations:** 45
DOI: 10.1038/s41598-022-08801-0

Graphene and MXene Based Free-Standing Carbon Memristors for Flexible 2D Memory Applications 2022
Sabeen Fatima Xu Bin Muhammad Ali Muhammad Akinwande Deji Syed Rizwan Hussain
Advanced Electronic Materials , Volume 8, Issue 1, Article Number 202100549
Impact Factor: 7.633 | **Quartile:** 1 | **Citations:** 45
DOI: 10.1002/aelm.202100549

Laser Scribed Graphene-Based Flexible Microsupercapacitors with Fractal Design 2021
Aashir Waheed Syed Muhammad Ali Muhammad
IEEE ACCESS, Volume 9, Pages 154957-154964

Impact Factor: 3.476 | **Quartile:** 2 | **Citations:** 11
DOI: 10.1109/ACCESS.2021.3128320

Fabrication and characterization of a thermophone based on laser-scribed graphene intercalated with multiwalled carbon nanotubes 2021

Moin Rabbani Aashir Waheed Syed Syed Khalid Mohammad Ali Mohammad
Nanomaterials , Volume:11, Issue:11, Article ID:2874
Impact Factor: 5.719 | **Quartile:** 1 | **Citations:** 6
DOI: 10.3390/nano11112874

Resistive switching in Al2O3 based trilayer structure with varying parameters via experimentation and computation 2020

Jameela Fatheema Sabeen Fatima Bilal Jehanzaib Ali Muhammad Ali Muhammad Tauseef Shahid Amjad Islam Syed Rizwan
AIP Advances , Volume 10, Article Number 115218
Impact Factor: 1.548 | **Quartile:** 4 | **Citations:** 2
DOI: 10.1063/5.0016027

Laser-Assisted Fabrication of Nanostructured Substrate Supported Electrodes for Highly Active Supercapacitors 2020

Mamoon Asghar Syedah Afsheen Zahra Zarah Khan Momina Ahmed Farheen Nasir Mudassir Iqbal Muhammad Ali Muhammad Asif Mahmood Deji Akinwande Syed Rizwan Hussain
Frontiers in Materials , Volue 7, Article Number 179
Impact Factor: 3.515 | **Quartile:** 2 | **Citations:** 8
DOI: 10.3389/fmats.2020.00179

A comprehensive investigation of MoO3 based resistive random access memory 2020

Jameela Fatheema Tauseef Shahid Muhammad Ali Muhammad Amjad Islam Fouzia Malik Deji Akinwande Syed Rizwan Hussain
RSC Advances , Volume 10, Pages 19337-19345
Impact Factor: 3.361 | **Quartile:** 2 | **Citations:** 29
DOI: 10.1039/d0ra03415k

A π-shaped quantum device for implementation of Bell states in solid state environment 2020

Aman Ullah Muhammad Ali Muhammad Mahmood Irtiza Hussain Syed Rizwan Hussain
Physica E: Low-dimensional Systems and Nanostructures, Volume 118, Article Number 113915
Impact Factor: 3.382 | **Quartile:** 2
DOI: https://doi.org/10.1016/j.physe.2019.113915

Investigation of Device Dimensions on Electric Double Layer Microsupercapacitor Performance and Operating Mechanism 2020

Farheen Nasir Muhammad Ali Muhammad
IEEE Access , Volume 8, Pages 28367-28374
Impact Factor: 3.367 | **Quartile:** 2 | **Citations:** 20
DOI: 10.1109/ACCESS.2020.2972080

A hardware Markov chain algorithm realized in a single device for machine learning 2018

He Tian Xue-Feng Wang Muhammad Ali Muhammad Guang-Yang Gou Fan Wu Yi Yang Tian-Ling Ren
Nature Communications , Volume: 9, Article Number: 4305
Impact Factor: 11.878 | **Quartile:** 1 | **Citations:** 49
DOI: 10.1038/s41467-018-06644-w

Fabrication and Characterization of Laser Scribed Supercapacitor Based on Polyimide for Energy Storage 2018

Tayyaba Malik Shayan Naveed Muhammad Muneer Muhammad Ali Muhammad
Key Engineering Materials , Volume 778, Pages 181-186
Impact Factor: - | **Citations:** 7
DOI: https://doi.org/10.4028/www.scientific.net/KEM.778.181

High-quality reconfigurable black phosphorus p-n junctions 2018

He Tian Linsen Li Muhammad Ali Muhammad Xuefeng Wang Yi Yang
IEEE Transactions on Electron Devices, Volume 65 , Issue 11, Pages 5118-5122
Impact Factor: 2.704 | **Quartile:** 2 | **Citations:** 6
DOI: DOI:10.1109/TED.2018.2869268

A novel artificial synapse with dual modes using bilayer graphene as the bottom electrode 2017

He Tian Wentian Mi Haiming Zhao Muhammad Ali Muhammad Yi Yang Po-Wen Chiu Tian-Ling Ren

Nanoscale , Volume: 9 Issue: 27 Pages: 9275-9283

Impact Factor: 7.233 | **Quartile:** 1 | **Citations:** 77

DOI: DOI:10.1039/c7nr03106h

A comparison of Pd and Au electrodes-based LiNbO3 surface acoustic wave devices 2016

Bo Liu Muhammad Ali Muhammad Dan-Yang Wang Xiang-Guang Tian Lu-Qi Tao Yi Yang Tian-Ling Ren

Modern Physics Letters B , Volume: 30, Issue: 32-33, Article Number:1650349

Impact Factor: 0.617 | **Quartile:** 4 | **Citations:** 2

DOI: https://doi.org/10.1142/S0217984916503498

Tunable graphene oxide reduction and graphene patterning at room temperature on arbitrary substrates 2016

Ning-Qin Deng He Tian Zhen-Yi Ju Hai-Ming Zhao Cheng Li Muhammad Ali Muhammad Lu-Qi Tao Yu Pang Xue-Feng Wang Tian-Yu Zhang Yi Yang Tian-Ling Ren

Carbon , Volume 109, Pages 173-181

Impact Factor: 6.337 | **Quartile:** 1 | **Citations:** 39

DOI: doi:10.1016/j.carbon.2016.08.005

A Miniaturized On-Chip Colorimeter for Detecting NPK Elements 2016

Rui-Tao Liu Lu-Qi Tao Bo Liu Xiang-Guang Tian Muhammad Ali Muhammad Yi Yang Tian-Ling Ren

Sensors , Volume 16(8), Article Number 1234

Impact Factor: 2.677 | **Quartile:** 1 | **Citations:** 21

DOI: doi:10.3390/s16081234

3D Stretchable Arch Ribbon Array Fabricated via Grayscale Lithography 2016

Yu Pang Yi Shu Mohammad Shavezipur Xuefeng Wang Muhammad Ali Muhammad Yi Yang Haiming Zhao Ningqin Deng Roya Maboudian Tian-Ling Ren

Scientific Reports , Volume 6, Article Number 28552

Impact Factor: 4.259 | **Quartile:** 1 | **Citations:** 15

DOI: doi:10.1038/srep28552

A point acoustic device based on aluminum nanowires 2016

Qian-Yi Xie Zhen-Yi Ju He Tian Qing-Tang Xue Yuan-Quan Chen Lu-Qi Tao Muhammad Ali Muhammad Xue-Yue Zhang Yi Yang Tian-Ling Ren

Nanoscale , Volume 8, Issue 10, Pages 5516-5525

Impact Factor: 7.367 | **Quartile:** 1 | **Citations:** 14

DOI: 10.1039/C5NR06999H

Fabrication of Hourglass-Shaped Solid-State Nanopores 2016

Xiao-Ning Li Yu-Xing Li Yi Yang Gang Wang Hou-Fang Liu Muhammad Ali Muhammad Hao-Chuan Qiu Tian-Ling Ren

ECS Journal of Solid State Science and Technology, Volume 5, Number 5, Article Number P228

Impact Factor: 1.787 | **Quartile:** 2 | **Citations:** 1

DOI: 10.1149/2.0101605jss

Surface acoustic wave devices for sensor applications 2016

Liu Bo Chen Xiao Cai Hualin Muhammad Ali Muhammad Tian Xiangguang Tao Luqi Yang Yi Ren Tianling

Journal of Semiconductors, Volume 37, Issue 2, Article Number 021001

Impact Factor: N/A | **Citations:** 184

DOI: 10.1088/1674-4926/37/2/021001

High performance lithium niobate surface acoustic wave transducers in the 4-12 GHz super high frequency range 2015

Xiao Chen Muhammad Ali Muhammad James Conway Bo Liu Yi Yang Tian-Ling Ren

Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, Volume:33, Issue:6, Article Number 06F401

Impact Factor: 1.398 | **Quartile:** 2 | **Citations:** 20

DOI: 10.1116/1.4935561

A third-order mode high frequency biosensor with atomic resolution 2015

Hua-Lin Cai Yi Yang Xiao Chen Muhammad Ali Muhammad Tian-Xiang Ye Cang-Ran Guo Li-Ting Yi Chang-Jian Zhou Jing Liu Tian-Ling Ren

Biosensors and Bioelectronics , Volume:71, Page:261-268

Impact Factor: 7.476 | **Quartile:** 1 | **Citations:** 19

DOI: 10.1016/j.bios.2015.04.043

Diazonium chemistry for the bio-functionalization of glassy nanostring resonator arrays 2015

Wei Zheng Rongbing Du Yong Cao Muhammad Ali Muhammad Steven K. Dew Mark T. McDermott Stephane Evoy

Sensors , Volume:15, Issue:8, Page:18724-18741

Impact Factor: 2.033 | **Quartile:** 1 | **Citations:** 5

DOI: 10.3390/s150818724

A spectrally tunable all-graphene-based flexible field-effect light-emitting device 2015

Xiaomu Wang He Tian Muhammad Ali Muhammad Cheng Li Can Wu Yi Yang Tian-Ling Ren

Nature Communications , Volume:6, Article number: 7767

Impact Factor: 11.329 | **Quartile:** 1 | **Citations:** 119

DOI: 10.1038/ncomms8767

A graphene-based resistive pressure sensor with record-high sensitivity in a wide pressure range 2015

He Tian Yi Shu Xue-Feng Wang Muhammad Ali Muhammad Zhi Bie Qian-Yi Xie Cheng Li Wen-Tian Mi Yi Yang Tian-Ling Ren

Scientific Reports , Volume:5, Article Number 8603

Impact Factor: 5.228 | **Quartile:** 1 | **Citations:** 491

DOI: https://doi.org/10.1038/srep08603

A flexible, transparent and ultrathin single-layer graphene earphone 2015

He Tian Yi Yang Cheng Li Wen-Tian Mi Muhammad Ali Muhammad Tian-Ling Ren

RSC Advances , Volume:5, Issue:22, Page:17366-17371

Impact Factor: 3.289 | **Quartile:** 2 | **Citations:** 43

DOI: https://doi.org/10.1039/C4RA16047A

Observation of a giant two-dimensional band-piezoelectric effect on biaxial-strained graphene 2015

Xiaomu Wang He Tian Weiguang Xie Yi Shu Wen-Tian Mi Muhammad Ali Muhammad Qian-Yi Xie Yi Yang Jian-Bin Xu Tian-Ling Ren

NPG Asia Materials , Volume:7, Issue:1, Article Number e154

Impact Factor: 8.772 | **Quartile:** 1 | **Citations:** 62

DOI: https://doi.org/10.1038/am.2014.124

A multiple resonant mode film bulk acoustic resonator based on silicon-on-insulator structures 2014

Chen Xiao Yang Yi Cai Hua-Lin Zhou Chang-Jian Ren Tian-Ling Muhammad Ali Muhammad

Chinese Physics Letters , Volume:31, Issue:12, Article Number 124302

Impact Factor: 0.947 | **Quartile:** 3 | **Citations:** 1

DOI: 10.1088/0256-307X/31/12/124302

Novel field-effect schottky barrier transistors based on graphene-MoS 2 heterojunctions 2014

He Tian Zhen Tan Can Wu Xiaomu Wang Muhammad Ali Muhammad Dan Xie Yi Yang Jing Wang Lain-Jong Li Jun Xu Tian-Ling Ren

Scientific Reports , Volume:4, Article Number 5951

Impact Factor: 5.578 | **Quartile:** 1 | **Citations:** 140

DOI: 10.1038/srep05951

Graphene earphones: Entertainment for both humans and animals 2014

He Tian Cheng Li Muhammad Ali Muhammad Ya-Long Cui Wen-Tian Mi Yi Yang Dan Xie Tian-Ling Ren

ACS Nano , Volume:8, Issue:6, Page:5883-5890

Impact Factor: 12.881 | **Quartile:** 1 | **Citations:** 114

DOI: https://doi.org/10.1021/nn5009353

SML resist processing for high-aspect-ratio and high-sensitivity electron beam lithography 2013

Muhammad Ali Muhammad Steven K Dew Maria Stepanova

Nanoscale Research Letters , Volume:8, Issue:1, Page:1-7

Impact Factor: 2.481 | **Quartile:** 1 | **Citations:** 15

DOI: https://doi.org/10.1186/1556-276X-8-139

Study of the interaction of polymethylmethacrylate fragments with methyl isobutyl ketone and isopropyl alcohol 2012

Muhammad Ali Muhammad Kolattukudy Poulose Santo Steven K. Dew Maria Stepanova

Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, Volume:30, Issue:6, Article Number 06FF11

Impact Factor: 1.267 | **Quartile:** 2 | **Citations:** 15

DOI: https://doi.org/10.1116/1.4766318

Study of development processes for ZEP-520 as a high-resolution positive and negative tone electron beam lithography resist 2012

Muhammad Ali Muhammad Kirill Koshelev Taras Fito David Ai Zhi Zheng Maria Stepanova Steven Dew

Japanese Journal of Applied Physics, Volume:51, Issue:6 PART 2, Article Number 06FC05

Impact Factor: 1.067 | **Quartile:** 3 | **Citations:** 41

DOI: 10.1143/JJAP.51.06FC05

Developer-free direct patterning of PMMA/ZEP 520A by low voltage electron beam lithography 2011

David Ai Zhi Zheng Muhammad Ali Muhammad Steven Kelly Dew Maria Stepanova

Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, Volume:29, Issue:6, Article Number 06F303

Impact Factor: 1.341 | **Quartile:** 2 | **Citations:** 3

DOI: https://doi.org/10.1116/1.3634017

Comparison between ZEP and PMMA resists for nanoscale electron beam lithography experimentally and by numerical modeling 2011

Kirill Koshelev Muhammad Ali Muhammad Taras Fito Kenneth L. Westra Steven K. Dew Maria Stepanova

Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, Volume:29, Issue:6, Article Number 06F306

Impact Factor: 1.341 | **Quartile:** 2 | **Citations:** 49

DOI: https://doi.org/10.1116/1.3640794

Fabrication of sub-10 nm silicon carbon nitride resonators using a hydrogen silsesquioxane mask patterned by electron beam lithography 2011

Muhammad Ali Muhammad S.K. Dew S. Evoy M. Stepanova

Micrfoelectronics Engineering , Volume:88, Issue:8, Page:2338-2341

Impact Factor: 1.557 | **Quartile:** 2 | **Citations:** 15

DOI: https://doi.org/10.1016/j.mee.2010.11.045

Nanomachining and clamping point optimization of silicon carbon nitride resonators using low voltage electron beam lithography and cold development 2010

Muhammad Ali Muhammad C. Guthy S. Evoy S. K. Dew M. Stepanova

Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, Volume:28, Issue:6, Pages C6P36–C6P41

Impact Factor: 1.271 | **Quartile:** 2 | **Citations:** 7

DOI: https://doi.org/10.1116/1.3517683

Systematic study of the interdependence of exposure and development conditions and kinetic modelling for optimizing low-energy electron beam nanolithography 2010

Muhammad Ali Muhammad T. Fito J. Chen S. Buswell M. Aktary M. Stepanova S.K. Dew

Micrfoelectronics Engineering , Volume:87, Issue:5-8, Page:1104-1107

Impact Factor: 1.575 | **Quartile:** 2 | **Citations:** 18

DOI: https://doi.org/10.1016/j.mee.2009.11.047

Nanoscale resist morphologies of dense gratings using electron-beam lithography 2007

Muhammad Ali Muhammad S. K. Dew K. Westra P. Li M. Aktary Y. Lauw A. Kovalenko M. Stepanova

Journal of Vacuum Science and Technology B: Microelectronics and Nanometer Structures, Volume:25, Issue:3, Pages 745-753

Impact Factor: 1.419 | **Quartile:** 1 | **Citations:** 7

DOI: 10.1116/1.2731330

Book Chapters

Laser-Scribing Technology for Wafer-Scale Graphene Devices 2016

He Tian Muhammad Ali Muhammad Wen-Tian Mi Yi Yang Tian-Ling Ren

In: *Advances in Carbon Nanostructures*, Pages 1-47

Citations: N/A

DOI: 10.5772/64228

Fundamentals of electron beam exposure and development 2011

Muhammad Ali Muhammad Mustafa Muhammad Steven K. Dew Maria Stepanova

In: *Nanofabrication: Techniques and Principles*, Chapter 2, Pages 11–41

Citations: 56

DOI: https://doi.org/10.1007/978-3-7091-0424-8_2

The Interdependence of Exposure and Development Conditions when Optimizing Low-Energy EBL for Nano-Scale Resolution 2010

Muhammad Ali Muhammad Taras Fito Jiang Chen Steven Buswell Mirwais Aktary Steven K. Dew Maria Stepanova

In: *Lithography* , Chapter 16, Pages 293-318

Citations: N/A

DOI: 10.5772/8182