



MUHAMMAD ARSHAD, PhD

ASSOCIATE PROFESSOR (TENURED)

Associate Fellow (AFHEA)

University of Veterinary and Animal Sciences Lahore, Pakistan

OFFICER IN-CHARGE: Department of Basic Sciences, Jhang-campus

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RESEARCH FIELD

- **Biofuel's Production (Bioethanol, Biodiesel & Biogas)**
 - **Climate Change**
 - **Exploitation of Animal Wastes for Bioenergy Production**
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EDUCATION AND RESEARCH EXPERIENCE

Associate Professor (Biochemistry)	Jhang-campus, University of Veterinary and Animal Sciences Lahore, Pakistan	March 25, 2021 to to-date
Assistant Professor (Biochemistry)	Jhang-campus, University of Veterinary and Animal Sciences Lahore, Pakistan	March 25, 2015 to March 24, 2021
Lecturer (Biochemistry)	Jhang-campus, University of Veterinary and Animal Sciences Lahore, Pakistan	July 28, 2012 to March 24, 2015
Assistant Professor (Biochemistry & Biotechnology)	Department of Biochemistry and Biotechnology, The Islamia University of Bahawalpur, Pakistan	March 10, 2012 to July 27, 2012
PhD (Biochemistry)	Department of Chemistry and Biochemistry, University of Agriculture Faisalabad, Pakistan Thesis: "Industrial Production of Bioethanol by Mutant Strain of <i>Saccharomyces cerevisiae</i> "	October, 2007 to December, 2011
MPhil	Department of Chemistry and Biochemistry,	December 2002 to September

(Biochemistry)	University of Agriculture Faisalabad, Pakistan	2005
	Thesis: "Optimization of Process Variables for Maximum Bioethanol Production at Industrial Scale"	
MSc (Biochemistry)	Department of Chemistry and Biochemistry, University of Agriculture Faisalabad, Pakistan	September, 2000 to December, 2002
	Thesis: "Genotoxicity of Doxycycline in Mice"	
Research Assistant	Pak-Kazakh PSF Research Project, National Institute for Biotechnology and Genetic Engineering Faisalabad, Pakistan	September, 2002 to June, 2003

INDUSTRIAL EXPERIENCE

Shift Chemist/ Assistant Manager	Started the career as trainee technologist at BIOFUEL DIVISION, SHAKARGANJ MILLS LTD Jhang, Pakistan	October 18, 2003 to July 31, 2007
	Promoted as shift chemist to administered/manage the responsibilities of Distilleries operation	
	Promoted as Assistant Manager to oversee the overall distillery plant operation/ management	
Deputy General Manager	Joined UNITED ETHANOL INDUSTRIES at Sadiqabad, Pakistan as Deputy General Manager.	July 21, 2011 to March 08, 2012
	Performed Financial, Technical and Operational management of following units Distillery plant, Bio-Gas Plant, Boilers, Rubber Oil Plant, RO Plant and Furnace Factory from July 2011 to 08 March 2012.	

TEACHING EXPERIENCE**(Biochemistry Core Courses)**

University/Department	Courses	Class
THE ISLAMIA UNIVERSITY OF BAHAWALPUR PAKISTAN	Recent Trends in Biochemistry	BS Biochemistry
	Environmental Biotechnology	MS Biotechnology
Department of Biochemistry and Biotechnology	Biochemistry of Control System	MS Biochemistry
	Biochemistry	DVM
UNIVERSITY OF VETERINARY AND ANIMAL SCIENCES LAHORE, PAKISTAN	Principles of Biochemistry	BS Applied Microbiology
	Proteomics	BS Applied Microbiology
Jhang-campus, Department	Principles of Biochemistry	MPhil (Veterinary Sciences)
	Biochemistry of Chemical Regulators	MPhil Biochemistry
	Industrial Biochemistry	MPhil Biochemistry

of Basic Sciences	Environmental Biochemistry	MPhil Biochemistry
	Enzyme Biochemistry	MPhil Biochemistry
	Recombinant DNA technology and Gene Manipulation	MPhil Biochemistry
	Advanced Biochemical Techniques	PhD (Veterinary Sciences)
	Recombinant DNA technology and Gene Manipulation	MPhil Biochemistry

(Allied Courses)

UNIVERSITY OF VETERINARY AND ANIMAL SCIENCES LAHORE, PAKISTAN Jhang-campus, Department of Social Sciences	Experimental Statistics	MPhil (Veterinary Sciences)
	Experimental Design	PhD (Veterinary Sciences)
	Livestock Economics and Business Management	
	Biostatistics	DVM
	Livestock Economics and Business Management	

- Student evaluation always above 90%

PUBLICATIONS**RESEARCH ARTICLES**

Year	Journal's Name	Title of the Research Article	Impact Factor (JCR-2019)
2008	Letters in Applied Microbiology	Optimization of process variables for minimization of byproduct formation during fermentation of blackstrap molasses to ethanol at industrial scale	2.173
2011	African Journal of Biotechnology	Improving Bio- ethanol Yield; Using Virginiamycin and Sodium Flouride at Pakistani Distillery	0.53
2014	Applied Biochemistry and Biotechnology	Kinetics and Thermodynamics of Ethanol Production by Saccharomyces cerevisiae MLD10 Using Molasses	2.277
2015	Polish Journal of Environmental Studies	Gamma Radiation Treatment for Reducing Cytotoxicity and Mutagenicity in Industrial Wastewater.	1.383
2016	Pakistan Journal of Pharmaceutical Sciences	Relationship of oxidative stress with elevated level of DNA damage and homocysteine in cardiovascular disease patients	0.649
2017	Journal of Veterinary Research formerly Bulletin of the Veterinary Institute in	Pathological alterations in respiratory system during co-infection with low pathogenic avian influenza virus (H9N2) and Escherichia coli in broiler chickens	1.039

	Pulawy		
	Microbial Drug Resistance	Bioactivity of Variant Molecular Weight Chitosan Against Drug-Resistant Bacteria Isolated from Human Wounds	2.344
	BioMed research international	Fungal Biomass Protein Production from <i>Trichoderma harzianum</i> Using Rice Polishing	2.583
	Brazilian Journal of Microbiology	Enhanced ethanol production at commercial scale from molasses using high gravity technology by mutant <i>S. cerevisiae</i>	2.428
	Buffalo Bulletin	First finding of patent urachus with omphalophlebitis and omphaloarteritis in Pakistani Neeli-Ravi buffalo calf and its successful surgical rectification: Case report.	0.119
	Journal of Photochemistry and Photobiology B: Biology	Mucilage characterization, biochemical and enzymatic activities of laser irradiated <i>Lagenaria siceraria</i> seedlings.	4.383
	Polish Journal of Environmental Studies	Assessment of lead (Pb) residues in lohi sheep and its impact on hematological and biochemical parameters	1.383
	Chemistry Central Journal	Mutagenicity, cytotoxic and antioxidant activities of <i>Ricinus communis</i> different parts	2.493
2018	Microbial Pathogenesis	Salmonella infection may alter the expression of toll like receptor 4 and immune related cells in chicken bursa of Fabricius	2.914
	Polish Journal of Environmental Studies	Enhancing Profitability of Ethanol Fermentation through Gamma Ray Mutagenesis of <i>Saccharomyces cerevisiae</i>	1.383
	Pakistan Journal of Zoology	Study of Antiviral Potential of Cholistani Plants against New Castle Disease Virus	0.547
	International Journal of Biological Macromolecules	Preparation, characterization and evaluation of glycerol plasticized chitosan/PVA blends for burn wounds	5.162
	Polish Journal of Environmental Studies	Enhancing Profitability of Ethanol Fermentation through Gamma Ray Mutagenesis of <i>Saccharomyces cerevisiae</i>	1.383
2019	International Journal of Biological Macromolecules	Wound healing potential of curcumin cross-linked chitosan/polyvinyl alcohol	5.162
	Pakistan Journal of Pharmaceutical Sciences	Some ethanobotanically important plants from Cholistan area for antiavian influenza virus (AIV) H9N2 screening	0.649
	Archivum Immunologiae et Therapiae Experimentalis	Visfatin Plays a Significant Role in Alleviating Lipopolysaccharide-Induced Apoptosis and Autophagy Through PI3K/AKT Signaling Pathway During Acute Lung Injury in Mice	3.2
2020	Tropical Biomedicine	Antiviral activities from extracts of Cholistani plants against common poultry viruses	0.509
	Molecules	Development of one pot strategy for hyper production and in vivo evaluation of lovastatin	3.267

2021	Journal of Materials Research and Technology	Enhanced mechanical, UV protection and antimicrobial properties of cotton fabric employing nanochitosan and polyurethane based finishing	6.267
	Brazilian Journal of Poultry Science	Effect of Essential Oil and Organic Acid on Performance, Gut Health, Bacterial Count and Serological Parameters in Broiler	1.019
2022	Arabian Journal of Chemistry	Chitosan-polyvinyl alcohol membranes with improved antibacterial properties contained Calotropis procera extract as a robust wound healing agent	6.212
	Journal of Tropical Medicine	Hospital Acquired Pathogenic Escherichia coli from Clinical and Hospital Water Samples of Quetta Balochistan	2.705
	Frontiers in Energy Research	Green electricity generation from biogas of cattle manure: An assessment of potential and feasibility in Pakistan	3.858

REVIEW ARTICLES

2016	Renewable and Sustainable Energy Reviews	Cogeneration through bagasse: a renewable strategy to meet the future energy needs	16.799
2017	International Journal of Biological Macromolecules	Chitosan: A Potential Biopolymer for Wound Management	8.025
2018	Renewable and Sustainable Energy Reviews	Electricity generation from biogas of poultry waste: An assessment of potential and feasibility in Pakistan	16.799
2019	Environmental Technology & Innovation	Ethanol production from molasses: Environmental and socioeconomic prospects in Pakistan: Feasibility and economic analysis	7.758
2020	Biomass Conversion and Biorefinery	Biotechnological applications of sugarcane bagasse and sugar beet molasses	4.05
Total Impact Factor			139.058

RESEARCH ARTICLES (NO IMPACT FACTOR)

2005	Rawal Medical Journal	Assessment of genotoxic effects of Doxycycline in mice by the comet assay
2014	Pakistan Journal Of Life and Social Sciences	Exploitation of meat industry by-products for biodiesel production: Pakistan's perspective
	Pakistan Journal Of Life and Social Sciences	Application of Different Chemical and Biochemical Treatments to Improve Nutritive Potential of Defatted Rice Polishing
2016	International Journal of Innovative Research and Review	Effect of municipal wastewater on the nutritional and proximate composition of selected vegetables grown at silanwali road Sargodha

	International Journal of Innovative Research and Review	Proximate composition of guava varieties collected from four tehsils of district Bhakkar
	International Journal of Basic and Applied Chemical Sciences	Effect of cadmium toxicity on the growth of sunflower (<i>Helianthus annuus</i> (L.))
	International Journal of Basic and Applied Chemical Sciences	Effect of nickel toxicity on the growth of <i>Raphanus sativus</i> (L.)
	Cibtech Journal of Bio-Protocols	Effect of photons radiations and nickel on the growth and germination of <i>Hordeum vulgare</i>
2018	Pakistan Journal Of Life and Social Sciences	Concurrent cerebral and extra-cerebral caprine coenurosis: a case report

BOOK CHAPTERS PUBLISHED

Year	Book chapter	Publisher's Name
2017	Clean and Sustainable Energy Technologies. In: Rasul M. (Eds) Clean Energy for Sustainable Development (pp. 73-89)	Springer
	An Overview of Biofuel. In: Arshad M. (eds) Perspectives on Water Usage for Biofuels Production. Springer, Cham	
	Climatic Changes Impact on Water Availability. In: Arshad M. (eds) Perspectives on Water Usage for Biofuels Production. Springer, Cham	
	Water Sustainability Issues in Biofuel Production. In: Arshad M. (eds) Perspectives on Water Usage for Biofuels Production. Springer, Cham	
2018	Impact of Biofuel's Production on Ground Water. In: Arshad M. (eds) Perspectives on Water Usage for Biofuels Production. Springer, Cham	Springer Nature
	Health Concerns Associated with Biofuel Production. In: Arshad M. (eds) Perspectives on Water Usage for Biofuels Production. Springer, Cham	
	Future Biofuel Production and Water Usage. In: Arshad M. (eds) Perspectives on Water Usage for Biofuels Production. Springer, Cham	
2019	Ecofuel future prospect and community impact. In Advances in Eco-Fuels for a Sustainable Environment 2019 Jan 1 (pp. 459-479). Woodhead Publishing.	Woodhead Publishing Elsevier
	Sustainable Ethanol Production: An Overview. In: Arshad M. (eds) Sustainable ethanol and Climate Change 2020 .	
2020	Lignocellulosic Biomass and Microbial Genome Engineering for Sustainable Ethanol Production: An Overview. In: Arshad M. (eds) Sustainable ethanol and Climate Change 2020	

- Impact of CO₂ Discharge from Distilleries on Climate Changes: Key Facts. In: Arshad M. (eds) Sustainable ethanol and Climate Change 2020 . Springer International Publishing
- Policy Implications for Sustainable Ethanol Production. In: Arshad M. (eds) Sustainable ethanol and Climate Change 2020 Springer International Publishing
- Environmental Impacts of Ethanol Production System. In: Arshad M. (eds) Sustainable ethanol and Climate Change 2020 Springer Nature
- 2021 Carotenoids and Cardiovascular Diseases Springer Nature Academic Press (Elsevier)
- Biogas: A promising clean energy technology

BOOKS EDITED

- **Muhammad Arshad.** 2017. Perspective of water usage for biofuel production. Published with Springer Nature.
<http://www.springer.com/in/book/9783319664071>
- **Muhammad Arshad.** 2020. Sustainable Ethanol and Climate Change. Published with Springer International Publishing.
<https://www.springer.com/gp/book/9783030592790>

ABSTRACTS PUBLISHED**ABSTRACT PUBLISHED IN NATIONAL/INTERNATIONAL CONFERENCES/SEMINARS**

Date/Year	Title of Abstract	Conference
February 18-20, 2019	Expression pattern of toll like receptors in reproductive system of dairy buffalo: An update	International buffalo congress-IBC-2019 Lahore Pakistan
January 14-16, 2019	Effect of Low power Continuous wave laser seed radiation effect on <i>Citullus lanatus</i> germination seedling growth and biochemical attributes	4 th International Conference Food And Nutrition Security in Changing Climate BZU Multan, Pakistan
November 27 to 28 2018	Cogeneration policy to contest climate changes and the future of sustainable energy	3rd International Conference on Climate Change, Indonesia
November 13-15, 2017	Mutagenicity, cytotoxic and antioxidant activities of <i>Ricinus communis</i> different parts	One Health International Conference (OHC 2017) Jhang,

		Pakistan
September 12-13, 2017	Perspectives of water consumption for sustainable bioethanol production in changing climate scenario	USPCASE International Conference on Sustainable Energy, Sareena Hotel, Islamabad Pakistan
20-23 February 2017	Bioenergy production potential from Animal waste in Pakistan	Biowaste Derived Carbons for Waste-to-Bioenergy Conversion and Water Purification, Center of Excellence in Analytical Chemistry, University of Sindh Jamshoro, Pakistan
January 14-16, 2016	Green Electricity Generation Potential from Poultry Industry Wastes; Opportunities and Constraints	1 st Chemical Engineering Conference and Exhibition at Mehran University of Engineering and Technology Jamshoro, Pakistan
11-12 March 2014	Exploitation of meat industry by-products for biodiesel production: Pakistan's perspective <i>Moringa oleifera</i> – A potential feed supplement for poultry industry	International Livestock Dairy & Poultry Congress. Lahore Pakistan
5-10 March 2006	Optimization of byproducts formations during ethanol fermentation in a Pakistani Distillery.	Bioenergy Conferece-1. Tomar Purtagal

AS ORGANIZER OF THE SEMINAR/WORKSHOPS

Date	Title of the Seminar/Workshop	Funding/Sponsorship
April 06, 2021	SCIENTIC WRITING : A GUIDE	Punjab Higher Education Commission

RESOURCE PERSON IN TRAINING WORKSHOPS

Date	Title of the Workshop	Organizer
August 11-12, 2009	Policies and Strategies for Successful Implementation of Employment Generating Programmes in Renewable Energies, Biotechnology, Agriculture, Environment and ICTs	Commission on Science and Technology for Sustainable Development in the South (COMSATS), Islamabad Pakistan
June 08-10,	Faculty Professional Training Programme	Higher Education Commission and College of Veterinary and Animal

2015

Sciences, Jhang, Pakistan.

PARTICIPATION IN TRAINING WORKSHOPS

January 28-29, 2020	Sustainable cities: Issues and challenges of Rapid Urbanization	COMSTECH and the OIC General Secretariat Islamabad, Pakistan
September 09 to December 16, 2020	PBSA-HSP-Birisk Management Virtual Training for COVID-19	Pakistan Biosafety Association
December 21 -25, 2020	Bio risk Management training workshop (online)	Health Security Professionals
August 29, 2018	Bioassays for Exploration of Bioactives	Department of Biochemistry, University of Agriculture Faisalabad
February 15 th , 2018	Enrichment in Scientific Writing Skills	College of Veterinary and Animal Sciences Jhang
February 7 th to 8 th , 2018	Basic First Aid Training	Red Crescent Society on
February 1 st , 2018	2 nd National hands on training Workshop on serum indirect elisa (Multi-species) for the diagnosis of brucellosis	College of Veterinary and Animal Sciences Jhang
January 05-07, 2018	1st International Conference "Future MED-2018"	Faculty of Medical and Health Sciences, at University of Sargodha
January 22-23, 2018	2 nd International Conference on Chemical Engineering,	Department of Chemical Engineering, Mehran University of Engineering and Technology Jamshoro Pakistan
February 21-22, 2017.	International Livestock Nutrition Conference	University of Veterinary and Animal Sciences Lahore, Pakistan
August 29, 2016	"Organic Food and Health" Avenues of Innovation and Entrepreneurship	University of Management and Technology Lahore, Pakistan
April 12- 13, 2016	Algal Collection for Biofuel Production	Department of Botany, GC University Lahore, Pakistan

March 14-16, 2016	14 th International Conference on Statistical Conference at JSMU	Jinnah Sindh Medical University Karachi
February 12-13, 2016	Workshop for Applied Physiology and Pharmacological Techniques for Young Scientists	Institute of Pharmacy, Physiology and Pharmacology, Faculty of Veterinary Sciences, University of Agriculture, Faisalabad, Pakistan
April 11, 2013.	Electrophysiology	Department of Physiology, University of Veterinary and Animal Sciences Lahore
May 04-06, 2015	Diagnosis of Viral Diseases	Nuclear Institute for Agriculture and Biology (NIAB) Faisalabad Pakistan
April 14-15, 2015	International Livestock, Dairy and Poultry (ILDPC) Congress at Aiwan-e-Iqbal Complex, Lahore, Pakistan	Pakistan Veterinary Medical Council
May 13-14, 2009	International Workshop on Membrane Technology for Waste Water Reclamation and Reuse	Institute of Environmental Science & Engineering, NUST Islamabad
May 06-10, 2008	International Workshop on Techniques in Molecular Biology Research	Department of Biochemistry, PAMS Arid Agriculture University Muree road Rawalpindi
April 09-14, 2007	Civil Defense & Fire Fighting	Shakarganj Mills Ltd Toba road Jhang.
July 21 st , 2007	Attitude, Communication and Teamwork	Human Resources Department, Shakarganj Mills Ltd Jhang
Feb.03-07, 2003	Molecular Diagnosis of Rinderpest & other Morbilliviruses	Environmental Biotechnology Division, National Institute for Biotechnology and Genetic Engineering, Jhang road Faisalabad

RESEARCH GRANTS COMPELTED / ON GOING

Sr. No.	Title	Funding Agency	Amount (Million PKR)	Status
1	Sustainable Bioenergy from slaughterhouse waste	Higher Education Commission of Pakistan	2.832	Ongoing
2	Histo-Morphological Alterations In Lymphoid Organs of Quail Chicks Under Stress	Higher Education Commission of Pakistan	0.500	completed
3	“Mutagenicity and Cellular Toxicological Exploration of Medicinal Plants”	Higher Education Commission of Pakistan	0.4278	Completed
4	Preparation, characterization and in-vivo evaluation of glycerol plasticized Chitosan/PVA blends for burn wounds	Higher Education Commission of Pakistan	0.487	Completed

Reviewer

1. Reviewer of the Research Projects from higher education Commission, Pakistan.

ISI Indexed Scientific Journals

Sr. No.	Name of the Journal	Completed Assignment during 2015-2018
1	Renewable and Sustainable Energy reviews	60
2	Bio-resource Technology	16
3	Microbial Pathogenesis	02
4	Journal of Industrial Microbiology and Biotechnology	14
5	Separation and Purification Reviews	02
6	The Journal of Applied Microbiology and Biotechnology	02
7	RSC Advances	03
8	World Journal of Microbiology and Biotechnology	03

BOOK PROPOSALS

1. Reviewed book proposals for Elsevier
2. Reviewed book proposals for Bentham Science

REVIEWER/MEMBER SCIENTIFIC COMMITTEE

1. Member Scientific Committee for International Conference on Chemical Engineering and Exhibition, January 14-16, 2016 at Mehran University of Engineering and Technology, Jamshoro Sindh Pakistan.
2. Member Scientific Committee of 1st Annual International Conference on Veterinary and Animal Sciences at Colombo Sri Lanka, Sri Lanka Veterinary Council December 15-16, 2015

REFERENCES: Will be furnished on Demand