Dr. Qaiser Mahmood Khan

Deputy Chief Scientist

**Contact Details:**

# Head, Soil & Environmental Biotechnology Division

# National Institute for Biotechnology and Genetic Engineering (NIBGE)

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# Profile Summary:

Dr.Qaiser has DVM degree and distinction in MS Pharmacology. He served as a lecturer (1982-1987), at University of Agriculture, Faisalabad. He won a merit scholarship in 1987 & did a PhD in Biotechnology from Imperial College, London. He joined NIBGE in 1993 and progressed to lead the Environmental Biotechnology Division as Head/Deputy Chief Scientist. He is also leading Environmental Toxicology & Molecular Diagnostic group. He also officiates as director, in lieu of director NIBGE. He did HEC post-doc in 2003 & worked as visiting scientist in UK & France.

He designed & fabricated pilot scale effluent treatment, & submitted patent application. He also took part in the cleanup of oil contaminated soil (1.6 Km area) using bioremediation. His team developed phytotechnology for management of industrial effluent and transferred this technology to one of the leading industries. As Head of Division he is also supervising activities related to production of a biological fertilizer “BioPower” that is very well accepted by the farmers.

He has established Environmental Toxicology Lab for Environmental Monitoring & Risk Assessment; this was the first lab of its kind in the country. Dr. Khan’s contributed to the National Veterinary sector by establishing first PCR-based diagnostic facilities for viral diseases of livestock, these facilities were used for national Rinderpest (RP) eradication program.

Professionally he contributed in technology transfer, teaching & publications & bio-safety implementation; he has organized >12 National training courses/workshops & several specialized trainings, supervised over 50 postgraduate students. He is the member of boards of faculty/studies of 5 universities, he developed 5 postgraduate courses. He is faculty member of QAU & PIEAS. He has edited first drafts of national documents; “National Bio-safety guidelines for release of GMOs” & “Code of conduct for life scientists”. As Biosafety Officer of NIBGE, he has evaluated 44 projects. He won several national & international research projects. He was awarded with Best Scientist Gold Medal (PAEC) in 2010. Several times he received the Research Productivity Award from PCST. His strong scientific background in Environmental Biotechnology, Veterinary diagnostics & Genetic Toxicology combined with diverse research experience has given him a unique perspective

**Education:**

|  |  |  |
| --- | --- | --- |
| 2004 | Post-Doc(Molecular Biology) | University College London, UK |
| 1992 | PhD Biotechnology(mol. Biology) | Imperial College of Science, Technology & Medicine, London, UK.  |
| 1992 | DIC (Biotechnology) | Imperial College of Science, Technology & Medicine, London, UK. |
| 1982 | MSc (Hons) (Pharmacology) | University of Agriculture, Faisalabad, Pakistan. (**Silver Medal** for first position)  |
| 1980 | DVM | University of Agriculture, Faisalabad, Pakistan.  |
| 1986 | DHMS | Punjab Homeopathic Medical College, Faisalabad (**Gold medal** for first position) |

**Professional career:**

|  |  |
| --- | --- |
| 2011-date | **Director, NIBGE** (Officiate during leave/tour of the Director NIBGE) |
| 2012-date | Deputy Chief Scientist |
| 2007-date | **Head,** Soil & Environmental Biotechnology Division (SEBD) |
| 2000-date | **Leader,** Environmental Toxicology & Molecular Diagnosis group |
| 2001-2012 | Principal Scientist. SEBD, NIBGE |
| 1993-2001 | Senior Scientist, EBD, NIBGE |
| 1992-1993 | Postdoctoral fellowship: EBD, NIBGE |
| 1987-1992 | Doctoral fellow, Imperial College, London |
| 1982-1987 | Lecturer: University of Agriculture, Faisalabad |
|  |  |
|  |  |

**Research Experience (1982-to date):**

**Deputy Chief Scientist 2012-date**

**Head of Division 2007-date**

As Head, Environmental Biotechnology Division supervised & actively took part in up-gradation of R&D activities of the Division i.e., submission of new projects, developing new facilities, improving environmental testing techniques, planning for R&D, training & teaching. *Officiate as Director NIBGE during leave/tour of Director NIBGE.* As Group Leader carried research work in the following areas and good results were achieved also. Moreover, in these areas as P.I. or Co P.I., three research projects from International funding agencies & three from National funding agencies were awarded during 2012-13.

-          Environmental Toxicology & Risk Assessment,

-          Environmental Remediation &

-          Molecular Diagnosis & Epidemiology of animal diseases

**Main R&D achievements (2007-date):**

* In 2011 FAO-PAK awarded me with a certificate to recognize my contribution in Rinderpest eradication from the Pakistan/world.
* Carrying out >4000 /year environmental testing & toxicological testing that generated revenue>Rs. 2.6 Million/year.
* Performing duties & contributing as a member or a convener of 10 institutional committees.
* Prepared a comprehensive document (>300 pages) of SOPs of Environmental testing & submitted to EPA.
* Prepared documents for ISO17025 lab accreditation, ISO 9001:2008 certification.
* Prepared a practical manual on “Molecular diagnosis of animal pathogens”
* Delivered a press conference on launching of ISAAA at Karachi, 2011
* Setting up in vitro mammalian cell culture facility for multiple use; toxicity testing, disease diagnosis & vaccine production
* Carried toxicological risk assessment of iron, zinc & gold nanoparticles
* Established microbiological facilities for screening veterinary antibiotic residues in food, feed & environmental samples
* Molecular epidemiology of FMD &PPR to understand the spread and follow up these viruses
* Optimized Loop-Mediated Isothermal PCR (LAMP) a sensitive & rapid method for diagnosis PPR virus
* Established filter paper based sample collection method for direct detection of PPRV using RT- PCR.
* Technology transfer & provision of facilities; molecular diagnostics and toxicity testing to government & private sector. Organized> 6 national workshops/courses, & several lab trainings
* Edited first draft of “Code of Conduct for Life Scientists”
* Supervision of “BioPower” production and NIBGE Bio-Resource Center (NBRC).

**Principal Scientist (2001-2011)**

**Senior Scientist (1993-2011);**

Name of Institute: Environmental Biotechnology Division, NIBGE

Main R&D Achievements during above period

**1-Establishment of Molecular detection of animal pathogens, (**was the first PCR-lab in the veterinary sector in Pakistan)

* **"A success story" Pakistan is now rinderpest free country**
* Rinderpest (RP) is the most fatal viral disease of cattle, participated in the national RP eradication program as a P.I of a multi-partied IAEA project.
* Developed & applied molecular diagnostic facilities for RP detection
* In 2003 the RP eradication program resulted in Pakistan being declared as rinderpest free. This status had a positive impact on livestock related export.
* Awarded with a certificate for my contribution in RP eradication by FAO-PAK
* Also developed molecular diagnostic tests for other important diseases of animals, i.e., **FMD, PPR,** brucellosis & successfully tested for field samples.
* Diagnostic technology transferred to the national veterinary sector
* Edited practical lab-manuals for detection of animal viruses (RNA).

**2-Setting up of the Environmental Toxicology Lab (only genetic toxicology lab in the country)**

* + A battery of tests developed to detect genetic toxicity and general toxicity.
	+ Comet assay, established to detect DNA damage at the cellular level.
	+ Carried genotoxicity and toxicological evaluation of various samples; environmental pollutant, pesticides, dyes, industrial chemical. Effluents, pharmaceuticals & other products.
	+ Carried several studies related to risk assessment and toxicity testing
	+ Trained scientists from various organizations for toxicity testing
	+ Toxicological evaluations & risk assessment of GM crops are in progress.
	+ Toxicity testing facilities are also being provided on a commercial level
	+ Also established ISO certified EPD registered environmental monitoring Lab

**3- Development of Pilot scale bio-process for heavy metal removal**

* Under Pak-Kazakh research project (as a P.I) developed a biosorption based process for removal of toxic metals from industrial effluent.
* Successful testing of pilot plant designed and fabricated under this project.
* Higher metal removal efficiencies achieved than reported in the literature.
* The process was tested for tannery wastewater treatment as well.
* A comprehensive detailed report was produced.
* A study on phytoremediation of Cr contaminated soil in progress

**4-Designing & fabrication of pilot plant for textile effluent treatment**

-    As an active member of the research team designed /fabricated textile effluent treatment pilot plant.

-  Crescent Textile sponsored this prototype pilot scale (500 L) model for the biotechnological treatment of textile effluent.

-    Recommendations were given to the industry for scale up of treatment plant.

-     This pilot plant is being used for other studies related to effluent treatment.

-     This model is a one of the signpost of our division.

**5- Setting electrochemical based treatment of industrial effluents**

-    Developed electrochemical treatment, a rapid and cheaper technology that has great potential for effluent treatment.

-     The lab studies demonstrated very promising results for the treatment of heavy metal effluent, textile effluent and paper& pulp effluent etc.

**6- Isolation & characterization of microbes for pollution control (Bioremediation)**

* Isolated & characterized biodegrading microbes for different agents, i.e., methane, phenol, dyes & pesticide.
* Carried molecular characterization of oil degrading bacteria, cloned biosurfactant genes, constructed biosurfactant hyper production strains
* Studied heavy metal resistance in microbes, cloned metal resistant genes
* Used these microbes for various bioremediation studies.

**7- Molecular analysis of DNA damage and repair in human cells**

* Did the molecular analysis of DNA damage and repair in DNA repair defective cells derived from a Pakistani girl with the inoperable Angiosarcoma - collaboration of  department of Oncology, UCL, London, .
* This work gave insight to identify the mechanism of unique clinical and radio sensitivity of these cells and importance of DNA repair pathways for prevention of cancer**.**
* Carried risk assessment of pesticide exposure in various groups of human population using molecular & biochemical biomarkers

**As Post doc 2003-2004 (1 year)**

Name of Institution: Dept of Oncology, Royal Free School of Medicine, University College London, UK

Name of Professor: Prof. John Hartley (Professor of cancer studies)

 Carried out molecular analysis of DNA damage & repair in human cells following exposure to genetically hazardous agents.

**As Visiting scientist 2001-2002 (3 months)**

Name of Institute: Institute for Animal Health, Surrey, UK

Name of Professor: Prof. Dr Tom Barrett

Worked on RT-PCR based diagnostics of Morbillivirus (RNA viruses).

 Confirmed presence of CDV, a Morbillivirus in samples from dead Caspian Seals.

**As Visiting scientist: 1999- 2000 (3 months)**

Name of Institute: Institute of Cancer Research, Surrey, UK.

Name of Professor: Prof. Dr. David Phillips.

 Worked on genotoxicity testing methods; Comet assay and 32P post labeling technique.

 These tests were used to study genotoxic effects of urban air particulates of Faisalabad city.

**As Visiting scientist: 1995 (6 months)**

Name of Institute: Commission Energy Atomic labs, Grenoble, France

Supervisor: Dr. J.C. Roux

 Detoxification of metal containing effluent using fungal waste biomass.

 Isolated metal resistant microbial strains.

**During Postdoctoral fellowship: 1992-1993 (6 months)**

Name of Institute: NIBGE, Faisalabad,

Name of Professor: Prof. Dr. K.A. Malik (Director NIBGE) Now National Professor

 Initiated projects on bacterial molecular genetics and setting up of microbial-based mutagenicity testing.

 Removal and toxicity testing of textile dyes from industrial effluents.

**During Doctoral fellowship: 1987-92**

Name of Institute: Centre for Biotechnology, Dept of Biochemistry, Imperial College of Sci., Tech & Medicine, London, UK

Name of Professor: Prof. Dr. David J. Leak

Completed doctoral degree and diploma of the Imperial College

Developed molecular genetic tools to analyze the regulation in methane utilizing bacteria (regulation of monooxygenase enzyme).

**As Lecturer & M. Sc (Hon) student: (1982-1987)**

Name of Institute: Department of Pharmacology, Faculty of Veterinary Science,

 UAF

Name of Professor: Prof. Dr. Muhammad Shoaib Akhtar

 Prof. Dr. Muhammad Nawaz (ex V.C. UVAS)

 Worked on antidiabetic, antiparasitic activities of medicinal

 indigenous plants

 Pharmacokinetics of antibiotics

**Teaching Experience: (>25 years)**

**Regular Faculty member (PIEAS-NIBGE program) 2008-date**

NIBGE is affiliated with the Pakistan Institute for Engineering & Applied Sciences since 2008 for the award of PhD & M. Phil degrees in the discipline of Biotechnology.

* As regular faculty member, teaching & supervising M. Phil & PhD students
* Supervising overall  education activities as a Convener PIEAS-NIBGE Coordination Committee,
* **As Course coordinator developed postgraduate courses** -offering these routinely

-             Environmental Biotechnology (4 credits) - M. Phil Course

-             Application in Biotechnology (4 credits) –M. Phil Course

-             Environmental Toxicology (3 credits) - PhD course

-             Environmental Health (3 credits) - PhD course

-             Principles of Biosafety (2 credits) - PhD course

-             Molecular Virology (3 credits) - PhD course

* As faculty member also delivers special lectures for other post-graduate courses
* As a supervisor, supervised both M. Phil & PhD students

**Adjunct Professor (Quaid-I- Azam University - NIBGE degree program) 1994-date**

NIBGE is affiliated with Quaid-I-Azam University since 1994 as School of Biotechnology to award M. Phil & (later PhD as well) in Biotechnology.

-          Was one of the founding members of the team - imitated M. Phil Biotechnology

-          Fully participated in designing & development of curricula for M. Phil Biotech

-          Provided extensive input to develop course work for M. Phil & PhD (Biotech)

-          As course coordinator developed to offer several M. Phil & PhD courses

-          Teaching & supervision (research) of both M. Phil & PhD students

**Lecturer (Full time) at Faculty of Veterinary Science (U.A.F) May 1982-Sep 1987**

-          Teaching Physiology & Pharmacology courses to DVM, B. Sc (AH) & Postgraduate students.

-          Carried research on pharmacological activities of medicinal plants & pharmacokinetics of antibiotics

**Academic Affiliate** Royal Free and University College Medical School, UK **2003-04**

-          Helped M. Phil & internees for their research projects

**PhD Fellow at Imperial College London, UK (1987-92)**

-          Assisted my PhD supervisor in arranging practical for undergraduate students

**Member, Board of Studies/ Faculty of following Universities:**

-          Member, Academic Council, UVAS, Lahore

-          PIEAS-NIBGE, Member Board of Studies (Biotechnology)

-          Quaid-I-Azam-NIBGE, Member Board of Studies (Biotechnology)

-          UAF, Member Board of Faculty (Vet. Sciences)

-          UAF, Member Board of Faculty (Env. Sciences)

-          UAF, Member, Board of Studies (Microbiology Dept.)

-          UAF, Member, Board of Studies (Pharmacology Dept.)

-          GCUF, Member, Board of Studies (Environmental Sciences Dept.)

-          UVAS, Expert, Advance Studies & Research Board

-          University of Faisalabad, Board of Advance Studies & Research

-          Also member of HEC Curriculum Revision Committee.

**Membership of other important Committees:**

1. **Secretary, Governing Body, NIBGE**:
2. **Convener, NIBGE-PIEAS Coordination Committee**
3. **Participating as Convener or members of different of Selection Committees**: for technical manpower selection of different projects (NIBGE)
4. **Convener, Transport Committee** of NIBGE which supervise fleet of official automobiles for their routine functioning (Pick n Prop to employees, touring of scientists, repair & maintenance etc)
5. **Convener Departmental Promotion Committee**: (Supervise annual promotion of technical & non-technical staff of NIBGE)
6. **Convener Fund Utilization Committee, NIBGE,** Responsible forrecommendation of funds utilization from different projects for development of institutional infrastructure
7. **Convener Purchase Committee, NIBGE**: Have made purchases of special equipments for the institute
8. **Convener Disaster Management Committee**, NIBGE
9. **Member Medical Ethics Committee** NIBGE
10. **Member National Biology Talent Committee, NIBGE**
11. **Biosafety Officer Institutional Biosafety Committee, NIBGE**
12. **Member Postgraduate Management Committee** (committee to look after academic matters at the Department of Biotechnology, PIEAS-NIBGE :
13. **Member Graduate Record Examination (GRE) Committee, NIBGE**: committee to hold GRE (Biotechnology) on a routine basis
14. Member, Interview Board for postgraduate Admissions at NIBGE

**Editor / Referee / Reviewer:**

* **Referee**, Pakistan Veterinary Journal
* **Technical Editor**, Pakistan Journal of Biological Sciences
* **Referee,** International Research Journal of Agricultural Science

**Membership of Societies:**

* Vice President, Biotechnology Society of Pakistan
* Member Pakistan Pharmaceutical Society
* Member Pakistan Veterinary Medical Society
* Member Pakistan Biotechnology Society
* Member UK Society of Microbiology
* Member USA American Microbiology Society
* Member Curriculum revision committee for fresh water biology and Fisheries
* Member National Task Force on Biosafety, Islamabad
* Member, National Core Group in Life Sciences
* Member GM crops monitoring team (under Technical Advisory Committee, NBC)

-          Member, Selection boards for Lecturers-to-Professors, GCU Faisalabad

-          Subject expert for evaluation of applications for the posts of Lecturers-Professors, for

-          University of Agriculture, Faisalabad

-          UVAS, Lahore

-          GCU, Faisalabad

-          PMAS Arid Agriculture University, Rawalpindi.

-          HEC, Approved Supervisor since 2004

-          Paper setter for different universities e.g., Baluchistan University &Gomal University

-          Postgraduate thesis evaluator of various universities

**Awards, Scholarships and Merits:**

**Gold Medal**:Awarded overall & merit based PAEC Performance, PAEC on 28 May, 2010

**Tamga-e-Baqa:**Awarded PAEC Performance, PAEC in 1998

**Gold medal**:First position in DHMS (Homeopathic diploma) examination in 1986

**Silver Medal**: Securing first position in M.Sc (Hons) University of Agriculture. Faisalabad in1982

**Merit Certificate**:First Position at Faculty of Veterinary Science in M.Sc. Hons (Pharmacology) University of Agriculture. Faisalabad in 1980

**Research Productivity Award :**Research Productivity Award (RPA) by Pakistan Council for Science & Technology (PCST)

**Best Paper Award:** Shared HEC Best paper award (2011)

**Merit scholarship** through graduate & post graduate studies.

**Award of merit scholarship** for PhD from Ministry of Science & Technology, Pakistan (1987-92)

**HEC Merit Scholarship** for post doctoral studies (2003-4)

**Completed Funded Projects:**

1.      CRP-IAEA Project# 14567 on “Establishment of PCR based methods for early and sensitive diagnosis of Peste des Petite Ruminants PPR”. Duration 2007 to 2012 as **a P.I**

**2.** TC-IAEA Project# PAK/5/041 on “Setting up immunoassay and molecular based methods to monitor and survey Rinderpest disease”. Duration 2001 To 2003 **as a P.I**

3.      Pak-Kazakh Project# 9481-1 on “Biosorption based process for removal of heavy metals from industrial wastewaters”. Duration 1998 to 2003**as P.I**

4.      ALP-PARC Project# 3-33/2004 on Application of Molecular Techniques for Differential Diagnosis of Rinderpest and Related Diseases. Duration 2004 To 2007 **as a P.I**

5.      CDGF Drinking water analysis of Faisalabad district 2008 To 2009 **as a P.I**

6.      Toxicological evaluation of pesticide formulations funded by Ali Akbar Pesticides. 2007 To 2007 **as a P.I**

7.      HEC on “Characterization and Immunoprophylaxis of Peste Des Petitis Ruminants Virus in Small Ruminants” Duration 2006 To 2009 **as Co. P.I**

8.      Crescent Textiles Pilot scale development of process for textile effluent treatment. Duration 992 To 1993 **as Co. P.I**

9.      Interloop Textile Phytoremedation for treatment of textile effluent. Duration 2007 To 2009 **as Co. P.I**

10.  Paper & Pulp Industry feasibility studies for treatment of effluent from paper & pulp industry. Duration 2006 To 2006 **as Co. P.I**

11.  PSF Biotechnological solution of tannery wastewater. 1999 To 2002 **as Co. P.I**

**Ongoing projects:**

1. Regional IAEA Project# RAS 05/062 on “Building Technological Capacity for the Food Traceability and Food Safety Control Systems through the use of Nuclear Analytical Techniques”. Duration 2012-2016 **as a P.I**
2. A joint TC-IAEA Project (NIAB-NIBGE) on “Strengthening Capabilities to Monitor & Control Veterinary Drug Residues in Foodstuffs”. Duration 2012-2014. **as Co P.I**
3. HEC Project on “Assessing soil thresholds for arsenic (As) induced toxicity & strategies to minimize the transfer of use in soil-plant-human system”. Duration 36 Months **as Co-PI**
4. HEC project on “To explore plant-microbe interactions for the remediation of hydrocarbon contaminated soil”. Duration 2012-2015**as Co. P.I**
5. IFS project on “To explore plant-endophyte partnerships in constructed wetland for the treatment for textile wastewater”. Duration 2012-2015 **as Co. P.I**
6. HEC Project on “Genotypic characterization and phylogenetic analysis of Newcastle Disease Virus (NDV) isolated from outbreaks in commercial poultry farms in Pakistan”. Duration (January 2013-September 2013)**as Co. P.I**

**Workshop/Conferences/Training Course/ Seminar as Co. Organizer and Organizer:**

1. Member of organizing committee in a 4th National Training Course on “Electron & Confocal Micoscopy” 04-14 December 2012 at SEBD, NIBGE Faisalabad
2. 6th National Training Course on “Molecular Diagnosis of Animal Diseases” 15-19 October 2012, at Soil and Environmental Biotechnology Division NIBGE Faisalabad.
3. Two day workshop on “Promising Techniques for Industrial Effluent Treatment” in 5-6 June, 2012 at NIBGE, Faisalabad.
4. 5th National training course on “ Molecular Diagnosis of Animal pathogens” on October 17-21, 2011
5. One seminar on “ Trends in Environmental Biotechnology” at NIBGE on 18th April 2011
6. One week Lab training course on “ Chemical & Microbial analysis of Drinking Water & Wastewater ” at EBD, NIBGE, on March 14-18, 2011
7. 4th National Training Course On : Molecular diagnosis of animal pathogens & advanced biotechnological techniques at NIBGE Fsd. ” (2-13 Feb, 2009)
8. A 3rd National training course on “Molecular Detection of RNA viruses” Specialized lab training for scientists from Veterinary Research Institute at NIBGE on (24- 26 April, 2007)
9. Training course Characterization and Management of Emerging Viral Diseases in Developing World at NIBGE, Faisalabad on (20 -22 November 2006)
10. Lab Training Techniques in Biotechnology IOB, UOB, NIBGE, FaisalabadALP (24 -29 April, 2006)
11. 2nd National Training on A specialized lab training on comet assay for teachers of University of Agriculture, Faisalabad UAF-NIBGE Faisalabad 18 - 19 August 2005
12. Hand on lab Training Lab training on “RT-PCR” in for scientists from UVAS Lahore was conducted NIBGE, Faisalabad March 2005 March 2005
13. Training course Two week training course on molecular techniques to researcher NIBGE Faisalabad 2005
14. Training Course Training course on “RT-PCR” NIBGE Faisalabad 19 October, 2004 22 October, 2004 Training course
15. 1st National training course on the molecular diagnosis of Rinderpest & other Morbilliviruses) NIBGE IAEA3 Feb, 2003 7 Feb, 2003

**Overseas Visits:**

1. **Kenya**

To attend the Global Peste Des Petits Ruminants (PPR) Research Alliance (GPRA) meeting in Nairobi, Kenya from 29-30 April, 2013 under Global PPR Research Alliance (GPRA), International Livestock Research Institute (ILRI)

**2.      Austria**

Participated in 3rd Technical meeting on “Diagnosis and surveillance of Peste des Petits Ruminants (PPR)” being held in Vienna Austria, from November 19-22, 2012 under FAO/ IAEA CRP Project.

**3.      China**

Participated in IAEA/ RCA Project Planning Coordination Meeting from 7-10 August 2012 at Fuzhou, China on Building Technological Capacity for food Traceability and Food Safety Control System through the use of Nuclear Analytical Techniques.

**4.      Bangladesh**

Participation in Bangladesh Conference “Environmental Risks Assessment in GE Plants” at Dhaka Bangladesh 15-18 April 2012.

5.      **Turkey**

Participation in the Pak-US meeting on Bio-capacity building, Istanbul, Turkey 25-10-2010 to 29-10-2010

6.      **Burkina Faso**

Participation in FAO/IAEA Joint division’s research co-ordination meeting (RCM) on the early and sensitive diagnosis and control of peste des petitsruminats PPR in Brakino Faso , 19-07-2010 to 22-07-2010

7.      **Egypt**

Participation in the US-Pakistan Bio-engagement workshop, Cairo, Egypt. 03-05-2010 to 06-05-2010

8.      **United State America**

Participation in Controlling Laboratory Bio-risk Course Sandia National Laboratories, Albuquerque, NM USA 28-09-2009 to 03-10-2009

9.      **Italy**

Presentation at conference related to role of Climate Change and infectious diseases 09-05-2008 to 17-05-2008

10.  **Austria**

Participation in Research Coordination Meeting at Vienna 30-03-2008 to 06-04-2008

11.  **United Kingdom**

Post Doc in at UCL, London, UK 15-07-2003 to 13-06-2004

1. **United Kingdom**

Undertook a Fellowship at Institute for Animal Health, Surrey through the an TC-IAEA project from 14-01-2002 to 13-04-2002

1. **United Kingdom**

Visiting Fellowship at Institute Cancer Research, UK, 27-11-1999 to 27-01-2000

1. **France**

Participated in Pak-France Scientific Collaborative project at CEA, Grenoble, 06-06-1995 to 04-12-1995

1. **Belgium**

To present a paper at a conference on Biotechnology 1995 (1 week)

1. **United Kingdom:** Presentation at Biotechnology Conference (1994)
2. **United Kingdom:** Doctoral studies at Imperial College London September 1987-August 1992
3. **Germany** Participation in C-1 International Conference 1989 (1 week)

**List of students (supervised/being supervised) as supervisor/co-supervisor:**

**MPhil/MSc (Hons)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No.** | **Name** | **Year** | **Subject** | **Thesis title** |
|  | Haider Ali Khan | 1995 | Microbiology  | Polypeptide mapping of Newcastle disease virus |
|  | Izhar-ul-Haq  | 1996 | Microbiology | Molecular cauterization of hydropericardium syndrome virus  |
|  | Aftab Ahmad  | 1996 | Microbiology | Polypeptide mapping of infectious bursal disease virus |
|  | Javed Ahmad Bhalli  | 1996 | Biotechnology | Mutagenicity of tannery effluent by Ames test and modified Microtiter plate assay |
|  | M. Waseem | 1996 | Biotechnology | Localization of Cr resistance in bacteria from tannery effluents and chromium removal |
|  | Hussnain Janjua | 1999 | Biotechnology | Biodegradation of phenolic wastes by various bacterial isolates |
|  | Manzoor Ahmad  | 2000 | Biochemistry  | Hypoglycemic evaluation of leaves of *Alostoniascharlorious* |
|  | Huma Saeed  | 2001 | Food & Nutrition | Effect of formaldehyde (as preservative) on milk quality |
|  | Muhammad Sajjad | 2001  | Pathology | Genotoxicity of Benomyl (anti-fungal) in Japanese quails |
|  | Aziz-ud- Din  | 2001 | Biotechnology | Uptake and biosorption of chromium by *Pistiastratiotes* plant |
|  | Maria Noor | 2001 | Botany | Phytoremediation of chromium by *Azollapinnata* |
|  | M. Ikram Shahid | 2001 | Botany | Anti-mutagenicity/antioxidant activity of common plants |
|  | M. Sabir Farooq | 2005 | Biotechnology | RT-PCR based diagnostics of PPR viruses |
|  | M. Haseeb Malik | 2005 | Biotechnology | RT-PCR based diagnostics of FMD viruses |
|  | M. Atif Zahoor | 2003 |  | Restriction Analysis of Indigenous Infectious Bursal Disease Virus in Pakistan |
|  | Shazia Perveen | 2007 | Biotechnology | RT-PCR based amplification method to detect avian influenza virus |
|  | M. Anwar-ul-HaqResearch completed | 2007 | Biotechnology | Electrochemical treatment of textile effluent at pilot scale |
|  | Muhammad Farooq | 2008 | Biotechnology | Molecular Epidemiology of PPR |
|  | Ali Saeed | 2008 | Biotechnology | Multiplex PCR for FMDV |
|  | Muhammad Asif | 2008 | Biotechnology | Molecular detection of Brucellosis in occupationally exposed workers |
|  | Muhammad Badar | 2008 | Biotechnology | Cytogenetic & hematological studies of oral snuff (Naswar) addicted individuals in Pakistan  |
|  | Samra Irem | 2011 | Biotechnology  | Removal of reactive dyes and arsenic from synthetic effluents using orange waste  |
|  | Sara Mahmood  | 2011 | Biotechnology | Genetic and heamatological evaluation individuals from arsenic contaminated and control areas |
|  | Amjed Ali  | 2010 | Chemistry  | Biosorption of Cd using corn cob |
|  | Faisal Gulzar | 2010 | Pharmacology  | The Antimutagenic& antioxidant activity of flowering plants |
|  | Imtiaz Ahmad  | 2010 | Chemistry  | Electrochemical based remediation of lead contaminated soil |
|  | M. Shoaib Raiz | 2010 | Biotechnology  | Toxicity of nanoparticles |
|  | Mr. M AbubakarSadiqque | 2010 | Env. Science  | Pyhtoremediation of arsenic  |
|  | Ms. AsmaMunir | 2012 | Biotechnology | Development of microbial screening method for detection of antibiotic residues in meat. |
|  | Nazia Tabassam | 2011 | Chemistry  | DI- chloride-and triorganotin (IV) complexes with oxygen donor ligand: synthesis, characterization and biological activities. |
|  | Mudassir Jabeen | 2011 | Chemistry  | Synthesis spectroscopy and biological activities of homobimetallic complexes with the ligand having O- and S-donor sites. |
|  | Ms. Hira Kamal | 2012 | Biotechnology | “Optimization of Loop Mediated Isothermal Amplification (LAMP) a new tool for diagnosis of pest des petits ruminants virus” |
|  | Ms. UneebSaliha | 2012 | Biotechnology | Phylogenetic characterization of Newcastle disease (NDV) virus in commercial poultry farms in Pakistan |
| **M. Sc.** |
|  | Muhammad Arshad | 2002 | Biochemistry | The genotoxictiy of doxycycline in mice  |
|  | Rabia | 2002 | Chemistry | Toxicity Testing of Chloropyrifos in Fish |
|  | Hina Nasir | 2002 | Chemistry | Toxicity Testing of Cyhalothrin in Fish |
|  | Shoaib Ali | 2003 | Biochemistry | Genotoxicity of cyhalothrin in Rats by Using comet assay  |
|  | M. Rooman Sarfraz | 2003 | Chemistry | Removal of heavy metals (Cd) from industrial effluent through biosorption |
|  | M. Mushtaq Hussain | 2005 | Chemistry | Electrochemical treatment of effluent form textile Industry |
|  | M. Asghar | 2005 | Chemistry | Electrochemical treatment of effluent of Paper & pulp industry |
|  | Atif Imran Shah | 2005 | Chemistry | Electrochemical treatment of Synthetic Dyes |
|  | M. Tariq Mehmood | 2005 | Chemistry | Detoxification of effluent containing heavy metals ( Cr/Cd) electrochemically |
|  | M. Nadeem | 2005 | Chemistry | Electrochemical treatment tanneries effluent |
|  | M. Bilal Ashraf  | 2005 |  Biochemistry | Genotonicity testing of Bifenthrin in fishes by comet assay |
|  | M. Salman Ikram | 2005 | Biochemistry | Testing of LD 50 and genotoxicity of Bifenthrin in rats |
|  | Mubammad Shahbaz | 2010 | Chemistry  | Aquatic Toxicity of pesticides |
|  | Muhammad Abrar | 2010 | Industrial Chemistry  | Electrochemical treatment of Textile Effluents  |
| **PhD** |
|  | Javed A. BhalliCompleted  | 2009 | Biotechnology | Genotoxic Environmental Risk assessment by using molecular Biomarkers |
|  | Mrs. Affaf KhawarCompleted | 2010 | Biochemistry  | Standardization of identification methods and quality characteristics of y- irradiated foods  |
|  | Usman WaheedCompleted | 2012 | Biotechnology  | Diagnosis of FMD through PCR, Isolation of local strains, Vaccine Production  |
|  | Tayyaba AliCompleted | 2012 | Biotechnology  | Genotoxic Environmental Risk assessment by using molecular Biomarkers |
|  | Rashid Mehmood(Thesis submitted) | 2012 | Biotechnology  | Molecular Diagnosis & epidemiology of Brucellosis |
|  | Rahat Ali(Thesis submitted) | 2012 | Biotechnology | Genotoxicity of Ochratoxin with emphasis in poultry birds & feed |
|  | Muhammad Ismail(Writing up) | 2013 | Biotechnology | Environmental risk assessment of Pesticides in Non target organisms |
|  | Ms. Rakhsahinda Sadiq (Thesis submitted ) | 2013 | Biotechnology | Toxicological evaluation of Nanoparticles |
|  | Waqas Ashraf(Writing up) | 2013 | Biotechnology | Diagnosis and molecular characterization of peste des petits ruminants (PPR) |
|  | Muhammad MoazamJalees | 2006 | Microbiology | Isolation of PPR virus and experimental model of its pathogen city in laboratory animals. |
|  | Haider Khan (completed) | 2011 | Microbiology | Sero-pravalance&serosurvailance of PPRV  |
|  | Afzal Naeem | 2012 | Biotechnology  | Risk assessment studies of engineered toxin proteins and field evaluation of transgenic plants |
|  | Khizar Hayat(Thesis submitted)  | 2012 | Biosciences  | Monitoring pesticide toxicity in exposed population  |

**LIST OF PUBLICATION**

**(Impact factor ~109)**

**Book:**

Saeed, A., Abubakar, M., **Khan, Q. M.,** (2011). Foot & Mouth Disease Virus (FMDV): Molecular Epidemiology of FMDV in Province Punjab, Pakistan. Published by LAMBERT Academic Publishing. Total pages 142

**Patent:**

**Khan, Q. M.,** Amer J. Hasmat, M. Anwar-ul-Haq. (2012) “Dual column Benchtop Transparent Type Biosorption based treatment system for heavy metal and color removal studies” (and for on-site demonstration service)”,

**(Registration # IPO.31/2012)**

**Publications in International Journals:**

1. Tara, N., Afzal, M., Ansari, T. M., Tahseen, R., Iqbal, S., **Khan, Q. M.,** (2013) Combined use of alkaline-degrading and plant growth- promoting bacteria enhanced phytoremediation of diesel contaminated soil. ACCEPTED in International Journal Phytoremediation **(I.F. 1.2**)
2. Ali, R., Xiaoqing, G., Haixia, L., **Khan, Q. M.,** Waheed, U.,Ismail, M., Ali, T., Bhalli, J. A., Mobin, A., and (2013) Mutant frequency in comparison to oxidative DNA damage induced by ochratoxin A in L5178 tk+/- (3.7.2C) mouse lymphoma cells. Accepted in Drug and Chemical Toxicology **(I.F 1.293)**
3. Irem, S., **Khan, Q. M.,** E. Islam., Hashmat, A. J., Haq, M. A., Afzal, M., and Mustafa, T., (2013)Enhanced removal of reactive navy blue dye using powdered orange waste.ACCEPTED in Ecological Engineering**(I.F.2.958)**
4. Afzal, M., G, Shabir. Tahseen, R., Islam, E., S, Iqbal., **Khan, Q. M.,** Khalid, Z. M., (2013) Endophytic*Burkholderia* Sp. Strain PsJN improves plant growth and phytoremediation of soil irrigated with textile effluent. ACCEPTED *in Clean soil, air & water*. July 2013 **(I.F. 2.2)**
5. Ali, R., Ismail, M., Bhalli, J. A., Mobin, A., and **Khan, Q. M.,** (2013) Effect of temperature on ochratoxin A, production in common cereals by Aspergillus species. ACCEPTEDin Journal of Animal and Plant Sciences Feb, 2013 23 (3) 2013. **(I.F. 0.638)**
6. Jalees, M. M., Hussain, I., Arshad, M., Muhammad, G., **Khan Q. M.,** and Mahmood M. S., (2013) Occurrence of Peste Des Petitis Ruminants in Five Districts of Punjab, Pakistan. Pak. Vet. J. 33(2): 165-169. **(I. F1.365)**
7. Shabir, G., Afzal, M., Tahseen, R., Iqbal, S., Khan, Q. M., Khalid, Z. M., (2013) Treatment of Oil Refinery Wastewater Using Pilot Scale Fed Batch Reactor Followed by Coagulation and Sand Filtration. American Journal of Environmental Protection (2013) 1 (1): 10-13
8. Khan, S., Afzal, M., S, Iqbal., Mirza, M. S., and **Khan, Q. M.,** (2013) Inoculum pretreatment affects bacterial survival, activity and catabolic gene expression during phytoremediation of diesel contaminated soil. Chemosphere. 91 (2013)663-668 ( **I.F. 3.2**)
9. Khan, S., Afzal, M., Iqbal, S., **Khan, Q. M**., (2013) Plant–bacteria partnerships for the remediation of hydrocarbon contaminated soils. Chemosphere. 90 (4): 1317-1332 ( **I.F. 3.2**)
10. Ahmad, F., S, Iqbal, Anwar, S., Afzal, M., E. Islam., Mustafa, T., **Khan, Q. M.,** (2012) Enhanced remediation of chlorpyrifos from soil using rye-grass (*Lolliummultiflorum*) and chlorpyrifos-degrading bacterium Bacillus pumilus C2A1. Journal of Hazardous Materials. 237 (238): 110-115 **(I F. 4.2)**
11. Jabbar, S., Shahzadi, I., Rehman, R., Iqbal, H., Ain, Q.U., Jamil, A., Kousar, R., Alib, S., Shahzadi, S., Choudhary, M. A., Shahid, M., **Khan, Q. M.,** Sharma, S, K., &Qanungo, K., (2012) Synthesis, characterization, semi-empirical study, and biological activities of organotin (IV) complexes with cyclohexylcarbamodithioic acid as biological active ligand. Journal of Coordination Chemistry. 65 (4): 572-590 (**I.F 1.547)**
12. Sadiq, R., Bhalli, J. A., Yan, I., Wooderuff, R. S., Pearce, M. G., Li, Y., Mustafa, T., Watanabe, F., Pack, M. L., Biris, A. S., **Khan, M. Q.,** Chen, T. (2012). Genotoxicity of TiO2 anatase nanoparticles in B6C3F1 male mice evaluated using Pig-a and flow cytometric micronucleus assays. Mutation Research/Genetic Toxicology and Environmental Mutagenesis. 745:65-72 **(I.F 3.035)**
13. Munir, M., Zohari, S., Saeed, A., **Khan, Q. M.**, Abubakar, M., LeBlanc, N., Berg, M., (2012). Detection and phylogenetic analysis of Peste des Petits Ruminants (PPR) Virus isolated from outbreaks in Punjab, Pakistan. Transboundary and Emerging Diseases. 59 (1): 85–93 **(I.F 2.448)**
14. Jabeen, M., Ali, S., Shahzadi, S., Shahid, M., **Khan, Q.M.,** Sharma, S.K., Qanungo, K., (2012). Homobimetallic complexes of ligand having *O*- and S-donor sites with same and different di- and trialkyl/aryltin(IV) moiety: their synthesis, spectral characterization and biological activities. Journal of the Iranian Chemical Society. 9 (3) : 307-320 **(I.F 2.215)**
15. Afzal, M., G, Shabir., S, Iqbal., T, Mustafa., **Khan, Q. M.,** Khalid Z. M., (2012) Assessment of heavy metal contamination in soil and groundwater at leather industrial area of Kasur, Pakistan. ACCEPTED in Clean soil, air & water. **(I.F. 2.2)**
16. Khan, H. A., Rahman, S. U., Khan, A., and **Khan, Q. M.,** (2012). Genetic diversity in field isolates of Peste des Petits ruminants (PPR) virus from Pakistan by sequencing and phylogenetic analysis. ACCEPTEDin PVJ **(I. F1.365)**
17. Shabir, G., Anwar, F., Sultana, B., Khalid, Z. M., Afzal, M., **Khan, Q. M.**, and Ashrafuzzaman, M., (2011). Antioxidant and Antimicrobial Attributes and Phenolics of Different Solvent Extracts from Leaves, Flowers and Bark of Gold Mohar *[Delonixregia* (Bojer ex Hook.) RAF.] Molecules 16 (9) : 7302-7319 **(I.F. 2.0)**
18. Ali, S., **Khan, Q. M.**, Waheed, U., Arshad, M., Asif, M., Farooq, M., (2011). RT-PCR evaluation for identification and sequence analysis of foot-and- mouth disease serotype O from 2006 to 2007 in Punjab, Pakistan. Comparative Immunology, Microbiology and Infectious Diseases.34 (2) 95-101 **(I.F. 3.605)**
19. Ali, R., Mitelstaedt, R. A., Shaddock, J. G., Ding, W., Bhalli, J. A., **Khan, Q. M.**, and Heflich, R. H., (2011). Comparative analysis of micronuclei and DNA damage induced by Ochratoxin A in two mammalian lines. Mutation Research Genetic/Toxicology and Environmental Mutagenesis. 723 (1) 58-64 **(I.F 3.035)**
20. Waheed, U., Parida, S., **Khan, Q. M.,** Hussain, M., Ebert, K., Wadsworth, J., Reid, S.M., Hutching, G.H., Mahapatra, M., King, D.P., Paton, D.J., and Knowles, N.J., (2011). Molecular Characterization of Foot-and-Mouth disease viruses from Pakistan 2005-2008. Transboundary and Emerging Disease [58 (2)](http://onlinelibrary.wiley.com/doi/10.1111/jva.2011.58.issue-2/issuetoc): 166–172 **(IF2.448)**
21. Khawar, A., Bhatti I. A., **Khan, Q.M.**, Khan, A. I.**,** Asi, M. R., Ali, T., (2011). Evaluation of irradiation in foods using the DNA Comet assay. Journal of Food Science and Technology. 48 (1): 106-109, **(IF 0.498)**
22. Ali. S, Waheed, U., Arshad, M., **Khan, Q.M.,** Ali, M., and Badar, M., (2011). RT-PCR Evaluation of foot and mouth disease serotype O in saliva, tracheal and vesicular samples of goats in Punjab, Pakistan. Pakistan J. Zool. 43 (4): 808-811 **(I.F0.309)**
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24. Zahoor M. A, Abubakar, M., Naim, S., **Khan. Q. M.,** Arshed, M. J., (2011). Molecular Typing of Field Isolates from two outbreaks of Infectious Bursal Disease Virus from Pakistan. Veterinary World 4 (7): 297-300
25. Zahoor M. A, Abubakar, M., Naim, S., **Khan. Q. M.,** Arshed, M. J., (2010). Incidence and Molecular Characterization of Infectious Bursal Disease Virus in Commercial Broilers in Pakistan. IJAVMS 4 (3): 75-80. **(I.F. 0.384)**
26. Khawar, A., Bhatti, I. A., **Khan, Q. M.**, Bhatti, H. N., Sheikh M. A., (2010). A Germination test: An easy approach to know the irradiation history of seeds. Pak. J. Agri. Sci., 47(3): 279-285**(I.F 1.240)**
27. Bhalli. J. A, Khan**, Q.M.**, Khalid, Z.M., (2009). Cytogenetic and Molecular Biomonitoring of Sprayers Exposed to Pesticides in Cotton Fields in Pakista. Environmental And Molecular Mutagenesis 50: 573-573 **(I.F3.709)**
28. Bhalli.J.A, Ali, T., Asi, M.R., Khalid, Z.M., Ceppi, M., **Khan, Q.M.,** (2009). DNA Damage in Pakistani Agricultural Workers Exposed to Mixture of Pesticides. Environmental and Molecular Mutagenesis 50:37-45 **(I.F3.709)**
29. Ismail, M., Ali, R., T, Ali., Waheed, U., **Khan, Q.M.**, (2009). Evaluation of the Acute Toxicity of Profenofos and its Effects on the Behavioral Pattern of Fingerling Common Carp *Cyprinuscarpio* L., 1758). Bulletin of Env. Contamination and Toxi. 82 (5)569-573, **(I.F 1.139)**
30. Anwar, S., Liaquat, F., Iqbal, S., **Khan, Q. M.,** Khalid, Z. M., (2009). Biodegradation of chlorpyrifos and its hydrolysis product 3, 5, 6-trichloro-2-pyridinol by *Bacillus pumilus* strain C2A1. Journal of Hazardous Material. 168 (1): 400-405 **(I.F 4.173)**
31. Muhammad, A., Awan, R. A., Babar, M. E., Ahmad, A., Furyal, S., **Khan, Q. M.,** (2009). Development of genetic marker for Molecular detection of *Brucellaabortus*. Pakistan J. Zool*.* No. 9:267-271 **(I.F0.309)**
32. Waheed, U., Saeed, A., Mobeen, A., **Khan, Q. M.** (2009) The Vp1 (Capsid Protein) Gene Based DNA Sequencing for Epidemiological Analysis of FMDV, Isolated From Buffaloes in Pakistan. Pakistan J. Zool*.* No. 9:333-339 **(I.F0.309)**
33. Khan M.Z., Hassan, S., Mahmood, F., **Khan, Q. M.**, Muhammad, G., Javed, I., (2008). Pathological effects of Benomyl in male Japanese quail (*Coturnix japonica*). Acta Veterinaria BRNO 77(2):209-216 **(I.F 0.69)**
34. Farooq, U., **Khan, Q. M.**, Barrett, T., (2008). Molecular diagnosis of rinderpest & Peste des Petits Ruminants (PPR) virus using Trizol reagent. PVJ 28 (2): 63-67 **(I. F1.365)**
35. Farooq, U., **Khan, Q. M.**, Barrett, Tom., (2008). Molecular Based Diagnosis of Rinderpest and Peste des Petits Ruminants (PPR) Virus in Pakistan. Int. Agri. Biol., 10 ( 1): 93-96 **(I.F0.940)**
36. Ali, T., Bahalli, J. A., Shahid, M., **Khan, Q. M.**, (2008). Cytogenetic Damage in Female Pakistani Agricultural Workers Exposed to Pesticides. Environmental and Molecular Mutagenesis 49:374-380 **(I.F 3.709)**
37. Bhalli, J. A., Ali, T., Asi, M.R., Khalid, Z.M., Ceppi, M., **Khan, Q. M.**, (2008). DNA Damage in Pakistani Agricultural Workers Exposed to Mixture of Pesticides. Environmental and Molecular Mutagenesis 48 (7): 629-629 **(I.F 3.709)**
38. Babar, M.E., Farid, A., Abdullah, M., **Khan, Q. M.**, Ahmed, J., Nadeem, A., Benkel, B. F., (2007). Genetic variability at seven codons of the prion protenin gene in nine sheep breeds of Pakistan. IJAVMS 0 (1)1:14 **(I.F0.384)**
39. Khan, H. A., Siddque, M., Rehman, S., Arshad, M. J., **Khan, Q. M.**, Ashraf, M., (2007). Serosurveillance of PPRV in sheep and goat in Punjab province. Pakistan Veterinary Journal 27 (3): 109-112 **(I.F 1.365)**
40. Akhtar, M.S., Saeed, H., Almas, K., **Khan, Q. M.**, Rahman, S.U., (2007). Efficiency of formalin addition as preservative on milk quality. Accepted by PV J **(I.F 1.365)**
41. Waheed, U., Farooq, S., Mahmood, R., **Khan, Q. M.**, (2007). RT-PCR Based Diagnosis of Foot and Mouth Disease in Punjab, Pakistan. Int. J. Biol. Biotech., 4 (1): 19 -26
42. Bhalli J A., **Khan, Q. M.**, Haq, M.A., Khalid, A. M., Nasim, A., (2006). Cytogenetic analysis of Pakistani individuals occupationally exposed to pesticides in a pesticide production industry. Mutagenesis 21 (2): 143–148  **(I.F3.983)**
43. Bhalli, J.A., Ali, T., Khan**, Q. M.**, (2006). Assessment of DNA damage in cotton field female workers exposed to pesticides by comet assay. Environmental and Molecular Mutagenesis47 (I) 6: 474-474  **(I.F 3.709)**
44. Bhalli, J. A., **Khan, Q. M.**, (2006).[Use of hernatological, biochemical and genetic biomarkers to monitor Pakistani agriculture workers exposed to pesticides: A follow-up study.](http://apps.isiknowledge.com/full_record.do?product=UA&search_mode=OneClickSearch&qid=4&SID=2DnPgABPemKojk3bg5d&page=1&doc=4&colname=WOS)Environmental and Molecular Mutagenesis    47 (I)6: 477-477**(I.F 3.709)**
45. Bhalli J. A., Khan, Q. M., Nasim, A., (2006). DNA Damage in Pakistani Pesticide. Manufacturing Workers Assayed Using the Comet As) ay. Enviro (mental and Molecular Mutagenesis 47:587-593  **(I.F3.709)**
46. Mubeen, F., Shiekh, M. A., Iqbal, T., **Khan, Q. M.**, Malik, K. A., Hafeez, F.Y., (2006). In vitro investigation to explore the toxicity of fungicides for plant growth promotomingrhizobacteria. Pak. J. Bot., 38 (4) 1261-1269 **(I.F. 0.947)**
47. Zahoor, M. A., Hussain, I., Mansoor, M. K., Masood, S., **Khan, Q. M.**, (2005). Very virulent strains of infectious bursal disease virus in Pakistan. J. Anim. Sci. 82 (1), J. Dairy Sci. 87 (1), Poult. Sci. 83(1)132:109. **. (I.F2.497)**
48. Zahoor, M. A., Hussain, I., Mansoor, M. K., Masood, S., **Khan, Q. M.**, (2005). RT-PCR based diagnosis of infectious bursal disease virus in Pakistan. J. Anim. Sci. 82 (1), J. Dairy Sci. 87 (1), Poult. Sci. 83 (1) 133:109-110 **(I.F2.497)**
49. Zahoor, M. A., Hussain, I., Mansoor, M. K., Masood, S., **Khan, Q. M.**, (2005). Rapid Detection of infectious bursal disease virus using One-step RT-PCR in clinical samples in Pakistan. . Anim. Sci. 82 (1), J. Dairy Sci. 87 (1), Poult. Sci. 83 (1)131:109 **(I.F2.497)**
50. Zahoor, M. A., Hussain, I., **Khan, Q. M.**, (2005). Two outbreaks of very virulent infectious bursal disease virus in Pakistan. Vet Rec., 157 (25): 813-814 **(I.F1.504)**
51. **Khan Q.M**., and Haq, M. A., (2004). *In vivo*genotoxic effects of a synthetic insecticide, cyhalothrin in fish. European Journal of Genetic & Molecular Toxicology, issue, p70.
52. Malik, M.H., **Khan, Q. M.**, Malik, N., Haq, A., Yousaf, A., (2003). Epidemiology and diagnosis of rinderpest: Pakistan and global eradication programme. Intl JrAgri&Biol 5 (4): 650-654 **(I.F0.940)**
53. **Khan, Q. M.,** Philips, D.H., Martin, F.L., Cole, K.J., Hewer, A., Hussain, I., Khalid, Z. M., (2000). Detection of DNA damage by the comet assay in MCL-5 cells exposed to extracts of urban air particulate matter. Mutagenesis15 (5): 444 **(I.F3.983)**
54. Khaliq, T., Ahmad, M., **Khan, Q. M.**, Javed, I., (1991). Disposition kinetics & Urinary excretion of Oxytetracycline in goats. Pak. J. Agri. Sci. 28 (4): 323-327. **(I.F 1.240)**
55. Akhtar, M. S., and **Khan, Q. M.**, (1985). Studies the effect of *Acacia Arabica* fruits (KIKAR) and carallumaedulis roots (CHUNG) on the blood glucose levels in normal and alloxan-diabetic rabbits. Pak.J.Agri. Sci. 22 (4): 252-259 **(I.F 1.240)**
56. Akhtar, M S., **Khan, Q. M.**, Khaliq, T., (1984). Effect of *Euphoribiaprostrata* and *Fumariaparviflora* in normoglycaemic and alloxan-treated hyperglycaemic rabbits. PlantaMedica 50 (2): 138-142 **(I.F2.369)**
57. Akhtar, M. S., and **Khan, Q. M.**, Khaliq, T., (1983). Relative antiascaris efficacy and safety of Afsanteen (*Artimisiamaritima*), Lin. Santonin and Piperazine in buffalo-calves. Pak. J. Agri. Sci., 20(1-2): 57-63**(I.F 1.240)**

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1. **Khan Q. M.** (2012) Islam & environmental protection. The Environ Monitor 12 (7&8) 16-18
2. Bhalli, J. A., **Khan, Q. M.**, (2006). Pollution level analysis in Tannery effluents collected from three different cities of Punjab, Pakistan. Pak. J. Bio. Sc., 9 (3): 418-421
3. Arshad, M., **Khan, Q. M.**, Iqbal, T., Mukhtar, K., (2005). Assessment of genotoxic effects of Doxycycline in mice by the comet assay. Rawal Med J., 30(2):85-87
4. Nisar H., Ahmad, S., **Khan, Q. M.**, Bhatti, H. N., (2003). Determination of LC50 of Cyhalothrin in fish. Indus Journal of Plant Science, 2 (2) 134-136
5. Saleem, M., Syed, W. H., Shahid. M. A., **Khan, Q. M.**, Haq, M. A., (2002).
Study of antimutagenic properties of Turmeric (Curcuma longa L.) by Ames test (plate incorporation assay). Sci. Int., 14 (4): 311-317, ISSN: 1013-5316
6. Khalid, Z.M., Yousaf, S., **Khan, Q. M.**, Rashid, F., Malik, K.A., (1999). Microbiological means of detoxification of hazardous waste from an antibiotic producing pharmaceutical industry. Biologia 44 (1&2): 259-274
7. **Khan Q. M.**, Roux J.C., Khalid, Z. M., Malik, K. A., (1999). Application of industrial waste biomass for chromium removal from tannery effluent. Biohorizon 2 (1-4) : 117-122
8. Hussain, I., **Khan, Q. M.**, Khalid, Z. M., Faiz, M., Iqbal, S., Malik, K. A., (1998). Decolourization of aqueous dye solutions and textile effluents using industrial waste biomass. Biologia, 44(1&2):218-228
9. Muhammad, K., Hussain, Z., **Khan, Q. M.**, Zaman, Mir., (1991). In vitro antifungal activity of gentian violet copper sulphate, Potassium lodide&Nystatin against *Aspergillus fumigates.* Pak. J. Agri Res 11 (1): 74-76.
10. Akhtar, M. S., **Khan, Q. M.**, Khaliq, T., (1987). Pharmacological screening for hypoglycemic activity of *Asparagus racemosus* roots and *Lodoiceasechellarum* fruit in Rabbits. J. Pharm., 8 (1&2): 63-70.
11. Akhtar, M. S., and **Khan, Q. M.**, (1985). Effect of *Portulocaoleroce* (Kulfa) and *Taraxacumofficinale* (Dhudhul) in normoglycaemic and alloxan-treated hyperglycaemic rabbits. JPMA, 35: 207-210.

**International proceedings (full papers)**

1. Waheed, U., Gibson, D., Paton, D. J., **Khan, Q. M.**, Parida, S., (2008). Development and Evaluation of IGM Elisa for the Detection of (FMDV) SpecificIGM Antibodies in Bovine and Ovine Sera - The Global control of FMD - Tools, ideas and ideals – Erice, Italy 14-17 October 2008 pp. 383-386
2. **Khan, Q. M.,** (2008) “Molecular epidemiology & diagnosis of FMDV and PPRV in field samples from Punjab, Pakistan”. In proceedings of the Joint ICTP-IAEA conference on disease patterns according to the Joint ICTP-IAEA conference on disease patterns according to climate change. Trieste, Italy, 12-14 May 2008 vol. 5 pp 157-162
3. **Khan, Q. M.,** (2005) Environmental risk assessment, using biomarkers for carcinogens, ESD 2005, Environmentally Sustainable Development COMSATS June 26 - 28, 2005**.,** pp. 521-528
4. **Khan, Q. M.,** Bhalli, J. A., Nasim, A., Malik, K. A., (2005). Evaluation of genetic damage in chrome tanning workers **by the single cell gel electrophoresis (comet assay).** In proceedings of XIII International Conference on Heavy Metals in the Environment, Rio de Janeiro, Brazil. June 5-9, 2005 pp. 4
5. Farooq, U., **Khan, Q. M.**, and Haq, M. A., (2004). Molecular based diagnostics of rinderpest virus by using Trizol. 2nd International Symposium on Biotechnology University of Sindh, Jamshoro, Pakistan. Jan 19-21, 2004 pp. 32-33.
6. Farooq, U., Haq, M. A., and **Khan, Q M.,** (2004). RT-PCR based diagnosis of rinderpest virus in Pakistan. 2nd International Symposium on Biotechnology University of Sindh Jamshoro Pakistan. Jan 19-21, 2004 pp 22-23
7. **Khan, Q. M.,** Khalid, Z. M., and Malik, K. A., (1999). Methane utilizing bacteria and methane emission from rice fields/landfills. In Proceedings - SAARC Workshop on Urban air quality. Topi, Pakistan, Published by GIKI Library, GIK Institute, Topi, NWFP, Pakistan. Dec 16-18, 1996 pp 32-34
8. **Khan, Q. M**., Faiz, M., Iqbal, S., Khalid, Z. M., and Malik, K.A., (1995). Isolation and Characterization of Tn-induced Mutants of Biosurfactant Producing *Pseudomonas* Strains. In: Biotechnology for Sustainable Development. Eds. Malik, KA, Nasim, A., and Khalid, A.M., Proceedings of International Symposium on Biotechnology for Sustainable Development, NIBGE, Faisalabad. 15-20 December, (1993) pp 351-356
9. **Khan, Q. M**., Faiz, M., Iqbal, S., Khalid, Z. M., and Malik, K.A., (1995) Isolation and characterization of Tn10 induced mutants of Pseudomonas aeruginosa K3 affected in hydrocarbon assimilation and biosurfactant production. In Proceedings International Symposium on Biotechnology for Sustainable Development, NIBGE Faisalabad. 15-20 December, (1993) pp 369-374
10. Khalid, Z.M., Iqbal, S., Tabasum, R., **Khan, Q.M**., and Malik, K.A., (1995). Biotechnological solution to hazardous effluents from textile industries. Proceedings in International Symposium on Biotechnology for Sustainable Development, NIBGE Faisalabad, 15-20 December, 1993 pp 369-374
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1. Haq M. A., Zahoor, M. A., **Khan Q.M**., Hussain, I., (2003). RT-PCR based Diagnosis of Infectious Bursal Disease Virus (IBDV) in Pakistan in Proceedings of. National Executive symposium on "Technologies developed for commercialization- Challenges and opportunities” Peshawar edited by Ishanullah& S. U .Khattak pp-96-98
2. **Khan Q.M**., Khalid, Z. M., Iqbal, S., Faiz, M., Rashid, F., and Malik, K.A., (1997). Biotechnology a solution to environmental problems in Proceedings of First Biotechnology Symposium, Univ of Agri. Faisalabad. June 27, 1996 pp 159 - 167
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8. Faiz, M., **Q. M. Khan.,** and Malik, K.A., (1993). Development of Tn10 mutagenesis for oil degrading bacteria. In: Proceedings of 5th National Chemistry Conference, Quaid-i- Azam University, Islamabad. October 25-28, 1993 pp95-98
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10. Farooq, M., **Khan, Q. M.,** and Khalid, Z.M., (2005). Molecular epidemiology of Peste des Petits Ruminants Virus (PPRV) in Pakistan, 8th Biennial National Conference in PSBMB Karachi. March 7-9, 2005 pp67

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2. Haq, M. A., Hassan, A., Jabbar, A., Yousaf, M. N., and **Khan, Q. M.,** (2006). Treatment of Tannery waste water with an electrolysis system. “Environmental application of advanced oxidation process (EAAOP)” at the Gerani resort area of Chania. September 7-9, 2006.
3. Bhalli, J. A, **Khan, Q. M.,** (2005)Cytogenetic Biomonitoring of a group of Pakistani workers involved in pesticide production, Global Issues in Genetic Toxicology and Environmental Mutagenesis. 9th International Conference on Environmental Mutagens, USA September 4-8, 2005
4. Haq, M. A., **Khan, Q. M.,** and Khalid, Z. M., (2005). Detoxification of textile effluents by using an electrochemical treatment method. 207th meeting of Electrochemical Society, Quebec City Canada. May 15-20, 2005 (Abst # 1320)
5. **Khan, Q.M**., Haq, M. A., and Nisar, H., (2004). In vivo genotoxic effects of a synthetic insecticide, cyhalothrin in fish. 34th annual meeting of EEMS Netherlands. 2004 p91
6. Zahoor, M. A., Hussain, I., **Khan, Q. M.,** Haq, M. A., and Jamil, A., (2004). Molecular Characterization of Infectious Bursal Disease Virus in Pakistan. In Proceedings of International Poultry Scientific Forum, Georgia World Congress Center, Atlanta, Georgia, USA, January 28-30, 2004 pp1815
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9. **Khan, Q.M**., Noor, M., Hussain, I., Qureshi, M., and Khalid, Z. M., (2001). Use of *Azolla pinnata,* a water fern for chromium removal*.* International Bio-hydrometallurgy Symposium IBS, Brazil. 2001
10. **Khan, Q.M.,** Philips, D.H., Martin, F.L., Cole, K.J., Hewer, A., Hussain, I., and Khalid, Z. M., (2000). Detection of DNA damage by the comet assay in MCL-5 cells exposed to extracts of urban air particulate matter. Poster presentedatUnited Kingdom Environmental Mutagen Society, Millennium meeting, Swansea, UK. July 3-7, 2000
11. **Khan, Q.M**., Wasim, M., Khalid, Z. M., and Malik, K. A., (1999). Removal of chromium (VI) by a high chromium tolerant *Cephalosporium*sp (QK-5). in International Biohydrometallargy Symposium, Spain. 1999
12. Roux J.C., **Khan, Q. M.,** and Tobin, J., (1996). Use of industrial fungal by-products to remove chromium from tannery waste water. 10th International Biotechnology Symposium, Sydney Australia. August 25-30, 1996
13. **Khan, Q.M**., (1996). Monitoring of Industrial Effluent for Mutagenicity/toxicity Using a Battery of microbial Tests. Inaugural International Conference on Genetics Islamabad. November 26-28, 1996
14. **Khan, Q.M**., and Leak, D.J., (1995). Transposon as molecular genetic tools to analyze the regulation in methanotrophic bacteria. In Proceedings of 8th International Symposium on Microbial Growth on C1 Compounds, California, USA. -A7 August 27 - September 1, 1995 pp-32
15. **Khan, Q.M**., Challan, G., and Roux, J.C., (1995). Removal of chromium (III) from tannery waste water using different biosorbents. Forum for Applied Biotechnology Gent Belgium. September 27-29, 1995
16. Khaliq, T. M., Ahmad and **Khan, Q. M.,** (1990). Pharmacokinetics and urinary excretion of oxytetracycline in goat. Proceedings of 3rd International Congress PVMA Islamabad.

**Manuals/chapters/:**

1. **Khan Q. M.,** and AminaMobeen (2012) Manual “Molecular Diagnosis of Animal Diseases” October 15-19, 2012 at Soil & Environmental Biotechnology Division NIBGE Fsd. ISSBN: 978.969.8189.16.7
2. **Khan Q.M.,** A.H. Hasmat& A. Mobeen (2011) A manual of techniques in molecular diagnosis of animal pathogens (64 pages)
3. **Khan Q.M**., R. Tahseen, G. Shabir (2011) SOPs for Environmental &Toxicological testing (submitted to EPA), about 300 pages
4. **Khan Q.M**. (2009) edited “ Code of Conduct for Life Scientists” for submission to National Biosafety Point, Ministry of Foreign Affair, Pakistan
5. **Khan Q. M** (2009) Molecular diagnosis of animal pathogens & advanced biotechnological techniques “a theoretical & practical guide” (total pages-97)
6. **Khan Q.M**. and Tom Barrett (2007) A Laboratory Manual on Molecular Diagnostics of RNA viruses, a practical & theoretical approach
7. **Khan Q. M**& T. Barret (2007) Molecular detection of RNA viruses, A practical & theoretical approach. 37 pages
8. **Khan Q. M**. (2005) “Lab safety guidelines” a chapter in manual of training course on Modern Techniques in Biotechnology published at NIBGE.
9. **Khan Q.M**., Tom Barrett (2003) A Laboratory Manual on Molecular Diagnostics of Morbilliviruses (PAK/5/041), Pakistan.
10. **Khan, Q.M.** (1993) Edited "Guidelines and Voluntary Code of Conduct for Release of Microorganisms into the Environment" for Ministry of Housing and Urban Affairs Pakistan.

**Invited Lectures:**

1. **Khan, Q. M.,** (2013) Invited lecture on “Trends in Environmental Biotechnology” in “International conference on Biotechnology - Prospects & challenges in Agriculture, Industry, Health and Environment” 22-26 April, 2013 at NIBGE Faisalabad.
2. **Khan, Q. M.,** (2013) Invited lecture on “Use of Laboratory animals in toxicity studies ” in National Training Workshop on “Handling and use of Laboratory Animals for Biotechnology and Biomedical Research 02-04 April 2013 at NIBGE Faisalabad
3. **Khan, Q. M.,** (2013) Invited lecture on “Toxic effects of Nanoparticles” in National Training Workshop on “Synthesis and characterization of Nanostructured Materials with Novel Morphologies ” February 18-21, 2013 at NIBGE Faisalabad
4. **Khan, Q. M.,** (2013) Invited lecture on “Environmental Toxicology” in an 11th National Training course on “Modern Techniques in Biotechnology” February 11-15, 2013 at NIBGE Faisalabad.
5. **Khan, Q. M.,** (2013) Invited lecture on “Molecular tools for animal disease diagnosis” in 9th International conference of Pakistan Society for Microbiology in Karachi on 28-30 Jan, 2013
6. **Khan, Q. M.,** (2013) Invited lecture on “Application of biotechnology to solve environmental problems” in 1st International conference on Global Environmental changes “” at GC University Faisalabad on 16-01-2013
7. **Khan Q. M.**, (2012) Acting Director NIBGE Invited lecture title “R & D activities at NIBGE” in two days National Workshop on “Bioclean coal Technologies” November 07-08, 2012 at NIBGE
8. **Khan Q. M.,** (2012) Invited lecture title “Molecular Tools for Animal Disease Diagnosis” in “6th National training course on “Molecular Diagnosis of Animal Diseases” 15-19 October, 2012 at SEBD, NIBGE Faisalabad
9. **Khan Q.M.,** (2012) Invited lecture on “Phytoremediation of contaminated water” in “Consultative meeting on technologies for the removal of heavy metals from industrial effluents” at FC College Lahore on 30-08-2012 by River Ravi Commission (RRC).
10. **Khan Q. M.,** (2012) Invited lecture on “Climate Change- Consequences and Mitigation” on 16 June, 2012 at the Faisalabad Chamber of Commerce & Industry East canal road Faisalabad by Govt. Of the Punjab Environmental Protection Department, Faisalabad
11. **Khan Q. M.,** (2012) Invited lecture on “Trends in Environmental Biotechnology “at the two day workshop on “Promising techniques for industrial effluent treatment” 5-6 June, 2012 at NIBGE Faisalabad.
12. **Khan Q. M.,** (2012) Invited lecture on “Radiation Damage Assessment by Comet Assay” in 18th Post Graduate Annual Training Course on “Safety Measures and Application of Radiation and Isotopes in Agriculture, Health & Industry” From 21-25 May 2012 at NIAB Faisalabad.
13. **Khan Q. M.,** (2012) Invited lecture on “ Islam & Environment Protection” in National Conference on Islam & Environment at Ambassador Hotel Lahore on 19 May, 2012 by National Foundation of Environmental Education & Research
14. **Khan Q. M.,** (2012) Delivered the lecture topic “Techniques in Environmental Toxicology” in a 10th National Training Course on Modern Techniques in Biotechnology Feb 13-17, 2012 NIBGE Faisalabad.
15. **Khan Q. M.,** (2011) Delivered lecture on “ Trends Environmental Biotechnology “ at the one day seminar on Trends Environmental Biotechnology, 18 April 2011
16. **Khan Q. M.,** (2011) Delivered lecture on “Environment Toxicology “ at the 9th National training course on modern techniques in biotechnology March 7-11, 2011 at NIBGE, Faisalabad
17. **Khan Q.M.,** (2011) Delivered lecture on “ Comet Assay – a tool to Detect DNA Damage “ at 17th Post graduate annual training course on “ Safety measures application of radiation & isotope in agriculture, health and industry” April, 25-29, 2011, NIAB, Fsd.
18. **Khan Q.M.,** (2010) Invited lecture on “Advancements in Molecular Cytogenetic Research” in National conference on Molecular Cytogenetic –An Effective selection & Diagnostic Tool in Livestock, Equines & Pets. On 10-11th November, 2010 organized by Animal genetics Lab (AGL) at FAP&T building, A-Block Ravi Campus Pattoki
19. **Khan Q.M.,** (2010) Delivered lecture in an 8th National Training Course on Modern Techniques in Biotechnology on “ Environment Toxicology “ on April 12-16, 2010 at NIBGE Faisalabad
20. **Khan Q.M.,** (2010) Invited lecture on “ Global environmental challenges in 21st century “ at BahauddinZakriya University, Multan on 25th March, 2010
21. **Khan Q.M.,** (2010) Deliver a lecture on “Comet assays a tool to detect DNA Damage “in 16th Annual Training course on “Safety measures in the use of radiation in agriculture and biology research” on March 8-12, 2010 at NIAB Faisalabad.
22. **Khan Q. M.,** (2009) Invited Lecture on (Your Planet Needs you-Unite to combat climate change” at World Environment day “at Serena Hotels Fsd. 5, June 2009.
23. **Khan Q. M.,** (2009) Invited Lecture on (“Comet assay a Tool to detect DNA Damage) at 15th Training course on Safety measures in the use of radiation in Agriculture & Biology “at NIAB 6-10, April 2009.
24. **Khan, Q. M.,** (2008) delivered a lecture on Environmental problems of industries in Faisalabad, & R&D activities of EBD, NIBGE, and “Training workshop/Seminar on Industrial Environment improvement plan (under EPD) 18 June 2008.
25. **Khan, Q. M.,** (2008) delivered a lecture on Pesticide Toxicity “One day Seminar on Pesticides and Bioinoculants” 25th June 2008 at NIBGE Faisalabad.
26. **Khan. Q. M,** (2007) Invited lecture on “Role of nano Biotechnology in Diagnosis and treatment of diseases” at NIBGE Faisalabad. On 10th Sep, 2007
27. **Khan, Q. M.,** (2005) Delivered Lecture on “Environmental toxicology” in Training course on Modern Techniques in Biotechnology 3-8th April 2005 held at NIBGE
28. **Khan, Q. M.,** (2005) Delivered lecture on “Lab safety guidelines” in Training course on Modern Techniques in Biotechnology 3-8th April 2005 held at NIBGE
29. **Khan, Q. M.,** (2005) Delivered lecture on “Animal Behavior” at STEM, training program held at NIBGE 14 March 2005.
30. **Khan, Q. M.,** (2005) Invited lecture on “Research activities of the environmental toxicology lab” National Training Course on Harmful Algal Bloom in Islamabad/Karachi 9-11 June
31. **Khan Q.M.,** (2003) Delivered lecture on Lab safety at National Training Course on Advanced Biotechnological Techniques, held at NIBGE
32. **Khan Q.M.,** (2003) Delivered lecture on Environmental Toxicology at National Training Course on Advanced Biotechnological Techniques, held at NIBGE
33. **Khan Q.M.,** (2003) Delivered lecture on RT-PCR based diagnosis of infectious diseases, on National training course on the molecular diagnosis of Rinderpest & other morbilli viruses held at NIBGE
34. **Khan Q.M.,** (2001) Invited lecture at National Workshop on Disease Surveillance, Reporting and Emergency Preparedness Systems, IAEA/FAO/PARC/PAEC, 23-27 April Islamabad.
35. **Khan Q.M.,** (2001) Delivered invited lecture on “Environmental Protection” at the National Workshop for Poison Control Program for Pakistan, PMC, and Faisalabad. 29-30 Jan 2001.
36. **Khan Q.M.,** (2000) Invited lecture on “Urban air quality and its remediation” delivered at an inaugural section of Environment Watch an NGO for the environment. At University of Agriculture. June 2000.