

Amer Jamal Hashmat

Senior Scientist at Environmental Biotechnology Division,
National Institute for Biotechnology & Genetic
Engineering (NIBGE), Jhang Road Faisalabad, Pakistan.

Phone: 041-2651475 Ext 259
Fax: 041-2651472
Web: www.nibge.org; aamirhashmat@gmail.com

Postgraduate Degrees

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| ME (Environmental Engineering) | 2009-2010 | University of Auckland, New Zealand. |
| Post Graduate Cert. (Env. Engg) | 2007-2008 | Massey University, New Zealand. |
| M. Phil. (Biotechnology) | 2004-2006 | Quaid-i-Azam University, Islamabad. |
| M. Sc. (Environmental Engineering) | 1997-1999 | NUST, Islamabad. |
| B.Sc. (Hons) Agriculture | 1991-1996 | University of Agriculture Faisalabad. |

Thesis, Dissertation and Scientific Reports

ME (Environmental Engineering) Thesis: **(2010)** "Temporal trends of physiochemical parameters in biosolids".
Post Graduate Cert. Research Project: **(2008)** "Role of vertical mixing and sunlight on treatment performance of waste stabilization ponds."
M.Phil Biotechnology Thesis: **(2006)** "Establishment of UASB reactor for the treatment of effluent from pulp and paper & textile Industry".
M.Sc. Environmental Engineering Thesis: **(1999)** "A study to evaluate economic and efficient mix of alum with natural polymer (Sodium Alginate) in coagulation-flocculation process. (A study based on Rawal Dam Drinking Water Treatment Plant Islamabad, Pakistan.)

Publications, Conference Papers & Participations

Hashmat, Amer Jamal, Ejazul Islam, Muhammad Anwar ul Haq, and Qaiser Mahmood Khan. **(2016)** Integrated treatment technology for textile effluent and its phytotoxic evaluation. *Desalination and Water Treatment* Vol. 57 Issue 9, p4146.

Hashmat, Amer Jamal **(2015)** Book title: Temporal Trends of Biosolid. LAP Lambert Academic Publishing; ISBN-13: 978-3659626487. Available online at <http://www.amazon.co.uk/Temporal-Trends-Biosolids-Hashmat-Amer/dp/3659626481>

Sadiq, R., Khan, Q. M., Mobeen, A., & Hashmat, A. J. **(2014)**. In vitro toxicological assessment of iron oxide, aluminium oxide and copper nanoparticles in prokaryotic and eukaryotic cell types. *Drug and Chemical Toxicology*, (0), 1-10.

Samra Irem, Qaiser Mahmood Khan, Ejazul Islam, Amer Jamal Hashmat, Muhammad Anwar ul Haq, Muhammad Afzal and Tanveer Mustafa **(2013)**. Enhanced removal of reactive navy blue dye using powdered orange waste. *Ecological Engineering*. Accepted. DOI # 10.1016/j.ecoleng.2013.07.005 (Impact Factor = 2.958).

Ejazul Islam, Amer J. Hashmat, Atika A. Razzaq and Qaiser M. Khan. Phytoremediation potential of rye grass (*Lolium multiflorum*) and sunflower (*Helianthus annuus*) grown in metal contaminated soil/water. "International Conference on Biotechnology; Prospects & Challenges in Agriculture, Industry, Health & Environment". April 22-26, (2013), NIBGE, Faisalabad, Pakistan. (Poster Presentation).

Samra Irem, Qaiser M. Khan, E. Islam, Amer J. Hashmat, Muhammad Anwar ul Haq, Muhammad Afzal and Tanveer Mustafa. Enhanced removal of arsenic from water using powdered orange waste. "International Conference on Biotechnology; Prospects & Challenges in Agriculture, Industry, Health & Environment". April 22-26, (2013), NIBGE, Faisalabad, Pakistan. (Poster Presentation).

"Integrated Treatment Technology for Textile Effluent and its Phytotoxic Evaluation" (2013) Amer J. Hashmat, Ejaz-ul-Islam, Muhammad Anwar ul Haq and Qaiser M. Khan, published in International Conference on "Biotechnology: Prospects & Challenges in Agriculture, Industry, Health and Environment" held at NIBGE on April 22-26, 2013.

"Pilot scale treatment of simulated textile effluent using integrated treatment system" (2012) Amer J. Hashmat, Muhammad Anwar ul Haq, Ejaz-ul-Islam and Qaiser M. Khan, "Submitted to Water Environment Research" DOI "WER-S-12-00281".

"Electrochemical Treatment of Textile Industrial Wastewater Using Iron Plate Electrodes" (2011) Muhammad Anwar ul Haq, Qaiser M. Khan, Amer J. Hashmat and Ejaz-ul-Islam. "Submitted to Water Environment Research" DOI "WER-10-12-2195".

Poster presentation of Master's Studies "Physiochemical characterisation of biosolids" held at School of Civil and Environmental Engineering, University of Auckland, New Zealand in Feb 2010.

Conference presentation "Effect of light on algal productivity" held on Feb, 21, 2008 with the title "New Phosphorus Removal Plant and Dewatering System" organized by Palmerston North Wastewater Treatment Plant, Manawatu New Zealand.

"Textile and Sugar-cane Industry Wastewater Treatment by UASB reactor" Hashmat, A. J., Zafar M. Khalid and M. Afzal. Abstract Published in the First International Conference environmentally Sustainable Development held on 26-28 June 2005 at COMSATS Institute of Information Technology Abbottabad, Pakistan.

"COD reduction in wastewater of a textile industry after its treatment with commercially available Coagulants." Hashmat, A. J., Zafar M. Khalid and M. Afzal National Executive Symposium on Techniques Developed for Commercialization. Challenges and opportunities at Pearl Continental Hotel, Peshawar. September 21-22, 2003.

Trainings

One Day Seminar on "Quality Management and its Significance in the Present Scenario" by DQA, PAEC. Held at National Institute for Biotechnology and Genetic Engineering (NIBGE) Faisalabad (22nd of September, 2005).

National Training Course on "Molecular Detection of RNA Viruses" Held at NIBGE, Faisalabad (24-26 April, 2007)

Professional training as "In-charge Environmental Laboratory" from Department of Civil and Environmental Engineering, University of Auckland New Zealand (19 March, 2009)

One day training workshop on "Writing Research Proposal" Held at NIBGE, Faisalabad (25th June 2010)

National Workshop on “*Application of Isotope Techniques in Water Resource Research and Management*” Held at PINSTECH, NILORE, Islamabad. (04-07, October **2010**)

Four Days training course on “*ISO 17025:2005*” jointly organized by Q-Lead Global Consultants (Pvt.) Ltd and DQA, PAEC. Held at NIBGE, Faisalabad (28-31 March **2011**)

One Day Seminar on “*Trends in Environmental Biotechnology*” Held at NIBGE, Faisalabad. (18 April, **2011**).

One week 5th National Training Course on “*Molecular Diagnosis of Animal Pathogens*” Held at NIBGE, Faisalabad. (October 17-21, **2011**)

Two days International workshop on “*Technological Advances and Challenges in Water Reclamation and Reuse*” Held at IESE, NUST, Islamabad. (December, 08-09, **2011**)

Co-organized and participated as Faculty member in two days workshop on “*Promising Techniques for Industrial Effluent Treatment*” in context with World Environment Day Held at NIBGE, Faisalabad on (June 05-06, **2012**).

11th National Training Course on “*Modern Techniques in Biotechnology*” Held at NIBGE on Feb 11-15, **2013**.

Certificate of appreciation received for “*National Training Course on Handling and Use of Laboratory Animals for Biotechnology and Biomedical Research*” Held at NIBGE on April 2-3, **2013**.

Represented NIBGE at Dawn Sarsabz Pakistan Agri Expo and Conference Held at Expo centre Lahore on April 4-5, **2013**.

Patents

Formal application to Intellectual Proprietary Organization (IPO) for patent is in progress with the title: “*Dual Column Bench Top Transparent Type Biosorption Based Treatment System for Heavy Metal and Color Removal Studies (and for onsite demonstration service)*”. The Inventors: Dr. Qaiser Mahmood Khan; Amer Jamal Hashmat; Muhammad Anwar ul Haq. (Registration number at IPO 31/2012)

Related Experience & Professional Service

One year (Feb 2008 to Feb 2009) Part time research job as “*Environmental Laboratory Assistant*” at Massey University New Zealand in the project entitled “*Co-digestion and methane production from treatment plants in Manawatu region*”. The responsibilities included: Microbiological and chemical analysis, calibration of instruments, data recording and graphical presentation of records, lab maintenance and management.

Professional training in Laboratory Management and Handling from School of Civil and Environmental Engineering, University of Auckland New Zealand.

Surface water quality modeling project “*Eutrophication Modeling in Lake Waters*” using STELLA 8.1 (Software)

Work Flow History (Since job at NIBGE)

2003: Coagulation-flocculation of industrial effluents

2004: Solid waste management studies for NIAB/NIBGE residential area; designing and fabrication of UASB reactor

2005: Industrial effluent treatment using UASB process/ Pilot scale treatment plants designing and fabrication

2006: Granulation process in UASB and lab scale/ full scale comparison studies.

2007&2008: Vertical mixing and sunlight effect on algal productivity; Light dark ratios and turbulent mixing studies on nutrient uptake by algae in waste stabilization ponds

2009&2010: Physiochemical characterization of biosolids and temporal trends studies.

2011: Pilot scale Integrated wastewater treatment system, sludge management studies, Patent filling (for biosorption based treatment system) and ISO 9001:2008 and ISO 17025 (Environmental testing services)

2012-2016: Wetlands technology for wastewater treatment

Achievements

- Pilot scale, lab scale and bench top wastewater treatment plant designing and fabrication.
(UASB, Biosorption, Electrochemical and integrated wastewater treatment systems etc)
- Anaerobic treatment of textile industry and paper & pulp Industry effluent.
- Biosolids generation, management and disposal option studies.
- A technology ready to transfer to industry via funded project (The project submitted to Interloop 2010)

Updates on current work in progress

- Crude oil degradation using constructed wetlands and plant microbial synergism.
- Publication entitled "Pilot scale treatment of simulated textile effluent using integrated system comprising of electrochemical precipitation and dissolved air flotation system".
- Funded project write-up for ALP with 3.8 M. Rs entitled "Pilot scale treatment of textile effluent using cost effective Integrated treatment technology and potential reuse of wastewater for irrigation purpose".

- Patent filling “Dual Column Bench Top Transparent Type Biosorption Based Treatment System for Heavy Metal and Color Removal Studies (and for onsite demonstration service)” the other one is “On-site Biosorption Based Fixed-Bed Dual Column Wastewater Treatment Plant for Industrial Effluents”