Ashfaque Ahmed Memon, Ph.D.
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PERSONAL INFORMATION

Name:	Dr. Memon, A.A.
Profession:	Professor (Teaching and Research)
Specialization:	Hydraulics and Irrigation
Experience:	28 years
Nationality:	Pakistani
Date and Place of Birth:	April 14, 1966; District Hyderabad, Pakistan
CNIC Number:	41306-8222143-7
Marital Status:	Married
Member ship in Professional Society:	Life member, Pakistan Engineering Council, Membership # CIVIL/12905

EDUCATIONAL BACKGROUND

2011 **Ph.D. (Hydraulics and Irrigation)**
Title of research: *Optimal Identification of Parameters and Simulation of Groundwater Flow*
Mehran University of Engineering and Technology, Jamshoro

1994 **M.E. (Hydraulics and Irrigation)**
Title of research: *Simulation of Pipe Surge and Water Hammer Characteristics*
Mehran University of Engineering and Technology, Jamshoro

1990 **B.E. (Civil Engineering) A Grade (87.62%)**
Title of Final Year Project: Computer Aided Design of Alluvial Channels
Mehran University of Engineering and Technology, Jamshoro

1984 **Intermediate (Pre-Engineering) B Grade (63%)**
Board of Intermediate and Secondary Education Hyderabad

1981 **Matriculation (Science) A Grade (71.41%)**

RESEARCH INTERESTS

- Groundwater simulation
- Hydrologic modeling
- Numerical optimization
- Finite Element Method
- Genetic (Evolutionary) Algorithms

CARRER SUMMARY

Post	Period	Department	Job Responsibilities
Professor (BPS-21)	April 2014 to date	Department of Civil Engineering Mehran University of Engineering and Technology, Jamshoro	Teaching variety of students to the students of first to final year and supervision of final year Thesis/Projects. Carry out research in various fields of Civil engineering with special interest in Groundwater hydrology.
Assistant Professor (BPS-19)	Feb 1996 to April 2014	Department of Civil Engineering Mehran University of Engineering and Technology, Jamshoro	Teaching variety of subjects to the students of first to final year and supervision of final year Thesis/Projects
Lecturer (BPS-17)	Sep 1992 to Feb 1996	Department of Civil Engineering Mehran University of Engineering and Technology, Jamshoro	Teaching different subjects and supervision of final year Thesis/Projects
Teaching and Research Assistant (Fixed)	Mar 1991 to Sep 1992	Institute of Irrigation and Drainage Engineering Mehran University of Engineering and Technology, Jamshoro	Providing assistance in teaching and research activities being carried out at the Institute
Sub-Engineer (BPS-11)	Nov 1990 to April 1991	Irrigation and Power Department Government of Sindh	Supervision of repair and maintenance works of surface drains

A) TEACHING AND RESEARCH

1. Taught different Modules of Undergraduate and Graduate programs in the following Institutes/Departments of the University.
   - Department of Civil Engineering
   - Institute of Environmental Engineering and Management
   - Institute of Water Resources Engineering and Management

- Center of Excellence in Arts and Design
- Department of Architecture
- Institute of Petroleum and Natural Gas Engineering
- Department of Metallurgical Engineering
- Department of Mining Engineering

2. Provided research guidance to Graduate and Undergraduate students.

3. Demonstrating Laboratory and Field Experiments.

4. Designed and developed curriculum for Water Resources Engineering courses.

5. Provided assistance in teaching and research activities being carried out at the Institute during Teaching and Research Assistantship at the Institute of Water Resources Engineering and Management (IWREM**).**

B) RESEARCH PROFICIENCY

- Associated with research pertaining to the field of Groundwater Hydrology with reference to Doctoral degree. Developed various computer models in the framework of the numerical techniques of Genetic Algorithms and Finite Element Method for Parameter optimization and simulation of groundwater flow under steady-state and transient flow conditions.

- During the MS program the research in relation to the simulation of Pipe surge and Water hammer characteristics was carried out.

- Supervised research at Graduate and Undergraduate level pertaining to River hydraulics, Groundwater existence (quantity wise as well as quality wise), Parameter optimization, Water conservation, etc.

C) FIELD EXPERIENCE

Supervised repair and maintenance works of surface drains at the Lower Sindh Drainage Division Thatta, Irrigation and Power Department, Government of Sindh.

D) ADMINISTRATIVE RESPONSIBILITIES

- **Convener, Curriculum Review Committee**

- **Convener, Center for Internships, Trainings and Employment (CITE)**

- **Industry Academia Linkage Coordinator (IALC)**

- **Convener, Study Tour Committee**

- **Member University Purchase Committee**

- **Professor In-charge, Fluid Mechanics and Hydraulics Laboratory**

- **Professor In-charge, Seminar Library**

PROFESSIONAL CONTRIBUTION

- Member, Board of Studies, Department of Civil Engineering, Isra University Hyderabad.
- Member, Nara Canal Area Water Board (NCAWB) Mirpurkhas.

CONFERENCES/WORKSHOPS MANAGED

- Organizer and Member Technical Committee, "2nd International Conference for Sustainable Developments in Civil Engineering 2019", organized by Department of Civil Engineering, MUET Jamshoro.
- Member Editorial Board and Technical Committee, International Conference on Civil, Architectural and Environmental Engineering (ICCAEE 2019) Auckland, New Zealand.
- Member Program Committee, 7th Brunei International Conference on Engineering and Technology 2018 (BICET-2018), Brunei Darussalam.
- Convener, Printing and Publishing Committee, "International Conference for Sustainable Developments in Civil Engineering 2017": Edited the Abstract Book and Proceedings, organized by Department of Civil Engineering, MUET Jamshoro.
- Organizer, "International Seminar/Workshop on DESIGN OF TALL BUILDINGS: Trends and Advancements for Structural Performance", Department of Civil Engineering, MUET Jamshoro, November 2017.

TRAININGS PROVIDED

- Resource person for One Day Seminar on "History and Future of Indus Basin: Connecting water to Culture, Economy and Technology" organized by Mehran University Civil Engineer's Society (Feb 08, 2017)
- Resource person for Two Days Training Workshop on "Effect of Coal Mining on Thar Groundwater Resources" organized by MM Pakistan (Pvt.) Ltd. in collaboration with Coal and Energy Development Department, Government of Sindh (May 19-20, 2014)
- Resource person for One-month training under Benazir Bhutto Income Support program on "Hydraulics and Design of Bridges, Culverts & Causeways" organized by Works and Services Department, Government of Sindh (2007, 2008 and 2009)

TRAININGS OBTAINED

- Massive Open Online Course on Procurement developed by Sindh Public Procurement Regulatory Authority, Government of Sindh (Completed on Apr 06, 2020)
- Capacity Building Workshop on Developing SAR as per HEC Accreditation Manual 2014 for OBE&A Implementation, organized by MUET Jamshoro in collaboration with Pakistan Engineering Council (Dec 05, 2017)

- Training of Trainers (TOT) on Professional Development of Mehran University Students organized by Mehran University Institute of Science and Technology Development supported by Australia Awards (August 08, 2017)

- "Entrepreneurship and Business Opportunity Assessment for Engineers" by Center of Professional Excellence, NED University of Engineering and Technology Karachi (Feb 20, 2016), Credit Points 1.0

- "Integrated Water Resources Modeling Workshop on River System Modelling in the Indus Basin" by CSIRO-eWater Australia (Mar 14-18, 2016)

- "Effective Teaching" organized by USPCAS-W MUET and University of Utah (Jun 7-8, 2015)

- "Flood Forecasting" organized by IWREM MUET Jamshoro sponsored in collaboration with Sindh Water Sector Improvement Project (WSIP), Government of Sindh (May 28-30, 2015)

- "Integrated Water Resources Modeling Workshop on Rainfall-Runoff Modeling for the Upper Indus Basin" by CSIRO-eWater Australia (May 4-8, 2015)

- "Integrated Water Resources Modeling Workshop on Water Resources Allocation Modeling of the Indus River Basin in Pakistan" by CSIRO-eWater Australia (Dec 15-19, 2014)

- "Best Irrigation Practices and Technologies" organized by IWREM MUET Jamshoro sponsored by ICARDA USDA (Nov 27-28, 2014)

- "Watershed Management and Irrigation Improvement in Rain-fed Areas" organized by IWREM MUET Jamshoro sponsored by ICARDA USDA (Nov 27-28, 2013)

- "Drip Irrigation Technology" by China Institute of Water Resources and Hydropower Research (IHWR) in Technical Collaboration between WAPDA and IHWR China (Mar 12-14, 2012)

- "Modeling Water Flow and Contaminant Transport in Soils and Groundwater" sponsored by HEC and organized by Sindh Agriculture University Tando Jam (Aug 6-11, 2010)

- "Visual MOD-FLOW Software" sponsored by HEC and organized by MUET Jamshoro (Sep 2-3, 2009)

- "HEC-RAS Software" sponsored by HEC and organized by NED University Karachi (Aug 17-18, 2009)

- "GAMBIT-FLUENT Software" sponsored by HEC and organized by MUET Jamshoro (Jul 30-Aug 10, 2009)

- Training course on "Modern Irrigation Techniques" organized by IIDE, MUET Jamshoro (Dec 2-3, 2008)

- Awareness workshop on "e-Journals, e-brary and OPACs" organized by Mehran UET Library and Online Information center MUET Jamshoro (Oct 29-31, 2007)

- "Efficient Irrigation Management Practices" organized under linkage program between Mehran University and Colorado State University sponsored by HEC and organized by MUET Jamshoro (Jul 10-12, 2007)

- Awareness workshop on "Electronic Journals and Electronic Library Resources" organized by MUET Jamshoro (Sep 16, 2004)

- "Statistical Process Control" organized by MUET Jamshoro (Sep 01 to Oct 14, 2003)

- "Understanding of MATLAB towards the solution of the physical problems" organized by MUET Jamshoro (Sep 3-5, 2002)

CONFERENCES/SEMINARS/WORKSHOPS/SYMPOSIUM ATTENDED

- The 7th Brunei International Conference on Engineering and Technology 2018 (BICET 2018), Universiti Teknologi Brunei, Bandar Seri Begawan, Brunei Darussalam.

- International symposium on "History and Future of Indus Basin: Connecting water to Culture, Economy and Technology" organized by Center of Water Informatics and Technology, Lahore University of Management Sciences (WIT-LUMS) (Jan 29, 2017)

- Key Stakeholders workshop on "Best Irrigation Practices and Technologies" organized by IWREM MUET Jamshoro sponsored by ICARDA USDA (Jan 22, 2015)

- International Conference on "Sustainable Water Management", as Author of the Research Article, organized by MUET Jamshoro in collaboration with NCEAC Uni. of Sindh, Sindh Agriculture Uni. Tando Jam Pakistan and Exeter University UK (Sep 15-17, 2010)

- National workshop on "Water Conservation" organized by IIDE MUET Jamshoro sponsored by HEC of Pakistan (Dec 28, 2009)

- One day Seminar on "Water Resources Depletion, Treatment and Recycling" organized by MUET Jamshoro in collaboration with NCEAC Uni. of Sindh, Sindh Agriculture Uni. Tando Jam Pakistan and sponsored by Oxfam Islamabad and British Council Karachi (Feb 16, 2009)

- 1st International Conference on "Engineering Management – Benchmarking Management Practices in Developing Countries" organized by MUET Jamshoro and sponsored by HEC of Pakistan and Pakistan Science Foundation (Mar 4-5, 2008)

- Fourth International Civil Engineering Congress, as Author of the Research Article, organized by The Institution of Engineers Pakistan Karachi Center (Nov 25-26, 2006)

RESEARCH ARTICLES

A. Published in International Journals

1. Mahessar A. A., Qureshi A.K., Kori S. M., Faoowui G. S., Memon, N. A., **Memon A. A.**, and Leghari K. Q. (2020), "Sediment Transport Dynamics in the Upper Nara Canal Off-

taking from Sukkur Barrage of Indus River", Engineering, Technology and Applied Science Research, Vol. 10, No. 6, pp. 6563-6569.

2. Bheel V. M., Shaikh A. A., **Memon A.A.**, Awan S. K. and Talpoor M. A. (2020), "Development of Inverse Mathematical Model of Rouse Formula to Estimate Suspended Sediment Concentration Along Width of Channel", INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY, Vol. 13(04), pp. 460–474, DOI: 10.17485/ijst/2020/v13i04/149629.

3. Magsi M. A., Kori S.M., Soothar R.K., **Memon A.A.**, Laghari K.Q. (2019), "Evaluate the effect of different rates of super absorbent polymer (SAP) on soil properties and yield components of sesame crop with desert soil", International Journal of Biosciences, Vol. 14, No. 5, pp. 31-40.

4. Kori S.M., Mahesar A.A., Channa M., **Memon A.A.**, Kori A.R. (2019), "Study of Flow Characteristics Over a Rounded Edge Drop Structure in Open Channel", Engineering, Technology & Applied Science Research, Vol. 9, No. 3, pp. 4136-4139.

5. **Memon, A.A.**, Pathan, A.A., Kori, S.M. and Leghari, K.Q. (2018), "Bridging The Gap Between Water Potential and Water Utilization For Bazkhando Weir Command", The 7th Brunei International Conference on Engineering and Technology 2018 (BICET 2018), Universiti Teknologi Brunei, Bandar Seri Begawan, Brunei Darussalam.

6. Pathan A.A., **Memon A.A.**, Akhund M. A., Brohi K., Shah A. (2018), "Reutilizing Potentials of Ablution Water for Sustainable Living", The 7th Brunei International Conference on Engineering and Technology 2018 (BICET 2018), Universiti Teknologi Brunei Brunei Darussalam.

7. **Memon, A. A.**, Leghari, K. Q., Pathan, A. F. H., Khatri, K. L., Shah, S. A., Pinjani, K. K., Soomro, R. and Ansari, K. (2013), "Design and Evaluation of Dadu Canal Lining for Sustainable Water Saving", Journal of Water Resource and Protection, Vol. 5, No.7, pp. 689-698. (Google Impact factor: 1.0)

8. Khatri, K. L., **Memon, A. A.**, Shaikh, Y., Pathan, A. F. H., Shah, S. A., Pinjani, K. K., Soomro, R., Smith, R. and Almani, Z. (2013), "Real-Time Modelling and Optimisation for Water and Energy Efficient Surface Irrigation", Journal of Water Resource and Protection, Vol. 5, No.7, pp. 681-688. (Google Impact factor: 1.0)

9. Khatri, K., Shah, S. A., Pathan, A. F. H., Shams, B., **Memon, A. A.**, Hussain, F. and Pinjani, K. K. (2013), "Real-Time Computer Analytical Application in Pressure Transient Analysis of Petroleum Reservoirs", International Journal of Geosciences, Vol. 4, No.8, pp. 1186-1192. (Google Impact factor: 0.84)

B. Published in National Journals

1. **Memon, A. A.**, Almani, Z. A., Pathan, A. F. H., Ansari, K., Khatri, K. L. (2013), "Optimal Identification of Well Parameters Using Genetic Algorithm", Sindh University Research Journal (Sci. Ser.) Vol. 45 (3), pp. 565-568.

2. **Memon, A.A.**, Pathan A. F. H., Almani, Z. A., Shah, S. F. and Shaikh, A. A. (2013), "Simulation of Transient Groundwater Flow in a well Penetrating Confined Aquifer in Southern Rohri Command", Sindh University Research Journal (Science Series), Volume 45, No. 1, pp.07-10.

3. **Memon, A.A.**, Memon, N.A., and Ansari, K. (2012), "Determination of Turbulence Coefficient using Genetic Algorithms", Mehran University Research Journal of Engineering & Technology, Volume 31, No. 4, pp. 651-658.

4. **Memon A. A.**, Babar M. M. and Kori S. M. (2007), "Optimal Identification of Aquifer Parameters using Genetic Algorithms", Mehran University Research Journal of Engineering and Technology, Mehran University of Engineering and Technology, Jamshoro, Vol. 26, Iss. 2, pp. 97-110.

5. Almani, Z. A., **Memon A.A.**, Habib, A. F., Lal, K. and Shah S. F. (2013), "3D Numerical Modeling of Liquifaction-induced Settlements and its Mitigation", Sindh University Research Journal (Science Series), Volume 45, No. 2, pp. 301-304.

6. Ansari, K., **Memon, A.A.** and Memon, N.A. (2012), "Development of Bed Ridges in Open Channels and their Effects on Secondary Currents and Wall Shear", Mehran University Research Journal of Engineering & Technology, Volume 31, No. 3, pp. 503-516.

7. Almani, Z. A., **Memon, A.A.**, and Memon, N.A. (2012), "Effects of the Length of Jet Grouted Columns and Soil Profile on the Settlement of Shallow Foundations", Mehran University Research Journal of Engineering & Technology, Volume 31, No. 3, pp. 517-528.

8. Nindwani, B.A., Lashari, B.K., **Memon, A.A.**, Laghari, K.Q., Hammad, H.M., and Farhad, W. (2014), "Impact of Drainage Water Use for Crop Irrigation", Science International, Vol. 26, No. 1, pp. 273-278.

9. Pathan, A. F. H., Almani. Z. A. and **Memon A. A.** (2013), "A Conditioned Model for Choice of Mode under Information", Mehran University Research Journal of Engineering & Technology, Volume 32, No. 3, pp. 477-494.

10. Almani, Z. A., Pathan, A. F. H. and **Memon, A.A.** (2013), "Diffusion Anisotropy Through Soft Clay", Sindh University Research Journal (Science Series), Volume 45, No. 1, pp.171-176.

11. Almani, Z. A., Pathan, A. F. H. and **Memon, A.A.** (2013), "Effect of Earthquake Characteristics on Liquefaction Resistance of Reinforced Ground", Sindh University Research Journal (Science Series), Volume 45, No. 1, pp.131-136.

12. Almani, Z. A., Pathan, A. F. H. and **Memon, A.A.** (2013), "Heavy Metal Diffusion through Soft Clay under High Hydraulic Gradients", Mehran University Research Journal of Engineering & Technology, Volume 32, No. 2, pp. 307-318.

13. Pathan, A F. H., Ansari, K. and **Memon A. A.** (2013), "Modelling Choice of Information Sources", Mehran University Research Journal of Engineering & Technology, Volume 32, No. 2, pp. 287-306.

14. Ansari, K., Memon, N. A. and **Memon, A.A.** (2012), "The setup and validation of a Numerical Model for Wall Shear in Trapezoidal Open Channels", Sindh University Research Journal (Science Series), Volume 44, No. 4, pp.613-616.

15. Almani, Z. A., Ansari, K. and **Memon, A.A.** (2012), "Mechanism of Liquefaction-Induced Large Settlements of Buildings", Mehran University Research Journal of Engineering & Technology, Volume 31, No. 4, pp. 635-650.

16. Almani, Z. A., Memon, N.A. and **Memon, A.A.** (2012), "Stiff Columns as Liquefaction Mitigation Measure for Retrofit of Existing Buildings", Mehran University Research Journal of Engineering & Technology, Volume 31, No. 4, pp. 659-668.

17. Ansari, K., Memon, N. A., Pathan, A. F.H. and **Memon, A.** (2013), "Analysis of the Runoff Generated due to the 2011 Monsoon Rainfall in Sindh using HEC-HMS", Sindh University Research Journal (Science Series), Volume 45, No. 1, pp.159-162.

18. Pathan, A. F. H., Ansari, K., Almani, Z. A., **Memon, A. A.**, Memon, N. A. (2013), "Choosing Information Sources: A Modeling Framework", Sindh University Research Jourournal (Sci. Ser.) Vol. 45 (3), pp. 559-564.

C. Presented in International Conferences

1. Ansari J. and **Memon A. A.** (2019), "Determination of Aquifer Characteristics of Muhammad Khan Distributary Command Area using AQTESOLV", International Conference on Sustainable Development in Civil Engineering, MUET, Pakistan (December 05-07, 2019)

2. Ansari A. M., Shah A. A., Khaskhely M. K., **Memon A. A.**, Pitafi A. (2019), "Innovation to Enhance Efficient and Sustainable Use of Irrigated Land", International Conference on Sustainable Development in Civil Engineering, MUET, Pakistan (December 05-07, 2019)

3. **Memon A. A.,** Soomro A. R. and Babar M. M. (2017), "Command Area Development of Bazkhando Weir", International Conference for Sustainable Developments in Civil Engineering 2017", organized by Dept. of Civil Engineering, MUET Jamshoro.

4. Qureshi, A. G., Babar M. M. and **Memon A. A.** (2017), "Modeling of Optimum Discharge Capacity of Sukkur Barrage", International Conference for Sustainable Developments in Civil Engineering 2017", organized by Dept. of Civil Engineering, MUET Jamshoro.

5. **Memon A. A.** and Babar M. M. (2010), "Sustainable Groundwater Management using Genetic Algorithms", International conference on Sustainable Water Management, Mehran University of Engineering and Technology, Jamshoro.

6. **Memon A. A.** and Babar M. M. (2006), "Identification of Aquifer Parameters using Genetic Algorithms – An Inverse Approach", 4th International Civil Engineering Congress, Karachi.

D. Presented in National Conferences/Workshops

1. **Memon A. A.** and Babar M. M. (2006), "Determination of Aquifer Parameters using Genetic Algorithms", National Workshop on Integrated Water Resources Management: An Opportunity towards Sustainable Irrigation, Agriculture and Environment, Mehran University of Engineering and Technology, Jamshoro.

COMPUTER SKILLS

- Office Suit: MS Office (Word, Excel, PowerPoint), MS Teams
- Operating Systems: MS Windows 7, 8.1 and 10
- Graphics Packages: IDEAS and TecPlot
- Engineering Software: MATLAB, GAMBIT-FLUENT, Visual MOD-FLOW and HEC-RAS
- Programming languages: C++ and FORTRAN 90/95

LANGUAGES

- English, Urdu and Sindhi: speaking, reading and writing.