

MOHAMMED AL-TOFAN, PH.D.,PE

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16th Shatt Al-Arab Street-Basrah-Iraq

EDUCATION:

- Ph.D. – Civil Engineering** – University of South Carolina, USA – 2019
- M.S. Project Management**– University of South Carolina, USA – 2017
- B.A. – English Language**– University of Basrah, Iraq – 2010
- M.Sc. – Civil Engineering** –University of Basrah, Iraq – 2006
- B.Sc. – Civil Engineering** – University of Basrah, Iraq – 2002

PROFESSIONAL EXAMINATIONS

- Licensed Professional Engineer (PE)- South Carolina Board of Engineers- License Number 38609
- Licensed Professional Engineer (PE)- Michigan Bureau of Professional Licensing - License Number 6201309836
- FE (EIT) License
Verification link (<https://account.ncees.org/rn/1846564-1059826-6098d83>)

MEMBERSHIPS

American Society of Civil Engineers (ASCE)
Environmental and Water Resources Institute (EWRI)
Utility Engineering and Surveying Institute (UESI)
Transportation and Development Institute (TDI)

AWARDS

- 2018 Deepal S. Eliatamby Endowed Fellowship–University of South Carolina.

PROFESSIONAL QUALIFICATIONS

- 12+ years of Civil Engineering increasing responsibility in utilities, right of way, and public works.
- Skills in engineering management, portfolio management, reliability and risk management, marketing, financial accounting, communication, legal aspects, competition through people and organizational behavior.
- Excellent engineering qualifications across many core disciplines – civil, mechanical, environmental, hydraulic, sewage and transportation.
- Outstanding skills in project design, engineering, cost estimating, and scheduling. Skilled PC user.
- Equally extensive experience in field project management and crew training/leadership.
- Supervisory responsibility for up to 5 design, estimating, field and project management personnel.
- Experienced coordinator among different stakeholders including government agencies, elected officials, and local government representatives.
- RFP interviews negotiation and analysis of competitors.
- Negotiation skills on critical legal issues including condemnations and court procedures.

TEACHING EXPERIENCE (IN UNIVERSITY OF BASRAH, SHATT AL-ARAB UNIVERSITY, AND UNIVERSITY OF SOUTH CAROLINA)

- Sanitary Engineering.
- Engineering Mathematics.
- Highway Engineering.
- Computer Lab.
- Hydraulic Structures.
- Engineering Drawing.
- Statics.
- Dynamics.

SOFTWARES EXPERIENCE

- Microsoft office applications (Excel, Word, Power Point)

- AutoCAD Civil 3D.
- Micro Station (beginner).
- HydroCAD, StormCAD, and Culvert Master.
- FHWA Hydraulic Tool Box.
- Programming and coding (Matlab and Fortran).
- Ansys.
- GIS Applications- ArcHydro Extension.

PH.D. COURSES AT USC-USA

All Grade-A, GPA-4

- ✓ Fluid Transients
- ✓ Engineering Hydrology
- ✓ Advanced Engineering Hydrology
- ✓ Subsurface Hydrology
- ✓ Boundary Layer Theory and Applications
- ✓ Open Channel Flow
- ✓ Teaching Assistant Development
- ✓ Advanced Numerical Methods in Engineering
- ✓ Sediment Transport and River Mechanics.

M.S. COURSES AT USC-USA

All Grade-A, GPA-4

- ✓ GIS and Remote Sensing in Civil Eng.
- ✓ Management of Engineering Projects
- ✓ Engineering Risk and Reliability
- ✓ Management Function for Engineering Communicators
- ✓ Financial Accounting
- ✓ Competing Through People
- ✓ Legal Aspects of Engineering
- ✓ Marketing.
- ✓ FE (E.I.T.) Exam Preparation.

**Extra Courses-American Society of Civil Engineers (ASCE) with Course Numbers
(Certificates available on request)**

- Flood Resistant Design and Construction (7501W2019)
- Seismic Assessment and Design of Water and Sewer Pipelines (AWI1116102)
- From Engineering to Entrepreneurship: How to Prepare For, Start and Manage Your Own Engineering firm (AWI022715)
- Introduction to Runoff Analysis Using Unit Hydrographs (AWI072511)
- Public Speaking - How to Plan, Design, and Deliver a Presentation (AWI082818)
- Sustainable Water Reuse & Recycling (AWI102513)
- An Introduction to HEC-RAS Culvert Hydraulics (AWI010511)
- An Introduction to Sediment Transport Modeling Using HEC-RAS (AWI031414)
- Damping and Motion Control in Buildings and Bridges (AWI061812)
- Risk Based Condition Assessment and Rehabilitation Planning for Pressure Pipes (AWI050715)
- Avoiding Roundabout Design Failures: An Interactive Approach to Identifying Error, and Finding Solutions (AWI053118)
- If You Haven't Planned It - You Can't Control It (AWI011811)
- Roadway Construction Quality Control and Inspection Techniques for Concrete Surfaced Pavements (AWI031516)
- PE Civil: 14-Part Water Resources and Environmental Depth (Individual) (8404ILW2020)
- To Bayes or Not To Bayes (AWI092613)
- Engineer Your Own Success: 7 Key Elements to Creating an Extraordinary Engineering Career (AWI101112)
- Sustainable Geotechnical Applications: Tire Derived Aggregate in Geotechnical and Environmental Applications- Part V of VI (AWI062811)
- Navigation Engineering - Understanding the Basics (AWI061711)

- Preparing and Implementing Construction Site Storm Water Pollution Prevention Plans (AWI102711)
- Radar Rainfall Estimation for Modeling and Design (AWI013114)
- Pipeline Condition Assessment Using Broadband Electromagnetic (BEM) Testing (AWI042816)
- Beaver Dam Analogue Design: Using the Tool (AWI081720)
- The Five Habits of Highly Effective Marketers (AWI121010)
- Complete Streets Design (AWI120814)

PH.D. DISSERTATION TOPIC

Health Monitoring of Liquid Pipelines – (Leaks and Blockages Detection Using Transient Flow and Acoustic Emission)

SAMPLE PUBLICATIONS/CONFERENCES

Al-Tofan, M., Elkholy, M., Khilqa, S., Caicedo, J., and Chaudhry, M. H. (2018). Use of Lower Harmonics of Pressure Oscillations for Blockage Detection in Liquid Pipelines. *Journal of Hydraulic Engineering*, 145(3), 04018090

Al-Tofan, M., Mohamed Elkholy, Sahad Khilqa, Lateef Assi, Rafal Anay, M. Hanif Chaudhry (2018). Blockage Detection in Pipes by continuous emission of acoustic signal, *60th meeting of the Acoustic Emission Working Group*.

Khilqa, S., Elkholy, M., Al-Tofan, M., Caicedo, J., and Chaudhry, M. H. (2019). Uncertainty Quantification for Damping in Transient Pressure Oscillations. *Journal of Water Resources Planning and Management*. (in press).

Khilqa, S., Elkholy, M., Al-Tofan, M., Caicedo, J., and Chaudhry, M. H. (2019). Damping in pressurized flows. *Journal of Hydraulic Engineering*. (in press).

Khilqa, S., Elkholy, M., Al-Tofan, M., Caicedo, J., & Chaudhry, M. H. (2017). Damping rate of transient oscillations in pressurized closed conduits. *E-proceedings of the 37th IAHR World Congress*. August 13 – 18, 2017 - Kuala Lumpur, Malaysia.

Khudhair, K. M., Sabhan, M. H., & Naeem, S. A. (2013). Using Fuzzy Logic to Evaluate Shatt Al-Arab River Water Quality for Irrigation Purpose. *Basrah International Conference for Civil Engineering*. April 2013 – Basrah – Iraq.

Al-Tofan, M., Elkholy, M., Khilqa, S., Caicedo, J., and Chaudhry, M. H. (2019). Blockage Detection in Liquid Pipelines. *Utilities Engineering and Surveying Institute (UESI) Pipeline 2019 Conference*. July 21-24, 2019 - Nashville, Tennessee.

WA Alawadi, M Al-Tofan, A Al-Suraifi, WS Al-Rekabi (2023). 2D hydraulic modeling for predicting water depth and velocity changes in Al Hawizeh wetland in response to dry conditions. *Modeling Earth Systems and Environment*. *Journal Modeling Earth Systems and Environment*. Volume 9, Issue 1, Pages 631-646, Publisher Springer International Publishing.

Alhasan, A. A., Alyounis, M., & Al-Tofan, M. H. (2025). Impact of Contraction Scour in Tigris River on Al-Nuhairat Bridge in Basrah Governorate. *Basrah Journal for Engineering Sciences*, 25(2), 75-82. <https://doi.org/10.33971/bjes.25.2.8>

Alhasan, A. A., Alyounis, M., & Al-Tofan, M. H. (2025). Impact of Abutment Scour on Al-Nuhairat Bridge in Basrah Governorate. *Civil Engineering Science and Technology Journal*, 1(1), 32-37. <https://doi.org/nan>

Khudair, Kifah M., Khudier, Ahmed S. and Al-Tofan, Mohammed H.. "Exploitation of landfill gas vs refuse-derived fuel with landfill gas for electrical power generation in Basrah City/South of Iraq" *Open Engineering*, vol. 15, no. 1, 2025, pp. 20250133. <https://doi.org/10.1515/eng-2025-0133>