

Curriculum Vita

MEDHAT M.H. EL-ZAHAR

Associate Professor

Department of Civil Engineering

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PROFESSIONAL PROFILE

- Associate Professor specializing in **Environmental Engineering** with an emphasis on **Sanitary and Environmental Hydraulics** with more than 18 years' experience in teaching at the undergraduate and graduate levels.
- Extensive experience in the planning, design and implementation of water supply and sanitation networks and concrete and metal structures.
- Accredited Consultant for Design & Supervision of Reinforced Concrete Structural Projects.

RESEARCH INTERESTS

- Developing new techniques for the treatment and re-use of sludge, a by-product of water treatment facilities.
- Developing innovative techniques to treat domestic and industrial wastewater using greenhouse-gas emissions.
- Improving and utilizing optimal designs for sedimentation and filtration units.
- Developing and studying modern design models for water distribution networks.

DEGREES

- **Ph. D., Sanitary and Environmental Hydraulics (2003)**
Completed via a cooperative research program between Suez Canal University, Egypt, and the Kyushu Institute of Technology, Kitakyushu, Japan.
DISSERTATION: *Flotation and Dewatering of Waste Activated Sludge Using Carbon Dioxide*
- **M.Sc., Environmental Hydraulics (1997)**
Suez Canal University, Port Said, Egypt
THESIS: *Improvement of Reliability of Water Distribution Networks*
- **B. Sc. Civil Engineering Department (1992)**
Suez Canal University, Port Said, Egypt
Graduated top of graduating class

ACADEMIC EXPERIENCE

Associate Professor, Port Said University, Egypt, 05/2003-present

- Teach Sanitary and Environmental Engineering, Sanitary Compartments, Water Supply Engineering, Industrial Wastewater Systems, Basics of Environmental Science to classes averaging 100-150.

Adjunct Associate Professor, Head of Department, Giza Higher Institute of Engineering and Technology, Tamooh, Giza, Egypt, 2014-2020.

- Teach Sanitary and Environmental Engineering, Water Supply Engineering, Civil Engineering Drawing to classes averaging 300 students in groups.

Adjunct Assistant Professor, Giza Higher Institute of Engineering and Technology, Tamooh, Giza, Egypt, 2012-2013.

- Teach Sanitary and Environmental Engineering, Water Supply Engineering, Theory of Structures, Civil Engineering Drawing to classes averaging 300 students in groups.

Adjunct Assistant Professor, Higher Institute of Engineering and Technology, New Damietta, Egypt, September, 2010-August, 2012, then 2014.

- Teach Sanitary and Environmental Engineering, Water Supply Engineering, Surveying and Civil Engineering Drawing, Basics of Building Construction, Hydrology and Irrigation, and Design of Irrigation Structures, to classes averaging 300 students.

Adjunct Associate Professor, Arab Academy for Science, Technology & Maritime Transport, Smart Village, Giza, Egypt, 09/2018-Present

Adjunct Assistant Professor, Higher Technological Institute, Tenth of Ramadan, Egypt, 09/2008-2019

Assistant Professor, Port Said University, Egypt, 05/2003-2014

- Teach Sanitary and Environmental Engineering, Sanitary Compartments, Water Supply Engineering, Industrial Wastewater Systems, Surveying 1, Surveying 2, Basics of Environmental Science to classes averaging 100.

Visiting Researcher, Kyushu Institute of Technology, Kitakyushu, Japan, 08/1999-02/2002

- Research PhD topic based on developing innovative research on waste-water treatment.

Lecturer, Suez Canal University, Port Said, Egypt, 1997-2003

Teaching Assistant, Suez Canal University, Port Said, Egypt, 1997-2003

Demonstrator, Suez Canal University, Port Said, Egypt, 1995-1997

Research Student, Suez Canal University, Port Said, Egypt, 1992-1995

ADDITIONAL COURSES TAUGHT AS TEACHING ASSISTANT

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|-----------------------------------|----------------------------------|
| • Reinforced Concrete Structures | •Sanitary and Environmental Eng. |
| • Fluid Mechanics | •Water Supply Engineering |
| • Engineering Geology | •Industrial Wastewater Systems |
| • Hydraulics | •Sanitary Compartments |
| • Steel Structures | •Civil Engineering Drawing |
| • Irrigation and Drainage Systems | •Surveying |
| • Design of Irrigation Structures | •Theory of Structures |

SKILLS

- Effective communication skills
- Engaging lecture style
- Strong team player
- Strong organizational skills
- Ability to relate to students

- Effective project and time management skills
- Ability to supervise post-graduate students
- Self-motivated and able to motivate students

PRESENTATIONS AND CONFERENCES

- Twenty First International Water Technology Conference, IWTC, Ismailia, Egypt, June 28-29, 2018.
- 4th International Conference on Environmental Studies and Research "Smart Sustainable Environment", Environmental Studies and Research Institute, Sadat City, Held in Sharm Elsheikh, Egypt, , March, 27-29, 2017.
- ICOGE, International Conference on Oil, Gas, and Environment, Cairo, Egypt, 21-22, October, 2011
- ICEST Conference, 23-25 April 2010, Bangkok, Thailand.
- ENVIRO Conference, 7-12 April 2002, Melbourne, Australia.
- FILTECH EUROPA International Conference and Exhibition, 16-18 October 2001, Düsseldorf, Germany.
- ASIAN WATERQUAL, First IWA Asia-pacific Regional Conference, 12-15 September 2001, Fukuoka, Japan.
- Water Supply and Water Quality Conference, 11-13 September 2000, Krakow, Poland.

PROFESSIONAL AFFILIATIONS

- *Egyptian Syndicate of Professional Engineers*
- *Egyptian Society for Civil Engineers*
- *Japanese Society for Civil Engineers, 1999-2002*
- *Staff social club, Port Said University*
- *KSCE Journal of Civil Engineering (Reviewer)*
- *EER Journal of Environmental Engineering (Reviewer)*
- *Environmental Geotechnics Journal (Reviewer)*

PROFESSIONAL DEVELOPMENT

Faculty and Leadership Development Projects, University of Education Development Center, Suez Canal University, Egypt

- *Presentation Skills*, May, 16-19, 2005.
- *Decision-making and Problem-solving*, April, 1-3, 2006
- *University Legal Issues*, May, 6-8, 2006
- *Managing Effective Meetings*, June, 12-13, 2006
- *Quality assurance and Accreditation*, June, 19-20, 2006
- *Accreditation Hours*, November, 5-7, 2006

- *Teaching Evaluation, December, 11-13, 2006*

HIGHLIGHTS OF STRUCTURAL/ENVIRONMENTAL ENGINEERING WORK HISTORY

- Head Designer and Supervisor of rainwater drainage network for New Damietta Harbor, Environmental Society Service Center, Port Said University, March-September 2010 – 2014 - The construction is done.
- Owner of El-Zahar Consultancy and General Manager of ELZAHAR Consultants Group for Civil and Environmental Engineering, May 2002-present. Selected projects valued from \$400,000-4.5,000,000 US dollars:
 - Mera Tower, Area 3,4 Khan Elkhalily, Port Said, 2017
 - Eman Tower, Area 51, Khan Elkhalily, Port Said, 2016
 - Zeina Tower, 28 Elgeesh Street, Port Said, 2014
 - Mecca Tower, Port-Ex, Land No. 124, Port Said, 2013
 - High Class 4 Tower, 16 Hosny Khalaf, Zone 6, Nasr City, Cairo, 2013
 - Abou-El-Enen Tower, Saad Zaghlol and El-Gomhouria Street, Port Said, 2011
 - El-Montazah Tower, Saad Zaghlol and El-Menia Street, Port Said, 2010
 - El-Farouk Tower, 10 and 12 Streets, Port Fouad, Port Said, 2009
 - Zamzam Tower, Saad Zaghloul and Mokhtar Said Street, Port Said, 2008
 - High Class 2 Tower, El-Gomhouria and Ahmed Maher Street, Port Said, 2006
 - El-Andalos Tower, 5 Abbas and Riyadh Street, El-Arab Area, Port Said, 2003
- Head Designer of water distribution projects and sewage networks in new development zones around Ismailia, Zagazig, and Sinai for Port Said Consultant Center, owned by Prof. Dr. Eng. Mohamed Ibrahim Balah, 1995-1999.
- Head Structural Designer of projects in Port Said, Ismailia, Zagazig, new cities, and Sinai for Port Said Consultant Center, owned by Prof. Dr. Eng. Mohamed Ibrahim Balah, 1994-1999.
- Main Designer, ELARABY Consultancy, owned by Dr. Eng. Ibrahim Ahmed El-Araby, 1992-1995.

PUBLICATIONS

- Sara Elhady, Mohamed Bassyouni, Ramadan A. Mansour, Medhat H. El-Zahar, Shereen Abdel-Hamid, Yasser Elhenawy and Mamdouh Y. Saleh, "Oily Wastewater Treatment Using Polyamide Thin Film Composite Membrane Technology", *Membranes* 2020, 10(5),84; <https://doi.org/10.3390/membranes10050084>, April 28, 2020.
- Sarah elhady, M. Bassyouni, R. A. Mansour, Medhat H. Elzahar, Mamdouh Y. Saleh, "Developed Method for Treatment of Industrial Wastewater from Edible Oil Industry using Membrane Technology", *International Journal of Engineering and Advanced Technology (IJEAT)* ISSN: 2249 – 8958, Volume-9 Issue-3, February, 2020
- EL- Dosoky SH. M., El-Zahar M. H., Saleh M.Y., "The Usage of Date Pits for Treatment of Thickened Sludge", *Journal of Waste Management and Disposal, SCHOLARINA*, ISSN: 2641-8827, April 25, 2019.

- M. Yousef Saleh, M. El-Zahar, S. EL- Dosoky, "The Usage of Nitrogen Gas and Alum for Sludge Dewatering", ICAPCMT 2019, International Conference on Agricultural Pollution Control, Management and Technology Conference, Venice, Italy, April 11-12, 2019.
- Mamdouh Y. Saleh, Medhat H. Elzahar, Nehal M. Ashour, "Application of Life Cycle Cost Analysis Method on Wastewater Treatment Plants In Rural Egypt", Twenty First International Water Technology Conference, June 28-29, 2018, Ismailia, Egypt.
- Mohamed Gabr, Medhat El-Zahar, "Study of the Quality of Irrigation Water in South-East El-Kantara Canal, North Sinai, Egypt", International Journal of Environmental Science and Development, IJESD June 2018, Vol.9(6): 142-146 ISSN: 2010-0264, doi: 10.18178/ijesd.2018.9.6.1089.
- Mamdouh Y. Saleh, Medhat H. Elzahar, Moustafa H. Omran, 2017 "Industrial Wastewater Treatment Improvements Using Limestone", 4th International Conference on Environmental Studies and Research "Smart Sustainable Environment", Environmental Studies and Research Institute, Sadat City, Held in Sharm Elsheikh, Egypt, March, 27-29, 2017.
- Mamdouh Y. Saleh, Medhat H. Elzahar, Nehal M. Ashour 2016 "A Study To Distinguish Between Wastewater Treatment Plants In Rural Egypt", Port Said Engineering Research Journal, Port Said University, Port Said, Egypt, Accepted for publication, October, 2016.
- Mamdouh Y. Saleh, Medhat H. Elzahar, Moustafa H. Omran, 2015 " Industrial Wastewater Treatment Improvements Using Activated Carbon", International Conference on Environmental Science and Engineering, Miami, USA, March, 10-11, 2015.
- Mamdouh Yousef Saleh, Gaber El Enany, Medhat Elzahar, Mohamed Z. Elshikhipy 2014 " Industrial Wastewater Treatment Using High Rate Activated Sludge and Alum Additive", International Journal of Environmental Science and Development, Singapore, ISSN: 2010-0264, Vol. 5, No. 6, Accepted April, 22, 2014, Published December, 2014.
- Mamdouh Yousef Saleh, Gaber El Enany, Medhat Elzahar, Eng. Mohamed Z. Elshikhipy, Rana Hamouda 2014 "Removal of Lead in High Rate Activated Sludge System", World Academy of Science, Engineering and Technology, Vol. 8, 2014-03-01.
- Mamdouh Yousef Saleh, Gaber El Enany, Medhat Elzahar, Mohamed Z. Elshikhipy 2014 "Use of Alum for Removal of Total dissolved Solids and Total Iron in High Rate Activated Sludge System", International Journal of Environmental Engineering Science and Technology Research, Vol. 2, No. 3, March 2014, PP: 1 - 12, ISSN: 2326 – 3113, on March 2014.
- Mamdouh Y. Saleh, Shaymaa EL-Dosoky, Medhat Elzahar 2012 "Wastewater Treatment by Oxidation Ponds in Port Said Treatment Plant (Control of Algae)", Port Said Engineering Research Journal, Vol. 16, No. 2, September 2012, PP: 109-118, ISSN: 111-6603, on September, 2012, Port Said, Egypt.
- Mohamed Somaida, Yasser Hamed, Medhat Elzahar, Mahmoud Sharaan 2012"Optimizing Pumping Rate in Pipe Networks Supplied by Groundwater Sources", KSCE Journal of Civil Engineering, South Korea, on November, 12, 2012, South Korea.
- Mohamed Somaida, Medhat Elzahar, Mahmoud Sharaan 2011"A suggestion of Optimization Process of Water Pipe Networks Design", 2011 International Proceedings of Chemical, Biological & Environmental Engineering on Environment and Bioscience, ISSN 2010-4618, Vol. 21, pp. 68-73 IACSIT PRESS, Singapore, Presented in ICOGE, International Conference on Oil, Gas, and Environment, Cairo, Egypt, 21-22, October, 2011.
- Mohamed Somaida, Medhat Elzahar, Mahmoud Sharaan 2011 "The Use of Computer Simulation and Analytical Solutions for Optimal Design of Pipe Networks Supplied from a Pumped-Groundwater Source," Port Said Engineering Research Journal, Port Said University, Port Said, Egypt.
- Medhat El-Zahar 2010 "Dewatering Waste Activated Sludge Using Greenhouse-gas Flotation Followed by Centrifugation," International Journal of Environmental Science and Development (IJESD), ISSN 2010-0264, Vol. 1, No. 2, pp. 199-205.

- Medhat El-Zahar 2010 “Dewatering Waste Activated Sludge Using Greenhouse-gas Flotation Followed by Centrifugation,” International Conference of Environmental Science and Technology, (ICEST), April 23-25, 2010, Bangkok, Thailand.
- Medhat El-Zahar 2009 “Dewatering Waste Activated Sludge Using Dissolved-gas Flotation Followed by Filtration”, International Water Association (IWA) publishing, Journal of Water and Climate change, ISSN: 2040-2244, Vol. 1, pp. 147-153, February 2010.
- Mamdouh Y. Salih and Medhat El-Zahar 2009 “Treatment Of Industrial Wastewater from Soap Noodles Factory By Flocculation And Flotation: a Case Study,” Port Said Engineering Research Journal, Suez Canal University, Port Said, Egypt, Vol. 14, No.(1) March 2010.
- M. El-Shekhiby, Medhat El-Zahar and M. Salih 2006 “Effect of Surface Loading Rate on The Facultative Oxidation Ponds,” Port Said Engineering Research Journal, Suez Canal University, Port Said, Egypt.
- M. El-Shekhiby, Medhat El-Zahar and M. Salih 2006 “Effect of Depth on The Facultative Oxidation Ponds,” Port Said Engineering Research Journal, Vol. 1, March, Suez Canal University, Port Said, Egypt.
- Medhat El-Zahar and K. Fujisaki 2004 “Flotation of Waste Activated Sludge by Use of a mixture of gases”, Port Said Engineering Research Journal, Vol. 1, March, Suez Canal University, Port Said, Egypt.
- Medhat El-Zahar 2003 “Flotation and Dewatering of Waste Activated Sludge Using Carbon Dioxide”, Ph.D. Dissertation submitted to The Faculty of Engineering, Suez, Canal University in a Joint supervision system between Japan and Egypt from 1999 to 2003.
- Medhat El-Zahar and K. Fujisaki 2002 “Flotation of Waste Activated Sludge by Use of Carbon Dioxide Gas”, Proceedings of ENVIRO 2002 International Conference and Exhibition, 7-12, April, Melbourne, Australia.
- Medhat El-Zahar, M. Salih and K. Fujisaki 2001 “Basic Study of Bubble Formation in Dissolved CO₂ Gas Flotation of Waste Activated Sludge”, Journal of Filtration Society, The transaction papers, Vol. 2, Issue 3, pp. 73-79, 2001-2002.
- Medhat El-Zahar, M. Salih and K. Fujisaki 2001 “Basic Study of Bubble Formation in Dissolved CO₂ Gas Flotation of Waste Activated Sludge”, FILTECH EUROPA International Conference and Exhibition, Vol. I, pp. 405-412, October, Dusseldorf, Germany.
- K. Fujisaki and Medhat El-Zahar, 2001 “Simplified Model for Dissolved Gas Flotation”, FILTECH EUROPA International Conference and Exhibition, Vol. I, pp. 413-420, October, Dusseldorf, Germany.
- K. Fujisaki and Medhat El-Zahar, 2001 “A Mathematical Model for the Flotation of Waste Activated Sludge” ASIAN WATERQUAL, First IWA Asia-Pacific Regional Conference, Vol. I, pp. 1001-1006, 12-15 September, Fukuoka, Japan.
- Medhat El-Zahar, M. Salih and K. Fujisaki 2001 “CO₂ Gas Flotation of Waste Activated Sludge Using Weak Vacuum Pressure with Thermal Treatment”, ASIAN WATERQUAL, First IWA Asia-Pacific Regional Conference, Vol. I, pp. 995-1000, 12-15 September, Fukuoka, Japan.
- Medhat El-Zahar, M. Takaninshi, M. Salih, K. Fujisaki and I. El-Hattab, 2000 “Experimental Studies on Flotation of Waste Activated Sludge Using Carbon Dioxide with Thermal Treatment”, Water Supply and Water Quality Conference IV, Vol. 1, pp. 649-659, 11-13 September, Krakow, Poland.
- Medhat El-Zahar, M. Salih, M. I. Balah and I. H. El-Hattab 1997 “Effect of Materials of Pipes and Age of Pipes on Water Distribution System Reliability”, Port Said Engineering Research Journal, Vol. 1, September, Suez Canal University, Port Said, Egypt.
- Medhat El-Zahar, M. Salih, M. I. Balah and I. H. El-Hattab 1997 “Improvement of Reliability of Water Distribution Network using Redundancy”, Port Said Engineering Research Journal, Vol. 1, September, Suez Canal University, Port Said, Egypt.