Mohamed N. Meshref

m.meshref@eng.asu.edu.eg

Highlights

- **Academic Roles:** Environmental Scientist/ Engineer / Researcher/Specialist
- **Academic Credentials:** PhD in Civil and Environmental Engineering, University of Alberta, Canada
- **Professional Affiliations:** ESS, Egypt | P.Eng., PEO, Canada
- **Personal:** Languages: English and Arabic |Detail Oriented and Proactive Professional

Key Qualifications

- 17 years of research, industrial and teaching experience in civil and environmental engineering field participating in several research and international projects in different sectors such as Municipality and Oil and Gas.
- Outstanding knowledge and understanding about water quality monitoring, contaminants control and removal, sustainable solutions, full scale applications, treatment technologies, rehabilitation, and environmental initiatives/ and assessments.
- Advanced written and oral communication, presentation, lecturing and technical reporting skills including: proposals, grants, research articles, preparing course materials, feasibility studies, tender documents, and specifications.
- Outstanding knowledge in water chemistry analysis, analytical procedures for contaminants detection such as liquid-liquid extraction, solid phase extraction as well as operating different analytical equipment.
- International experience at environmental consulting engineering firms in the design of infrastructures projects, water & wastewater treatment processes, technologies' evaluations, water quality monitoring, standards, water supply and wastewater systems.
- Excellent computer skills in software packages such as MS Office, Minitab, Origin, Civil3D, WaterCAD, and SewerCAD.
- Excellent background and basic skills in software packages such as MATLAB, R, and GIS.
- Dedicated, detail oriented and proactive professional who constantly upgrades his skills by learning new concepts.

Education

❖ ***2012-2017*** **Doctor of Philosophy,** Civil and Environmental Engineering, University of Alberta, Canada **Thesis Topic:** Application of Ozone assisted Processes in Oil Sands Process-Affected Water Treatment

- Identified the gaps and the lack of practicality in the current approaches of Oil Sands Process-Affected Water (OSPW) Treatment.
- Examined and designed different engineering solutions using sets of experiments for advanced oxidation processes to treat OSPW.
- Developed a conceptual design for several reactors to increase the levels of the effective hydroxyl radical produced to enhance the treatment's performance
- Investigated analytical techniques for the sampling process inside the reactor to characterize the contaminants (naphthenic acids; NA) inside OSPW.

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❖ ***2007-2010*** **Master of Science,** Civil Engineering, Faculty of Engineering, Ain Shams Univ., Cairo, Egypt

Thesis Topic: Evaluation of Upflow Anaerobic Sludge Blanket Reactor in Municipal Wastewater Treatment

- Evaluated the real performance and the applicability of the full scale Upflow Anaerobic Sludge Blanket Reactor (UASB) system in treatment of domestic wastewater (Nahtay wastewater treatment plant, Zifta city, El-Gharbia governorate) in Egypt at local conditions especially in the rural areas.
- Examined the operations and the performance of the individual treatment units in the WWTP under different loading conditions.
- Assessed the post treatment unit (Trickling Filter) after UASB on the global efficiency.
- Developed sampling and monitoring program for UASB unit such as the blanket and sludge characteristics.
- Proposed a feasibility study of UASB alternative for other similar villages/towns including cost analysis.
- Compared the UASB with other conventional systems such as Oxidation Ditch and Rotating Biological Contactor.
- Recommended solutions to sustain the fluctuations in the flow discharge as well as the unexpected illegal shock loading from manure discharge.

❖ ***2001-2006*** **Bachelor of Science,** Civil Engineering, Faculty of Engineering, Ain Shams Univ., Cairo, Egypt

Academic Experience

- ***May 2021–Present Environmental Consultant and*** **Research Scientist (On Project Based),** Civil and Environmental Engineering, University of Alberta, Canada.
  - Water quality characterization using High-Performance Liquid Chromatography and Gas Chromatography.
  - Toxicity analysis for microbial electrochemical cell biosensors applications in the monitoring and detection of NAs.
  - Assistance in Dewatering of tailings projects using microbial enzymes (Statistical Analysis and Background Information for oil sands tailings)
- ***Sep. 2018–April 2021*** **Research Scientist/Engineer, Program Manager and Sessional Instructor,** Civil and Environmental Engineering, InnotecAlberta and Univ. of Alberta, Canada.
  - **Performance of lime for the dewatering of tailings and microbial electrochemical cell biosensors applications for the monitoring and detection of NAs:** This project encompasses the design, assembly, operation, and troubleshooting of a bench scale biosensor and dewatering columns for monitoring naphthenic acids and tailings management, reclamation and development in end pit lakes. As our partners, Imperial Oil and Syncrude were involved in these projects to develop these biosensors and verify the integration of the gained knowledge out of such projects into the applied water monitoring efforts and management of oil sands tailings.

- **Biofuel production derived from lignocellulosic biomass in Canada:** the project encompassed a preliminary economic and feasibility assessment and scoping studies about the second-generation biofuel production derived from lignocellulosic biomass in Canada. Additionally, the project provided an evaluation of the potential of new bio-electro fermentation processes to improve the biofuel production.
- **Tuberculation in oil sands pipelines operations:** this project provided a comprehensive overview about the tubercle formation and its mechanisms and the environmental conditions that lead to tuberculation. Various case studies about tubercle issues were summarized, studied, and illustrated. Furthermore, the project included the mitigation strategies to develop efficient water quality control strategies and standards of mitigation such as protective effects of bacterial biofilms on metal against corrosion and the contributing factors for the deterioration of water mains. In summary, I refined the knowledge of tubercle and corrosion formation to better protect infrastructures and advance the rehabilitation efforts.
- **Bioconversion of sludge to biomethane via anaerobic digestion enhancement in Gold Bar WWTP:** This project is crucial for Gold Bar WWTP operators to address their challenges during operation in terms of energy recovery, anaerobic digestion efficiency, global performance of the sludge treatment scheme in the WWTP. The AD enhancement can adopt primary sludge fermentation to complement the biological nutrient removal process and meet the standards.
- **Key accomplishments with Innotech Alberta and U of A:** This encompassed **i)** the development of proposals that secured funding >$300K in total and leading feasibility studies to provide a sustainable vision of biofuel market development and mitigation of pipeline corrosion in Oil sands operations (investment of $2M); **ii)** the development and establishment of database for resources management (resulting in 70% improvement efficiency); iii) managing the procurement of water quality characterization equipment such as high-performance liquid chromatography ($120-250k) at the most competitive prices to aid the expansion of the lab facilities in civil and environmental engineering department at U of A.

- ***Nov. 2017–Present*** **Assistant Professor (Sabbatical Leave until 2028),** Public Works Department, Civil Engineering Section, Faculty of Engineering, Ain Shams University, Egypt.
- ***Sep. 2012–May 2017*** **Research and Teaching Assistant,** Civil and Environ. Engineering, Univ. of Alberta, Canada
- ***2011-2012*** **Teaching Assistant,** Civil Engineering Department, Future University, Egypt (8 hrs/week)
- ***2008-2012*** **Assistant Lecturer,** Public works Depart., Faculty of Engineering, Ain Shams Univ., Egypt
- ***2009-2012*** **Engineering Expert and Scientist,** Sanitary & Environmental Eng. Research and Consulting unit, Faculty of Engineering, Ain shams University, Egypt

  Research Projects such as: feasibility study including modifications in Sequential Batch Reactor treatment unit and installing an extra equalization tank for rehabilitation of dairy industrial WWTP.

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Courses Taught

2018–2019 Env E 220 Environmental Chemistry for Engineering, Civ E 221 Environmental Engineering Fundamentals.

2012–2017 EngG130 Engineering Mechanics, Civ E221 Environ. Engineering Fundamentals, Civ E265 Engineering Graphics and Civ E622–Physical/Chemical Water & Wastewater Treatment.

2008-2012 Water Treatment Facilities, Wastewater Treatment Techniques, Design of Water/Wastewater Treatment Processes, Water Reuse, and Environmental Impact Assessment.

Relevant Industrial Experience

- **May 2021 – Present: Branch Manager,** Akron Engineering Consultant's Group Ltd., Canada
- **May 2018 - June 2019: Road Traffic Data Collector (project-based),** Bunt & Associates Engineering, Canada
- **May 2010- August 2012: Senior Process & Design Engineer,** AAW Consulting Engineers, Egypt

Examples for projects completed in Egypt

- Evaluation of EMAK industrial wastewater treatment plant (WWTP)
- Review of vendor's Offers for Madinaty WWTP - 40000 m^3/d capacity)

Examples for projects completed outside of Egypt

- Kingdom of Saudi Arabia (e.g., Membrane systems at the Industrial Cities: El-Riyadh & El-Damam, Al-Qassim, El-Ehssa, and El-Riadh WWTPs),
- Morocco (e.g., Tamansourt WWTP- 30000 m^3/d capacity),
- Uganda and Tanzania (e.g., Kihonda WWTP - Stabilization ponds- 25000 m^3/d capacity)
- Syria (e.g., Activated Sludge Extended Aeration- Hassia WWTP).

- **Duties included:**
  - Developed and reviewed the basic and detailed engineering design documents for the water and wastewater treatment processes including the conceptual design, calculations of all water streams in the treatment process, sizing of units, facility layout, piping and instrumentation diagrams, and hydraulic flow diagrams.
  - Inspected existing industrial wastewater treatment plants and recommended rehabilitation and upgrading programs (e.g., Parshall flume was suggested to monitor the flow in an open channel at the WWTP inlet).
  - Prepared, reviewed and approved shop drawings.
  - Ensured the compliance of water quality guidelines, strategies, standards and specifications for water and wastewater treatment facilities (e.g., 10 States Standards).
  - Offered recommendations and suggestions for contamination control as well as remediation solutions.
  - Evaluated technical offers from Contractors and prepared tender documents including project plans, term of reference, cost estimation, technical clarifications, and technical submittals.
  - Supervised projects and progress of contractors' work: planning, commissioning and start up.
  - Performed a detailed investigation and a feasibility study for the rehabilitation of slaughterhouse industrial WWTP, a brief cost analysis and monitoring program for the entire rehabilitation was included.
  - Participated in design meetings, progress meetings and vendors' technical meetings.

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❖ **March 2008- April 2010: Senior Design & Environmental Engineer,** ALDAR Consulting Engineers, Egypt, **Projects Location: Egypt and other countries (e.g. Abu Dhabi, United Arab Emirates)**

- Assessed the status of the local facilities and industrial plants then suggested the required rehabilitations and developed environmental plans.
- Modelled sewer networks using SewerCAD, and designed sewage lift stations
- Prepared and reviewed drainage concept plans, sewer profiles, shop drawings and design reports.
- Prepared and gave training sessions/lectures for WWTPs operators-individuals development plans programs.
- Coordinated the projects, maintained essential records for the progress and deadlines.
- Coordinated with site engineers as well as regulatory agencies and personnel to facilitate the necessary environmental actions and to supervise the design and implementation of the remediation plans.
- Served as site engineer in some infrastructure projects, (submission and preparation of progress reports)
- Designed wastewater treatment facilities and sewage collection networks.

+ **August 2007- March 2008: Intermediate Design & Site Engineer**, Water & Environment Group, Egypt,

- Assessed the quality and efficiency of the water supply and waste water systems in different governorates.
- Produced technical and field reports (current data, proposed solutions for remediation).
- Designed and performed computer hydraulic analysis using WaterCAD of the water collection network
- Monitored ongoing civil projects warranting the compliance with environmental and safety regulation.

❖ **September 2006-July 2007: Junior Design Engineer,** Utilities Consultant Office, Egypt,

- Designed and developed the details of water supply, irrigation networks, wastewater collection networks, wastewater master plans for different municipalities (Surveying approvals, GIS, SewerCad, StormCad and etc.).

Side Research Projects

- **July 2015– July 2016** Research project on development of analytical methods: collaboration between Dr. M. Gamal El-Din, environment Canada and Shell Canada.
- **May 2015** Toxicity and fractionation projects: Collaboration between Dr. M. Gamal El-Din group and Toxicity research groups at the University of Alberta.
- **April-May 2015** Advanced Oxidation Processes: Collaboration between Dr. M. Gamal El-Din & Trojan Technologies Company.

Awards and Scholarships

- ***2019-2020*** Mitacs Accelerate Fellowship, InnotecAlberta and University of Alberta
- ***2017*** Leonard E. Grads Teaching Assistant Award 2017 ($300)
- ***2016*** University of Alberta 2016 Graduate Student Teaching Award
- ***2016*** Best poster presentation, second place (150$), Graduate Research Symposium, University of Alberta

- ***2015*** Canadian Oil Sands Network for Research and Development (CONRAD) Scholarship ($5000)

- ***2015*** Profiling Alberta's Graduate Students award ($2000), University of Alberta
- ***2015*** Leonard E. Grads Teaching Assistant Award 2015 ($300)
- ***2015*** Graduate Students' Association (GSA) Professional Development Award ($500), Univ. of Alberta
- ***2015*** University of Alberta 2015 Graduate Student Teaching Award
- ***2012*** Declined Scholarship: Egyptian governmental mission Scholarship for 4 years ($35000 per year)
- ***2009-2010*** Excellence award & Assembly Honor Degree, Master Degree ($600), Ain Shams Univ., Egypt
- ***2001-2006*** Dean's List for five years, Ain Shams University, Egypt
- ***2005*** Geographic Information System Research Award- ranked top 5 honored student, Germany Government
- ***2001*** Governmental Award: Government recognition for students in Secondary School

Professional Development

- **2020-2021 Certification of Innovation & Entrepreneurship,** MBA program, School of Business, Univ. of Alberta
- **2017-2018 Self-Employment Training Program for New Entrepreneurs**, Microbusiness Training Centre, Government of Alberta
- **Feb. 2018 Data Visualization Workshop,** Agricultural Life and Environmental Sciences, Univ. of Alberta
- **Nov. 2016 Leading Sustainability at Work,** Office of Sustainability, Faculty of Extension**,** Univ. of Alberta

Publications & Conference Presentations

- Chung, T.H.; Zakaria, B.S.; **Meshref, M.N.A.**; Dhar, B.R. (2022). "Enhancing quorum sensing in biofilm anode to improve biosensing of naphthenic acids", Biosensors and Bioelectronics 210 (2022) 114275.
- Safwat, M. Safwat; **Meshref, M.N.A.**; Mohamed, N. Y.; Elawwad, A. (2022). "Adsorption of Phenol onto Aluminum Oxide Nanoparticles: Performance Evaluation, Mechanism Exploration, and Principal Component Analysis (PCA) of Thermodynamics", Adsorption Science & Technology, 1924117.
- **Meshref, M.N.A.;** Mirsoleimani-Azizi, S.M.; Dastyar, W.; Maal-Bared, R.; Dhar, B.R. (2021). "Low-temperature thermal hydrolysis of sludge prior to sludge anaerobic digestion: principal component analysis (PCA) of experimental data, Data in Brief, 107323.
- Allam, N.E.; Romaniuk, N.; Tate, M.; **Meshref, M.N.A.;** Dhar, B.R.; Ulrich, A. (2021). "Impact of lime treatment on tailings dewatering and cap water quality under an oil sands end pit lake scenario", Sci. of the Total Environment, 781, 146699.
- Dastyar, W.; Mirsoleimani-Azizi, S.M.; **Meshref, M.N.A.;** Rasha Maal-Bared; Dhar, B.R. (2021). "Powdered activated carbon amendment in percolate tank enhances high-solids anaerobic digestion of organic fraction of municipal solid waste", Process Safety and Environmental Protection, 151 pages 63-70.
- Mirsoleimani-Azizi, S.M.; Dastyar, W.; **Meshref, M.N.A.;** Rasha Maal-Bared; Dhar, B.R. (2021). "Low-temperature thermal hydrolysis for anaerobic digestion facility in wastewater treatment plant with primary sludge fermentation", Chemical Engineering Journal, 426, 130485.
- Chung, T.H.; **Meshref, M.N.A.;** Dhar, B.R. (2021). "A review and roadmap for developing microbial electrochemical cell-based biosensors for recalcitrant environmental contaminants, emphasis on aromatic compounds", Chemical Engineering Journal, 424, 130245.
- Zhou, P.; **Meshref, M.N.A.;** Dhar, B.R. (2021). "Optimization of thermal hydrolysis process for enhancing anaerobic digestion in a wastewater treatment plant with existing primary sludge fermentation", Bioresource Technology, 321, Article 124498.

- Chung, T.H.; **Meshref, M.N.A.;** Hai, F.I.; Al-Mamun, A.; Dhar, B.R. (2020). "Microbial electrochemical systems for hydrogen peroxide synthesis: Critical review of process optimization, prospective environmental applications, and challenges", Bioresource Technology, 313, Article 13727, 1-15.
- Chung, T.H.; **Meshref, M.N.A.;** Dhar, B.R. (2020). "Microbial electrochemical biosensor for rapid detection of a naphthenic acid model compound in water samples", Journal of Electroanalytical Chemistry, 873, Article 114405, 1-8.
- **Meshref, M.N.A.**; Ibrahim, M.D.; Huang, R.; Yang, L; How, Z.T.; Klamerth, N.; Chelme-Ayala, P.; Hughes, S.A. ; Brown C.; Mahaffey, A.; and Gamal El-Din, M.. (2020). "Fourier transform infrared spectroscopy as a surrogate tool for the quantification of naphthenic acids in oil sands process water and groundwater", Sci. of the Total Environment, 734, Article 139191.
- Huang, R.; Chen, Y.; **Meshref, M.N.A.**; Chelme-Ayala, P., Dong S.; Ibrahim, M.D.; Wang C., Klamerth, N.; Hughes, S.A. ; Headley J.V.; Peru K.; Brown C.; Mahaffey, A.; and Gamal El-Din, M.. (2018). "Monitoring of classical, oxidized, and heteroatomic naphthenic acids species in oil sands process water and ground water from the active oil sands operation area" Sci. of the Total Environment, 645, 277-285.
- Huang, R.; Chen, Y.; **Meshref, M.N.A.;** Chelme-Ayala, P., Dong S.; Ibrahim, M.D.; Wang C., Klamerth, N.; Hughes, S.A.; Headley J.V.; Peru K.; Brown C.; Mahaffey, A.; and Gamal El-Din, M. (2018). "Characterization and determination of naphthenic acids species in oil sands process-affected water and groundwater from oil sands development area of Alberta, Canada" Water Research128, 129-137.
- **Meshref, M. N.A.;** Chelme-Ayala P.; and Gamal El-Din, M., (2017) "Fate and abundance of classical and heteroatomic naphthenic acid species after advanced oxidation processes: Insights and indicators of transformation and degradation". Water Research 125, 62-71.
- Huang, R.; Chen, Y.; **Meshref, M.N.A.;** Chelme-Ayala, P., Dong S.; Ibrahim, M.D.; Wang C., Klamerth, N.; Hughes, S.A. ; Headley J.V.; Peru K.M.; Brown C.; Mahaffey, A.; and Gamal El-Din, M.. (2017). "Comparison of methods for determination of total oil sands-derived naphthenic acids in water samples" Chemosphere 187, 376-384.
- **Meshref, M. N.A.**; Shahinoor, Islam Md; Klamerth, N. ; McPhedran, K. N.; and Gamal El-Din, M., (2017). "Understanding the similarities and differences between ozone and peroxone in the Degradation of Naphthenic Acids Species and detoxification of Oil Sands Process-affected Water: Comparative Performance for potential treatment" Chemosphere 180, 149-159.
- Alpatova, A., **Meshref, M.N.A.**, McPhedran K.; and Gamal El-Din, M. (2015). "Composite polyvinylidene fluoride (PVDF) membrane impregnated with Fe_2O_3 nanoparticles and multiwalled carbon nanotubes for catalytic degradation of organic contaminants" Journal of Membrane Science 490, 227-235.
- **Meshref N. A M.;** Refaat A.M. I.; El Nadi; M.H.A.;Ali, H. I. ; (2011) "Evaluation of UASB Reactor in Nahtay Wastewater Treatment Plant El- Gharbia Governorate, Egypt", Journal of Civil Engineering, Al-Azhar University – CERM: Volume 34.

Under preparation

- **Meshref, M.N.A.**; and Gamal El-Din, M.. (2022) "Negative and positive speciation of the oil sands process-affected water organic fractions after advanced oxidation processes: Toxicity and Kinetics studies" to be submitted on December 15, 2020 to Journal of Cleaner Production.

- **Meshref M.N.A.**; Refaat A.M. I.; El Nadi; M.H.A.; Ali, H. I.; (2022) "Up Flow Anaerobic Sludge Blanket Reactor in Domestic Wastewater Treatment: Modeling, Implications and Applications" to be submitted on November 30, 2022, to Ain Shams Univ. Journal.
- Ibrahim, M.D.; **Meshref, M.N.A.**; and Gamal El-Din, M. (2023) "Differentiating among oil sands process-affected water and groundwater samples determined by Fourier Transform Infrared Spectroscopy via non-parametric statistical analysis" will be submitted on January 10, 2023, to Canadian Society of Civil Engineer Journal.
- **Eltoukhy, N.; Meshref M.N.A**.; Abdel Azeem, M.; El-Nadi, M. (2022) Treatment of Dairy Industry Wastewater using Sequential Batch Reactor. To be submitted on December 20, 2022, to Ain Shams Engineering Journal.

Oral and Poster Presentations

- Chung, T.H.; Zakria, B.S.**; Meshref, M.N.A**.; Dhar, B.R. (2020): "Impact of microplastics on anode biofilms" February 2020, 55th Central Canadian Symposium on Water Quality Research.
- **Meshref, M.N.A**.; Haile, T.; Lin F.; Dhar, B.R. (2019): "Towards Alternative Sources of Clean and Renewable Energy", Postdoctoral fellow research day.
- Stafford, J.; Fu, L.; Li, C.; Lillico, D.; Huang, R.; **Meshref, M.N.A.**; Singh A.; Gamal El-Din, M.; and Belosevic, M. (*2016)* "Toxicity of raw and ozone treated oil sands process-affected waters using mammalian macrophages" Second COSIA Innovation Summit (March "22- 23, 2016) BMO Centre, Stampede Park in Calgary, Alberta.
- **Meshref, M.;** Shahinoor Islam, Md; Klamerth N. and Gamal El-Din, M., (*2016)* "Relative performance of ozone and peroxone on the degradation of naphthenic acid species in oil sands water"2016 *IUVA World Congress",* Vancouver, BC, Canada.
- **Meshref, M.** (presneter).; Shu Z.; Klamerth N. and Gamal El-Din, M., (*2016)* "Solar UV/chlorine process as an advanced oxidation process for oil sands process water" IUVA World Congress" Vancouver, BC, Canada.
- **Meshref, M.;** Shahinoor, Islam Md; Klamerth, N.; and Gamal El-Din, M.; (2016) "Ozone and peroxone advanced oxidation processes on the Oil Sands Process-affected Water (OSPW) remediation: Relative performance for potential treatment" Faculty of Engineering Graduate Symposium (FEGRS) 2016, (June 22 – 23), University of Alberta, Edmonton, Canada.
- **Meshref, M.N.A.**; Shahinoor, Islam Md.; Klamerth, N.; and Gamal El-Din, M.(2015*)* "Impact of Ozone based advanced oxidation processes on the Degradation of Naphthenic Acids Species and detoxification of Oil Sands Process-affected Water"4th European Conference on Environmental Applications of Advanced Oxidation Processes –EAAOP4–Athens, Greece, Oct 21-24, 2015.
- Klamerth, N.; **Meshref, M.;** and Gamal El-Din, M., (*2016)* "Iron impregnated Carbon supports for Fenton-like degradation of Naphthenic Acids" Second COSIA Innovation Summit (March 22-23, 2016), BMO Centre, Stampede Park, Calgary.
- **Meshref, M.N.A.**; Klamerth N. and Gamal El-Din, M. (2016*)* "Impacts of Ozone based advanced oxidation processes on the Oil Sands Process-affected Water (OSPW) remediation" Second COSIA Innovation Summit (Mar 22-23)BMO Centre, Stampede Park in Calgary.
- **Meshref, M.;** Shahinoor Islam Md; Klamerth N.; Chelme-Ayala, P.; and Gamal El-Din, M.(2015) "Decomposition of model naphthenic compound during Ozonation" Faculty of Engineering Graduate Symposium (FEGRS) 2015, (June 15–16 , 2015), University of Alberta, Edmonton, Canada.

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- **Meshref, M.;** Klamerth, N. ; Chelme-Ayala, P; Gamal El-Din, M.; (2015)"Impact of the Structure and Reactivity on the model naphthenic acids compounds degradation in oil sands process affected water during Ozonation" 2015 CPANS Conference, (May 2015), University of Alberta, Edmonton, Canada.
- **Meshref, M.;** Klamerth N.; Chelme-Ayala, P.; Gamal El-Din, M.; (2014) "The Impact of Naphthenic Acids Structure on their Mechanisms of Degradation in Oil Sands Process-Affected Water (OSPW)" Helmholtz-Alberta Initiative Energy and Environment (HAI-E&E) Science Forum, (Sep. 29-30), Edmonton, Canada.
- **Meshref M.,** Mostafa H., El-Nadi M., Abd El-Azeem M. (2009) **"The possible options of low cost sanitations in rural areas"** Sanitary & Environmental Engineering Consulting and Research Unit (SEECU) Science Forum, Ain Shams University Proceedings, February 21-22, 2009, Cairo, Egypt.

Technical reports

- **The development and rehabilitation of industrial dairy wastewater treatment plants (January 2012-August 2012)** [Collaboration between Beity Factory, IDJ Group company and Sanitary & Environmental Engineering Consulting and Research Unit (SEECU), Faculty of Engineering, Ain Shams University , Cairo, Egypt]
- **Eltoukhy, N.**; **Meshref M.N.A.**; El-Nadi, M. (2012). The effect of manure discharge on the fluctuations of the wastewater strength in villages and small towns. Presented in Faculty of Engineering Conference, Civil society, Ain shams University, Egypt
- **Case-Study and Recommendations Report for Rehabilitation of Slaughterhouse Facility Wastewater Treatment plant at Ain Sukhna Port, Suez Governorate, Egypt (February-April 2011)**
- **Current status reports for Rehabilitation of several sewage and sanitation facilities Kafr Elsheikh governorate, Egypt**

Other Qualifications/Skills and Training

- **Programming and Mathematics:** MATLAB
- **Statistics:** Excel, Origin, Minitab, R
- **WHMIS Training, Chemical Safety Training**
- **Troubleshooting, Method Development and Data Processing for different Equipment:** Fourier Transform Infrared Spectroscopy (FTIR) and Ultra-Performance Liquid Chromatography Time-Of-Flight Mass Spectrometry (UPLC-TOFMS) and Fourier Transfer Ion Cyclotron Resonance Mass Spectrometry (FTICR-MS)

Selected Community Services

- ***2018*** Paper4 trees initiative in Edmonton School, Volunteer and Board member
- ***2015-2018*** Michener Park Resident Association (MPRA), Current VP Finance (2017-2018)
- ***2016-2017*** Resident/Outreach Volunteer , Office Of Sustainability, University of Alberta
- ***2014-2018*** FIRST LEGO League Tournament (January 2018, 2017, 2016, 2015, 2014)
- ***2013-2018*** Egyptian Students Association (ESA) Group, Moderator (2016-2017), Vice President (2015-2016)

Professional Affiliations

- **Association of Professional Engineers and Geoscientists of Alberta (APEGA) – Canada,** P.Eng..
- **Canadian Society for Civil Engineers (CSCE) – Canada,** Member.
- **Egyptian Engineers Syndicate (ESS) – Egypt,** Civil and Environmental Engineer and Professional Member.