Mohamed Ismail Abu-Khashaba

Professor of structure **Engineering**

EDUCATION

- **Ph.D., In philosophy in Engineering, Structural Engineering, 1999, Faculty of Engineering, Kyoto- Cairo University, Kyoto-Cairo, Japan-Egypt.**
- "Performance of Non-Rounded Reinforced Concrete Columns Retrofitted by Carbon Fiber Sheet"
- **M.Sc., Master of science in Engineering, in Civil Engineering, 1993, Faculty of Engineering, Ain Shams University, Cairo, Egypt.**
- "Theoretical Contribution to the Structural Behavior of Raft Foundation Resting on Piles"
- **B.Sc., Science in Civil Engineering, July 1987, Faculty of Engineering, Zagazig University, Zagazig, Egypt**.

ACADEMIC EXPERIENCE (FULL-TIME)

- **Delegated Professor** at Civil Engineering Department, Nile Higher Institution of Engineering and Technology, Ministry of Higher Educations, El-Mansoura, Egypt, September 2020.
- **Delegated Professor** at Civil Engineering Department, Misr Higher Institution of Engineering and Technology, "El-Sallab", Ministry of Higher Educations, El-Mansoura, Egypt, September 2018.
- **Delegated Professor** at Civil Engineering Department, Delta Higher Institution of Engineering and Technology, Ministry of Higher Educations, El-Mansoura, Egypt, September 2017.
- **Professor/ Head of Construction and Buildings Materials Department** at Construction Research Institute, National Water Research Center, Ministry of Water Resources and Irrigation, Cairo, Egypt. 2014 to 2017.
- **Associate Professor/ Head of Construction and Buildings Materials Department** at Construction Research Institute, National Water Research Center, Ministry of Water Resources and Irrigation, Cairo, Egypt. 2005 to 2014.
- **Visitor Professor at Technical Dresden University,** Climatology Institute, Dresden, Germany, 9/2013 to 11/2013.
- **Lecturer, Head of Construction and Buildings Materials Department** at the Construction Research Institute, National Water Research Center, Ministry of Water Resources and Irrigation. Delta Barrages, Egypt. 2000 to 2005.
- **Ph. D Student and Teaching Assistant** at Kyoto University, Kyoto, Japan, 1997–1999.
- **Teaching Assistant in Japan** for several civil engineering classes including: Structural Analysis, Material Science, Computer Applications in Civil Engineering, Construction Management, and Historical lectures about Egypt, Kyoto University, Kyoto, Japan, 1997–1999.
- **Researcher Assistant**, Construction Research Institute, National Water Research Center, Cairo, Egypt, 1994-1997.
- **Attending Seminar on "Advanced Engineering Technology**, as a Senior Engineer in Japan, Visiting Different Japanese Projects and Applications in several Japanese Cities such as Tokyo, Osaka, Hiroshima, Toyota… , Japan, 5/1996 to 6/1996.
- **Assistant Researcher**, Construction Research Institute, National Water Research Center, Cairo, Egypt, 1990-1994.

NON-ACADEMIC EXPERIENCE (FULL TIME)

- **General Consultant Engineer** for different building construction projects in Egypt, (both Private and Governmental), from 1999 to date.
- **General Director of Vice-Minister** for Irrigation at Alexandria-Governorate, Alexandria, and Design & supervisor Engineer for different building construction projects in Egypt, 1988-1990.
- **Computer and Field Engineer, Office Director for Vice-Minister**, Alexandria, Ministry of Public Works and Water Resources, Alexandria, Egypt, 1988-1990.

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS

A certificate of training either Local Internal Training, or International External Training in the following fields:

- Computer design of canals and waterways, Training Centre, Ministry of Water Resources and Irrigation, 13-24 August 1989, Cairo, Egypt.
- Design of Foundations Based on Expansive and Collapsible Soils, University of Colorado in association with the National Water Research Center, September 20-October 12, 1989.
- Flow in open channels and measurement of Discharges, Hydraulics Research Institute - National Center for Water Research, May 16-28, 1999, Cairo, Egypt.
- A course in English Language at the American University (advanced level), The American University - May 27-July 30, 1990, Cairo, Egypt.
- Programming using the C-language (level one), Institute of Statistics and Computer Training Center - Cairo University - February 23 - April 23, 1992, Giza, Egypt.
- Programming using the C-language (level two), Institute of Statistics and Computer Training Center - Cairo University - December 5-17, 1992, Giza, Giza, Egypt.
- Computer design of irrigation Structures, Training Center at the Ministry of Irrigation in partnership with Ain Shams University, 2 - 13 May 1993,
- Engineering drawing using the AutoCAD program, Training Center of the Housing and Building Research Center - November 13-25, 1993, Cairo
- The international program on modern technology in the field of construction, May 14 - June 29, 1996, Different Cities, Japan.
- International Program in Civil Engineering (Technology and Projects), October 1997 - April 1999, Kyoto University - Kyoto – Japan.

PROFESSIONAL ORGANIZATIONS

- Egyptian Engineers Syndicates.
- Japanese Society of Civil Engineers
- Japan Concrete Institute (JCI)
- The Egyptian Green Building Council (EGBC)
- Egyptian Concrete Society (ECS)

HONORS AND AWARDS

- International external scientific award from the European Union for “Old Masonry Repair Grand” at the University of Dresden, Dresden, Germany, for a period of 3 months, September-November 2013.
- National internal scientific award from the National Water Research Center for winning the beast applied research proposal for annual grands of study and complementary researches for Research- Plan, 2011-2012 in the area of “Improving the properties of building materials to construct irrigation structures with traditional materials that are more economical and less harmful to the environment”, at the Construction Research Institute, Delta Barrages, 2012, Egypt.
- Faculty of Engineering, Cairo University award in scientific research and quality of publications, 2000.

SELECT PUBLICATIONS/PRESENTATIONS (PAST 5 YEARS) ,

- Hashad, A.S., and Abu-Khashaba, M.I., "Strengthening and Rehabilitation Techniques for Masonry Hydraulic Structures - A Case Study (Part1- Assessment)", Nineteenth International Water Technology Conference, IWTC19, Sharm ElSheikh, 21-23 April 2016, Faculty of Engineering, Mansoura University, Egypt.
- Abu-Khashaba, M.I., Mostafa M.A., and Adam, I., "Behavior of Self Compacting Fiber Reinforced Concrete Containing Cement Klin Dust", Alexandria Engineering Journal,
    - Elsevier, Available on Line on April 2014, Volume 53, Issue 2, Faculty of Engineering, Alexandria University, Egypt, June 2014.
- Abu-Khashaba, M.I., Adam, I., and El-Ashaal, A., "Investigating the Possibility of Constructing Low-Cost Roller Compacted Concrete Dam", Alexandria Engineering Journal, Elsevier, Volume 53, Issue 1, Faculty of Engineering, Alexandria University, Egypt, PP. 131-142, March 2014.
- Hashad, A.S., and Abu-Khashaba, M.I., "Seismic Evaluation of Cracked Masonry Barrage Piers Repaired with Different Methods", Journal of Engineering Sciences, Volume 41, No. 4, Faculty of Engineering, Assiut University, Egypt, PP. 1406-1420, July 2013.
- Abu-Khashaba, M.I., "Assessing the Behavior of Concrete Reinforced with Different Polypropylene Fiber Types", Engineering Research Journal, ERJ, Vol. 36, No. 3, Faculty of Engineering, Minoufiya University, Egypt, PP. 339-349, July 2013.
- Abu-Khashaba, M.I., "Innovating Impermeable Concrete Appropriate for Canal Lining Using a Specific Mixing Ratio and Applying it to a Pilot Reach", Journal of Engineering Sciences, Faculty of Engineering, Assiut University, Vol. 41, No. 3, PP. 900–918, May, 2013.
- Abu-Khashaba, M.I., and Hashad, A.S., "An Experimental Study of Strength Characteristics for Masonry Constructed with Various Mortars", Journal of Engineering and Applied Science, Vol. 59, No. 6, Faculty of Engineering, Cairo University, Egypt, PP. 517- 539, DEC. 2012.
- Abu-Khashaba, M.I., "Factors Affecting Performance of Fiber Reinforced Concrete, FRC", Journal of Water Science, Vol. 39-40, National Water Research Center, Egypt, PP. 78-92, April & Oct. 2006.
- Abu-Khashaba, M.I., “Flexural Behavior of Concrete Beams Externally Strengthened with Bonded CFRP”, Mansoura 4-th Int. Engineering Conference (MIEC 2004), Sharm El-Shiekh, Egypt, April, 2004.
- Anwar M., Abu-Khashaba, M.I., and Khalil E. A., “Chloride Permeability and Prore Structure Study of Concrete Containing Rice Husk Ash”, Civil Engineering Research Magazine, CERM, Al-Azhar University, Cairo, Egypt, Vol. 26, No. 2, pp. 960-978, April 2004.
- Abu-Khashaba, M.I., and Yehia, N.A.B., “Confinement of Compression Concrete Members by CFS Wrap", Journal of Engineering and Applied Science, Faculty of Engineering, Cairo University, Egypt, January, 2003.
- Abu-Khashaba, M.I., and Yehia, N.A.B., “Effect of Salt Water Environment on Compressive Strength of RC Columns”, The International Conference on Performance of Construction Materials, Cairo, Egypt, February 2003.
- Abu-Khashaba, M.I., and Adam, I.A., “Influence of Repairing Technique on the Structural Response of Corroded RC Columns”, Interbuild03, Cairo, Egypt, June, 2003.
- Adam, I.A., and Abu-Khashaba, M.I., “Effect of Water Content on Time-Dependent

Properties of High-Strength Concrete", Interbuild03, Cairo, Egypt, June, 2003.

- Adam, I.A., and Abu-Khashaba, M.I., "Moisture-Induced Shrinkage of High-Performance Concrete under Different Relative Humidity Conditions", Fifth Alexandria International

    - Conference on Structural and Geotechnical Engineering, Alexandria, Egypt, December, 2003.

- Abu-Khashaba, M.I., and Adam, I.A., "An Innovative Technique for Upgrading Damaged Concrete Elements", Fifth Alexandria International Conference on Structural and Geotechnical Engineering, Alexandria, Egypt, December, 2003.
- Abu-Khashaba, M.I., "Effect of Salt Water Environment on Bond Strength Between Concrete and CFS", Fourth International Conference on Civil and Architecture Engineering, ICCAE, Cairo, Egypt, 14-16 May 2002.
- Abu-Khashaba, M.I., Yehia N. A.B. and Heikal A. H., "Durability Investigation of FRP Composites Wrap For Concrete Columns In Salt Environment", The second international conference on Durability of Fiber Reinforced Polymer (FRP) Composites for Construction, CDCC'2002, Montreal, Canada, 29-31 May 2002.
- Abu-Khashaba, M.I., "Residual Capacity of Concrete Columns Damaged by Salt Attack", CERM Journal, Al-Azhar University, Vol. 24, No.1, Cairo, 2002.
- Abu-Khashaba, M.I., Heikal A. H., and Ono K., "Novel Composite Wrap Rehabilitation Approaches for Deteriorated Concrete Columns", Structural Engineers World Congress, SEWC2002, Yokohama, Japan, 9-12 October 2002.
- Abu-Khashaba, M.I., "Bond of Concrete-CFS Interface after Exposing to High Percentage of Humidity", The Third Middle East Symposium on Structural Composites for Infrastructure Applications, Aswan, Egypt, 17-20 December, 2002.
- Abu-Khashaba, M.I., "Contribution of Different Constituent Elements on Compressive Strength of RC Square Long Columns", Proceedings of Fourth Alexandria International Conference on Structural and Geotechnical Engineering, Alexandria, Egypt, 2-4 April 2001.
- Abu-Khashaba, M.I., and Yehia, N.A.B., "Effect of CFS Retrofit Technique on the Performance of RC Columns", Ninth International Colloquium on Structural and Geotechnical Engineering, Cairo, Egypt, 10-12 April 2001.
- Haggag, H.A., Yehia, N.A.B., and Abu-Khashaba, M.I., "Retrofit of Corroded RC Columns Using Carbon Fiber Sheet", International Interbuild Conference on Building Construction in the 21th Centuary, Cairo, Egypt, June 23-26, 2000.
- Abu-Khashaba, M.I., "Performance of Non-Rounded Reinforced Concrete Columns Retrofitted by Carbon Fiber Sheet", Ph.D. Dissertation, Department of Civil Engineering, Cairo University, El-Giza, Egypt, September 1999.
- Hashad, A.S., and Abu-Khashaba, M.I., "Seismic Evaluation of Cracked Masonry Barrage Piers Repaired with Different Methods", Journal of Engineering Sciences, Volume 41, No. 4, Faculty of Engineering, Assiut University, Egypt, PP. 1406-1420, July 2013.
- Abu-Khashaba, M.I., Haggag, H.A., Ono, K., and Yehia, N.A.B., "Strength Recovery of Corroded RC Columns by the Aid of Carbon Fiber Sheet", International Conference on Integrated Management of Water Resources in the 21th Centuary, Cairo, Egypt, PP. 696- 705, November 21-25, 1999.

- Abu-Khashaba, M.I., Ono, K., and Yehia, N.A.B., "Compressive Strength of Non-Round Struts Retrofitted with CFS Wrap", Journal of Engineering and Applied Science, Vol. 46, No. 6, Faculty of Engineering, Cairo University, Egypt, PP. 1035-1053, Dec. 1999.
- Abu-Khashaba, M.I., and Zidan, M.K., "Structural Behavior of Raft Foundation Resting on Piles", "Proceedings of the Eleventh African National Conference, Cairo, Egypt, 1994.
- Abu-Khashaba, M.I., "Theoretical Contribution to the Structural Behavior of Raft Foundation Resting on Piles", M.Sc. Thesis, Department of Civil Engineering, Ain Shams University, Cairo, Egypt, 1993.

RESEARCH INTERESTS AND ACTIVITIES

- Analysis and design of different structural systems.
- Finite Element Analysis of different structural systems.
- Rehabilitation of masonry structures.
- Use of advanced composite materials (CFRP, GFRP for manufacturing of gates for various hydraulic structures as an alternative to traditional steel gates.
- Looking for appropriate mortar to be compatible with the old clay mortar
- Earthquake engineering.
- Find a water impermeable / low permeable mixture suitable for lining work.
- Construction of RCC dams using low-cost local materials and fly ash.
- Retrofit and repair of reinforced concrete structural elements using Fiber Reinforced Materials, FRP.
- Retrofit of RC columns against salt attack.
- Behavior of RC columns confined with CFS against earthquake.
- Effect of different environmental conditions on bond strength between concrete surface and CFS.
- Modeling RC columns wrapped with CFS using FEM.
- Monitoring the performance of existing structures and embankments.
- Inspection of water structures and bridges.
- Examine, evaluate and repair water and bridges installations.
- Investigate special types of concrete such as self-compaction, self-healing and underwater concrete.
- Lining waterways in the presence of water, using low-cost methods and methods.
- Supervision of graduate researchers (M.Sc. & Ph.D.) on different subjects related to repair and retrofit of concrete structures using ACM.
- Reinforcement and repair of various concrete members using FRP fibers.

PROFESSIONAL DEVELOPMENT

- Technical Secretariat of the Irrigation Code Preparation Committee, (Ministry of Water Resources and Irrigation), Cairo, Egypt.
- Sub-Committee for preparing Egyptian FRP code, Cairo, Egypt.

SERVICE ACTIVITIES (INTERNAL AND EXTERNAL)

Participation in the Projects and Applied Research in the Field of Production and Environmental Service: Participating in preparing courses and giving lectures in many different fields, especially in the field of tests on fresh and hardened concrete, quality control and assurance, dams, overall quality, design of concrete mixes, causes and manifestations of deterioration of structures, evaluation of concrete structures, load-bearing walls and all irrigation structures, strengthening and restoration of facilities Reinforced concrete and load-bearing walls.

National/Private Projects Field:
Conducting field visits to conduct inspections on the ground and preparing construction reports to evaluate many different structures and suggest methods of repair and rehabilitation, maintenance and follow-up supervision, and the work of construction designs for many projects for private and governmental structures for many ministries, especially the Ministry of Water Resources and Irrigation, in addition to other large national projects.
Participate in the development and teaching of Engineering curricula, and supervise and discuss various field training and graduation projects for students.

KEY QUALIFICATIONS:

- Inspection and Assessment/Evaluation Expert for different old existing structures (both Skelton and Bearing types).
- Repair, Retrofit and Rehabilitation of different both Bearing, and RC structural elements especially corroded concrete elements as well as deteriorated structures using Advanced Composite Materials, ACM beside the classical techniques.
- Material Engineering Expert.
- Structural Design Expert.
- Soil Classification and Testing, Analysis and Report Writing Expert.
- Soil improvement and Foundation design Expert