

Curriculum Vitae

NAME: OSAMA ABDEL-GHAFOUR HODHOD
POSITION: Professor, Structural Engineering Department,
Head of Quality Assurance and Accreditation Unit
Coordinator of the Credit Hour Program in Structural Eng.,
Cairo University, Giza, Egypt.
General Manager; Misr Testing Center,
PROFESSIONAL REGISTRATION: 1107/12 Engineering Syndicate
CONSULTANT ENG. REGISTRATION: 6433/1
ADDRESS: 40 Radwan Street #9, Manial, Cairo 11451, Egypt.
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MARITAL STATUS: Married

EDUCATION:

1989-1993 **Ph.D. OF CIVIL ENGINEERING**
McMaster University
Hamilton, Ontario, CANADA

1985-1989 **M.Sc. OF CIVIL ENGINEERING**
Cairo University
Giza, Egypt

1980-1985 **B.Sc. OF CIVIL ENGINEERING (Distinction with Honour)**
Cairo University
Giza, Egypt

PROFESSIONAL WORK EXPERIENCE:

I- TEACHING AND RESEARCH:

2010 – Date **PROFESSOR**
Structural Engineering Department, Cairo University, Giza, EGYPT.

2001- 2010 **ASSOCIATE PROFESSOR**
Structural Engineering Department, Cairo University, Giza, EGYPT.

2004 – 2007 **VISITING PROFESSOR**
Agricultural Engineering department, Tokyo University of Agriculture and Technology,
Tokyo, JAPAN.

1995- 2001 **ASSISTANT PROFESSOR**
Structural Engineering Department, Cairo University, Giza, EGYPT.

1994-1995 POST DOCTORAL FELLOW

Civil Engineering Department, the University of Nebraska-Lincoln, Lincoln, NE 68588-0531

During this one year appointment a feasibility study was conducted on Lincoln Composite Bridge (the first US pedestrian GFRP Cable-Stayed Bridge). This bridge will be the world's longest bridge made entirely from GFRP with total length of 900 ft. This bridge has a main span of 400 ft and two main spans of 250 ft each.

An experimental program was also initiated to characterize statistically the basic mechanical properties of the GFRP laminates, and to obtain data on the creep rupture and isochronous curves of the GFRP laminates. An investigation is also going on to study the in-plane strength of concrete reinforced with GFRP gratings.

1989-1993 TEACHING ASSISTANT

McMaster University, Hamilton, Ontario

- Teaching undergraduate courses of structural engineering.

1985-1989 TEACHING ASSISTANT, RESEARCH ENGINEER

Cairo University, Giza, Egypt

- Teaching undergraduate courses of Structural Engineering.

II- STRUCTURAL ENGINEERING PRACTICE

1998- Date: GENERAL MANAGER

Misr Testing Center, 42 Reda Street, Mariotyya, Haram

Structural Engineering, Quality Control and Quality Assurance Consulting Office

Designing and supervising the design of more than 300 reinforced concrete and steel structures such as:

- 1- Rehabilitation Designs of API tank in BADR-3 Oil field, BAPETCO oil company.
- 2- Structural Assessment and Investigation of deterioration reasons of pumps foundations Badr-2 Oil Field, BAPETCO oil company.
- 3- Structural Assessment and Investigation of Deterioration reasons of the "REGEN Columns" Obayied Natural Gas Plant, BAPETCO oil company.
- 4- Structural Assessment and Investigation of Deterioration reasons of "National Port Said Museum", National Authority of Antiquities.
- 5- Reinforcement Corrosion investigation of the RC south tower of the "National Cancer Institute", Cairo University.
- 6- Reinforcement Corrosion Investigation of Terminal Building-2, Cairo Airport, LIMAK INSAAT International Contractors.
- 7- Reinforcement Corrosion Investigation of The Air Force Hospital, Abbasia, Cairo, Egypt.
- 8- Review of designs of Contract 21 (large size main sewer collectors- Maadi District- General Consultant is Prof. Dr. Zaher Abdallah)

- 9- Review of designs of Contract 5A (Large size main sewer collectors, Pumping Station and Settling basins- Helwan District- General Consultant is Prof. Dr. Zaher Abdallah)
- 10- Pumping stations for towns of Santa, Zahraa, Khoussous, Nile delta
- 11- Delapidation Survey for buildings on the pipenetworks in the districts of Saida Zainab, Badrasheen, Khoussous, Warraq
- 12- Structural design of El-Yosr water treatment plant, Hurghada, Egypt.

1987-1989 and 1995-1998 **SENIOR DESIGN ENGINEER**
 Misr Consult, 2 Tanta Street, Giza, Egypt

Designing and supervising the design of more than 300 reinforced concrete and steel structures such as:

- 1- Strengthening and Rehabilitation of the Historic Building: Mohamed Ali Palace- Shobra
- 2- Material Testing of Bricks and Plaster of Antonios Monastery- Zaafarana, Red Sea.
- 3- The extension of HALWANI factory, 10th of Ramadan City, Egypt.
- 4- Mubarak National Project for Housing.
- 5- the "Shorouk" resort in Alexandria, Egypt
- 6- Hurghada waste water treatment plant, Hurghada, Egypt.
- 7- "Housh El-Ghazal" Development Project, El-Montazah, Alexandria.
- 8- CEDARE, Building and Convention Centre
- 9- El-Nada District , 6th October, Egypt.

Tasks also included conducting Structural integrity Studies such as:

1. Low cost residential buildings in El-Mokattam (20 buildings Owned by General Authority for Cooperative Construction
 Contractor : ((Delta General Company for Contracting))
2. Low cost residential buildings in El-Mokattam (31 buildings
 Owned by General Authority for Cooperative Construction
 Contractor: ((Nile General Company for Contracting))
3. Low cost residential buildings in El-Mokattam (39 buildings
 Owned by General Authority for Cooperative Construction
 Contractor ((Delta General Company for Contracting))
4. Buildings No. 81,82- 11th district, 6th October city
 Owned by General Authority for Cooperative Construction
5. El-Shark Insurance Company tower in Suhag
6. IVC factory in 6th October city
7. City bank Senior Management building at 8Ahmed pash street, Garden city , Cairo
8. Semi-Industrial tests building – National Research Center – Dokki – Giza
9. Amigo Resort –El-Soukhna – Hotel building Extension
10. Meniat Sandoub School , Dakahlia Gavernarata

There has been an active participation in building appraisal as part of Privatization Studies

- EL-Nasr Cooling Company (Koldair) – Sakiat Mikki Giza .
 (a sub - Consultant to ITC- PE Ltd.)

1986-1987 **DESIGN ENGINEER**

Egyptian - swiss consulting house, Cairo, Egypt

- Designing and taking part in designing several Reinforced concrete residential and commercial structures.
- Dealing with high rise buildings, wide span structures and special structures such as: Multi-storey Garages and heavy equipment service station of the "Egyptian Contracting Company", 6 October City, Egypt.

1985-1989, and 1995-Date **QUALITY CONTROL CONSULTANT**

Cairo University, Material Testing Lab

- Experience in the field of quality control of Reinforced concrete works.

Examples of Projects Include:

1. Development of SAFAGA port
General Contractor: Wadi El-Nil Contracting Company
2. East Port Said Port Development
General Contractor: Wadi El-Nil Contracting Company
3. CPC Industrial Park, 6 October City
General Contractor: Focus Contracting
4. Al-Oula Industrial Park, 6 October City
General Contractor: Pioneers for Modern Engineering
5. Assessment of Terminal Building-2, Cairo Airport
General Contractor: LIMAK INSAAT
6. Mena 4, North Coast ,
General Contractor : Mena for Engineering Consulting and development
7. Aghadeer Resort North Coast,
Owner: Al-Amar for land development.
8. Ain Shams University Resort , North Coast
General Contractor: Alexandria Construction
9. Doaa Al-samaa Resort, North Coast
General Contractor: Mediterranean Construction
10. Toyota Egypt show room and service station , Abbasia , cairo
General Contractor: Urban Development (Saudi and Company)
11. Ring Road – Autostrad interchange
General Contractor: Alexandria construction company
12. North African Factory (Namco) - Abou rawash,
General Contractor: Pioneer Contractor
13. Egyptian Molded glass factory, 10th of Ramadan City.
General Consultant: Cairo Center (Eng. Ibrahim Talaat)
14. Egy-Gas factory , New Balteem , kafr El-sheikh
Owner: Egygas
15. Mubarak Studio Complex , Media Production city , 6th October City.
General Contractor: Arabin International construction
16. Halliburton Oil Field, Alexandria Off-Shore Injection works

- PortSaid, Egypt
17. Schlumberger – Dowell, Cement Slurry Injection works.
Alexandria- Egypt
 18. Al-Amar Residential Towers, Nasr City
Owner: Al-Amar Real Estate
 19. Egyptian –Swiss Tailors, 10th of Ramadan City
General Contractor: Al-Shark Contractors (Eng. Ahmed Shalaby)
 20. Starch Factory, 10th of Ramadan City,
General Contractor: Arab Engineers
 21. Tiba Rose Resort , North Coast,
General Contractor: RANCY Contracting
 22. El-Agamy Garden City Residential Complex,
Owner: Al-Hussein Contractors
 23. El-Marwa Residential Towers, El-Haram,
Contractor: RANCY Contracting
 24. Bank of Alexandria, Abu-Simbel,
Contractor: Technical Office for Contracting
 25. Several Residential and Industrial Buildings in Greater Cairo Region.

III- OTHER ACTIVITIES:

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| 1995- 1999 | Project Monitor (Engineering Education Development Project)
Ministry of Higher Education and the World Bank
Responsibilities included examine, supervise and report on the state of the lab equipment delivered to Material Testing labs in Alexandria University, Mansoura University, Helwan University, and Suez anal University. |
| 1998-Date | Lecturer at the Training Center for Construction Workers
(Ministry of Housing, Utilities, and Urban Communities) |
| 1998 | Member of the Reseach Team on “non-traditional aggregates for concrete”
(Cairo University-Housing and Building Research Center) |
| 1999 | Member of the Committee on Translation of ASTM Standards
(Cairo University - Housing and Building Research Center) |
| 2000 | Member of the Egyptian Code Subcommittee on Testing of Construction Materials (Housing and Building Research Center) |
| 2002-2003 | Member of Cairo University Task Force on “Modernization of Industry”
(Uses of Marble Cutting Wastes) |
| 2008-Date | Chairman, Municipal Committee of structurally liable building, North Giza and Warraq municipalities, Giza Governorate |
| 2012-Date | Free Lance Instructor with “Projacs” |
| 2014-Date | Member of the code committee on “Pipes and their uses in Infrastructure Projects”. |
| 2014-Date | Chairman of the Accreditation and Quality Control Committee for Structural Engineering Program. |

PROFESSIONAL MEMBERSHIPS:

Egyptian Engineering Syndicate

Egyptian Society of Engineers
Japanese Society of Civil Engineers
International Union of Laboratories and Experts on Construction Materials and
Systems (RILEM).

PUBLICATIONS

Peer Reviewed Journal Papers:

- **Hodhod O. A., Ahmed H. I.,** (2014); "Modeling the Service Life of Slag Concrete Exposed to Chlorides", Ain Shams Engineering Journal, vol. 5, No. 1, pp 49 – 54.
- **Hodhod O. A., Salama G.,** (2014); "Simulation of Expansion in Cement Based Materials Subjected to External Sulfate Attack", Ain Shams Engineering Journal, vol. 5, No. 1, pp 7 – 15.
- **Hodhod O. A., Ahmed H. I.,** (2014); "Modeling the Corrosion Initiation Time of Slag Concrete Using The Artificial Neural Networks", HBRC Journal.
- **Hodhod O. A., Rashad A. M., Abdel-Razek M. M. and Ragab A. M.,** (2009); "*Coating Protection of Loaded RC Columns to Resist Elevated Temperature*", Fire Safety Journal, vol. 44, pp 241–249.
- **Rashad A. M.; Hodhod O. A.; Ragab A. M.,** (Submitted for review) "*Effect of Chemical Admixtures on Loaded Columns at Fire*", Submitted for review and possible publication to Construction Materials Journal.
- **Rashad A. M., Hodhod O. A., Abdel-Razek M. M. and Ragab A. M.,** (submitted for review); "*Size and Concrete Cover Effect on the Residual Capacity of Loaded Rectangular RC Column Models Exposed to Elevated Temperature*", submitted to the Asian Journal of Civil Engineering (Building and Housing).
- **Rashad A. M., Farag N. O., Hodhod O.A. and Abdel-Razek M. M.,** (2008); "*Utilizing Experimental Model Tests and Artificial Neural-Nets to Estimate the Strength Loss of Heated Reinforced Concrete Columns*", Asian Journal of Civil Engineering (Building and Housing) Vol. 9, No. 4, 391-409.
- **Al-Tersawy S. H., El-Hefnawy A. A., Hodhod O. A.,** (2007); "*Variability Of CFRP Tensile Properties And Its Effect On Confined Concrete Strength*", Engineering Research Journal, Faculty of Eng. At Matarya, Helwan University, Issue 109, C16-C32.
- **Abdel-Razek M. M., Hodhod O.A, Khalil M. H. and Rashad A. M.,** (2006); "*Theoretical and Experimental Study of the Effect of Coating on RC Columns under Elevated Temperature*", Civil Engineering Research Magazine (CERM), Faculty of Engineering, Al-Azhar University, Volume (28) No. (3) October 2006 pp. 1039-1060.
- **El-Seify, M. O.; El-Attar, M. M.; Ragab, A. M.; Hodhod, O. A.;** (2006); "Modeling Of Openings In Masonry Infill Panels In R.C. Frames, 2D Approach", HBRC Journal, vol.2, No.1, pp42 – 54.
- **Ramadan, A.; Hodhod, O. A.; Youssef, M. A. R.; Fouda, S. A.;** (2006); "Characterization Of Local Egyptian Iron Ores For Use In Radiation Shielding Concrete" Vol. 90, NO.4, pp371-376.
- **Hodhod, O.A.; Hassan, W.A.; Hilal, M.S.; Bahnasawy, H.;** (2005); "Strength and Ductility of Biaxially Loaded High Strength RC Short Square Columns Wrapped with GFRP Jackets", Structural Engineering and Mechanics, an International Journal, vol20, No.6, pp727-745.
- **El-Attar, M. M.; El-Seify, M. O.; Ragab, A. M.; Hodhod, O. A.;** (2005); "The Influence of Masonry Infill Walls on the Seismic Capacity of Reinforced Concrete Frames, a Probabilistic Study" HBRC Journal, vol. 1, No.2, pp 1-12.
- **El-Attar, M.M., Abo Ghanima, H.H., and Hodhod, O.A.;** (2005) "*Statistical Assessment of Strength Acceptance Criteria in the Egyptian Code of Practice*", HBRC Journal, vol.1, No. 2, pp 38 - 46 .

- **Hodhod, O.A.;** (2000) "*An Investigation into the Long-Term Behaviour of Pultruded Glass Fiber Reinforced Plastic Coupons*", Civil Engineering Research Magazine, Al-Azhar University, vol.22, No.4, pp1537-1549.
- **Hodhod, O.; Abdel-Razek, M.; Ragab, A.; and Rashad, A.;** (2000); "*Structural Behaviour at Elevated Temperatures of Loaded RC Column Models Containing Different Aggregate Types*", Civil Engineering Research Magazine, Al-Azhar University, vol.22, No.4, pp1427-1440.
- **Abdel-Razek, M.; Hodhod, O.A.; Ragab, A.M.; and Rashad, A.M.;** (2000); "*Temperature Gradients in RC Loaded Columns Made of Different Types of Aggregates*", Civil Engineering Research Magazine, Al-Azhar University, vol.22, No.4, pp1359-1375.
- **Hodhod, O.A. and Khalifa, M.A.;** (1997) "*Seismic Performance of an FRP Cable-Stayed Bridge*", International Journal of Structural Engineering and Mechanics, vol. 5, No.4.
- **Khalifa, M.A., Hodhod, O.A., and Zaki, M.A.;** (1996) "*Analysis and Design Methodology for FRP Bridges*", Composites B: Engineering, v27, No.1, pp307-317.

Reviewed International Conferences Papers:

- **Hodhod, O. A. and Kato M., (2007);** "*Proposed Concrete Strength Compliance Criteria for the Egyptian Code of Concrete Based on the Average outgoing Quality Limit (AOQL) Concept*", 9th International Summer Symposium of the Japanese Society of Civil Engineers, Yokohama National University, 18 September, 2007, Yokohama, JAPAN.
- **Al-Tersawy S. H.; Hodhod O. A.; Hefnawy A. A., (2007);** "*Reliability and Code Calibration of RC Short Columns Confined with CFRP Wraps*", 8th International Symposium on Fiber Reinforced Polymer Reinforcement for Concrete Structures; 16-18 July, 2007, Patras, Greece.
- **Al-Tersawy S. H., El-Hefnawy A. A., Hodhod O. A., (2006);** "*Influence of Variations in CFRP Tensile Strength on Strength of concrete confined by CFRP Wrapping*", The International Conference on Bridge Management Systems - Monitoring, Assessment, and Rehabilitation, HBRC, 21-23 March, 2006, Giza, EGYPT.
- **Sabrah, T.; Hodhod, O.A.; El-Hefnawy, A.A.; (2005);** "*Simple Design Approach To Rehabilitate Unreinforced Masonry Walls Using Ferrocement Overlays*", International Workshop on Innovations in Materials and Design of Civil Infrastructure, 28-29 Dec., 2005, Cairo, **EGYPT**.
- **Hodhod, O.; Hassan, W.; Hilal, M. S.; Bahnasawy, H.; (2004);** "*Ductility Enhancement Of High Strength Concrete Square Short Columns Subjected To Biaxial Bending Moments And Strengthened By FRP Laminates*", the Third International Conference on Advances in Structural Engineering, 2-4 September 2004, Seoul, Korea.
- **Hodhod, O.; Berry, T. A.; El-Hefnawy, A. A.; (2004);** "*UpGrading of Clay Brick Load Bearing Walls Using Ferrocement Overlays*", the Third International Conference on Advances in Structural Engineering, 2-4 September 2004, Seoul, Korea.
- **Hassan, W.; Bahnasawy, H.; Hilal, M. S.; Hodhod, O.; (2004);** "*Strengthening Of High Strength Concrete Square Short Columns Subjected To Uniaxial Bending Moments Using FRP Laminates*", to be presented at the HBRC 50th Anniversary International Conference, December 2004, Cairo, **EGYPT**.
- **El-Hefnawy, A. A.; Hodhod, O.; Berry, T. A.; (2004);** "*Strengthening of Load Bearing Walls Using Ferrocement Overlays*", the HBRC 50th Anniversary International Conference, December 2004, Cairo, EGYPT.
- **Salah El-Din, O.A.; Hilal, M.S.; Hodhod, O.A.; and El-Hefnawy, A.A.; (2000);** "*Structural Behaviour of Reinforced Concrete Beams with Corroding Reinforcement*", Eighth Arab Structural Engineering Conference, Yousef, M.A.; ed.; Cairo, Egypt, Oct. 2000.
- **Hilal, M.S.; Salah El-Din, O.A.; El-Hefnawy, A.A ; and Hodhod, O.A.;** (2000); "*A Proposal for Determining the Design Cross Sectional Area of Corroding Rebars*", Eighth Arab Structural Engineering Conference, Yousef, M.A.; ed.; Cairo, Egypt, Oct. 2000.
- **Hodhod, O.A. and Wilson, J.C.;** (1994); "*Characteristics of the Seismic Response of A Cable-Stayed*

Bridge Tower", Presented at the 10th European Conference on earthquake Engineering, Vienna, Austria, August, 1994.

Conference and Society Meeting Presentations:

- **Hodhod O. A. And Kato M.; (2007);** "*Effect of Wet-Dry Cycles in Sulphate Solutions on Concrete*", The Annual Meeting of the Japanese Society of Civil Engineers, 10-12 September 2007, Hiroshima University, Hiroshima, JAPAN.
- **Abdel-Razek, M. M.; Hodhod, O. A.; Khalil, M. H.; and Rashad, A. M.; (2006);** "*Theoretical and Experimental Study of the Effect of Coating on RC Columns Under Elevated Temperature*" the Fifth International Engineering Conference, Mansoura University, Sharm El-Sheikh, EGYPT, March, 27– 31, 2006.
- **Bahnasawy, H.; Hilal, M.S.; Hodhod, O.; Hassan, W.; (2005);** "*Behavior Of High Strength Concrete Square Short Columns Subjected To Biaxial Bending Moments And Strengthened By FRP Laminates*", the ACI 2005 Fall Convention, November 2005, Kansas City, Kansas , USA.
- **Hodhod, O.A.; (2000);** "*Vibrational Characteristics of Long Span Bridges Stayed by Advanced Composite Material Cables*", Mansoura Third International Engineering Conference, Mansoura University, Egypt, April 2000.
- **Khalifa, Magdi A. and Hodhod, Osama A., (1996);** "Behavior of Fiber Reinforced Glass Short Columns with Openings," Proceedings of The Third International Conference on Composite Engineering ICCE/3, New Orleans, Louisiana, USA, pp. 439-440, Jul., 1996.
- **Hodhod, Osama A. and Khalifa, Magdi A., (1996);** "Two Innovative Long Span Bridge Designs Using Advanced Composite Materials," Advanced Composite Materials state-of-the-art Report, Proceedings of The First Middle East Workshop on Structural Engineering, Sharm El-Sheikh, Egypt, pp. 127-146, Jun., 1996.
- **Hodhod, Osama A and Khalifa, Magdi A., (1995);** "Statistical Inference on Strength of Pultruded Glass Fiber Reinforced Plastic," Proceedings of The Second International Conference on Composite Engineering ICCE/2, New Orleans, Louisiana, USA, pp. 331-332, Aug., 1995.
- **Khalifa, Magdi A. and Hodhod, Osama A., (1995);** "In-Plane Behavior of Concrete Reinforced with Glass Fiber Reinforced Grating," Proceedings of The Second International Conference on Composite Engineering ICCE/2, New Orleans, Louisiana, USA, pp. 393-394, Aug., 1995.
- **Khalifa, Magdi A., Tadros, Maher K. and Osama Hodhod, (1995);** "Use of FRP in Major Transportation Facilities," Proceedings, International Association of Bridge and Structural Engineering Symposium, San Francisco, California, Aug., 1995.
- **Khalifa, M.A., Hodhod, O.A., Michaelson, B. and Tadros, M.K.; (1995);** "*Structural and Economical Performance of Advanced Composite Material Bridges*", presented at the 4th International Bridge Engineering Conference, August 28-30, San Francisco, California, 1995.
- **Hodhod, O.A. and Wilson, J.C.; (1992);** "*Seismic Response Characteristics of Cable-Stayed Bridges*", Presented at the annual Conference of the Canadian Society of Civil Engineers, Quebec City, Quebec, May, 1992.

Research and Technical Reports:

- **Hodhod, O. A., Abdel-Ghaffar, M.; and Ibrahim, H.H.; (2003);** "Mechanical Behaviour of Cold Formed Cable Trays", Center for Civil Engineering Research and Studies, Cairo University, Giza, EGYPT, 2003.
- **Ragab, A. M.; Hodhod, O. A.; Hodhod, H. A.; El-Attar, M. M.; Swellam, M. A.; (2002);** "Structural Evaluation and Rehabilitation Design – 120 Low Cost Apartment Buildings, Mokattam Hills", Ministry of Housing, Utilities and New Urban Communities, Cairo, EGYPT, 2002.
- **Hilal, M. S. M.; Hodhod, H. A.; Hodhod, O. A.; (2000); Swellam, M. M.;** "Non-Traditional Aggregates in Egypt, Petrographic, Physical, and Mechanical Properties", The National Center of Housing and Building Research (HBNRC), Dokki, Giza, EGYPT, 2000.

- **Hilal, M. S. M.; Hodhod, H. A.; Hodhod, O. A.; Swellam, M. M.;** (1999); "Translation of the ASTM Standards", The National Center of Housing and Building Research (HBNRC), Dokki, Giza, EGYPT, 1999.
- **Khalifa, Magdi A., Tadros, Maher K., and Hodhod, Osama A.,** (1996); "The Lincoln Composite Bridge: A Feasibility Study," Final Report, submitted to Nebraska Department of Roads, Federal Highway Administration, Center for Infrastructure Research, Lincoln, Nebraska, USA, Feb., 1996.

LANGUAGES:

ARABIC: Native Speaker
ENGLISH: Fluent in Reading, Speaking, and Writing
JAPANESE: BASIC