

CURRICULUM VITAE

PERSONAL INFORMATION

Name : Fareed Mahmoud Elgabbas
Position : Associate Professor, Department of Civil Engineering,
Ain Shams University, Cairo, Egypt.
Founder of ELGABBAS CONSULTING ENGINEERING office
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SUMMARY

1. Associate Professor in civil engineering department for properties and testing of materials as well as design of concrete structures classes.
2. Structural engineer experience for more than seventeen years in analysis, design, check design, detailing, as well as testing and evaluation of:
 - Reinforced concrete structures.
 - Prestressed concrete structures.
 - Bridges
 - Telecommunication (GSM) industry
 - Steel structures.
 - Masonry structures.
 - Water structures (tanks, water, and wastewater treatment plants).
 - Tunnels.
 - Repair and strengthening of concrete structures using FRP, steel sections and concrete jackets.
3. About seventeen years of research experience in field of using advanced composite material, such as Fiber-Reinforced-Polymers (FRP) bars and strips, as internal reinforcement as well as for strengthening of prestressed concrete elements.
4. seventeen years' experience in the field of quality control, evaluation of existing building and non-destructive test.

EDUCATION

Ph.D. **April 2016**
Department of Civil Engineering, Sherbrooke University, Sherbrooke, Quebec, Canada.

M.Sc **2005-2009**
Department of Civil Engineering, Ain Shams University, Cairo, Egypt.
Major: Civil Engineering (Structural).

B.Sc **2000-2005**
Department of Civil Engineering, Ain Shams University, Cairo, Egypt.
Major: Civil Engineering (Structural).
Accumulative Grade: Distinction with honor degree.
Project Grade: (Distinction) (Reinforced concrete project).

ACADEMIC CAREER

Associate Professor Structural Engineering Department, Ain Shams University, Cairo, Egypt.	Oct. 2022 – Present
Assistant Professor Structural Engineering Department, Ain Shams University, Cairo, Egypt.	Dec.2016 – Oct. 2022
Post-Doctoral Fellow Department of Civil Engineering, Sherbrooke University, Sherbrooke, Quebec, Canada.	April 2016 – Dec. 2016
Research Assistant Department of Civil Engineering, Sherbrooke University, Sherbrooke, Quebec, Canada.	July 2012 – March 2016
Teaching and Research Assistant Department of Civil Engineering, Ain Shams University, Cairo, Egypt.	Oct. 2009 – July 2012
Demonstrator Department of Civil Engineering, Ain Shams University, Cairo, Egypt.	May 2006 – Oct. 2009

INDUSTRIAL CAREER

Founder and General Manager for Elgabbas Consulting Engineers (ECE) Cairo, Egypt.	Jan. 2017 – Present
Researcher and Quality Control Engineer Research Center of Properties and Testing of Materials and Quality Control, Department of Civil Engineering, Ain Shams University, Cairo, Egypt.	2006 – 2012 and 2016 – Present
Partner of GSEC Group Cairo, Egypt	June. 2021 – Present
Manger of Design Department Engineering Consultancy Center, Ain Shams University, Cairo, Egypt.	July 2021 – Dec. 2021
Design Manger at Amr Abdelrahman’s Consulting Engineers (AACE) Structural Department, Cairo, Egypt.	Oct. 2016 – Dec. 2021
Senior Engineer Structural designer and site supervisor, Amr Abdelrahman’s Consulting Engineers (AACE), Cairo, Egypt.	Feb. 2009 – July 2012
Junior Engineer Structural designer and site supervisor, Amr Abdelrahman’s Consulting Engineers (AACE), Cairo, Egypt.	May 2005 – Jan. 2009

AWARDS

1. The 2nd Annual Ain Shams University Innovation Competition (عين شمس تبتكر). This award emphasizes structural innovation of concrete manhole covers. First rank in the field of engineering, JV with Eng. Waleed Hilal.
2. The Institutional Scholarship Program for Graduate Students from the Sherbrooke University (fall, 2015). This award emphasizes academic excellence and perseverance (2015).
3. The Institutional Scholarship Program for Graduate Students from the Sherbrooke University (winter, 2015). This award emphasizes academic excellence and perseverance (2015).
4. Quebec Merit Scholarship for Foreign Students, La Fondation, Sherbrooke University (2014). This scholarship aims to recognize a civil engineering student who stands out as extracurricular and professional implications of his academic record and has a strong interest in composite materials.
5. Undergraduate Distinction Award, Ain Shams University, Egypt (2001-2005).

PUBLICATIONS AND TECHNICAL REPORTS

CITATION INDICES

Citations: 664 Google scholar

h-index: 9 Scopus

A) PUBLISHED, ACCEPTED OR SUBMITTED ARTICLES IN REFEREED PAPERS

1. Negm, A., El-Nemr, A., **Elgabbas, F.**, Khalaf, M. (2022). "High and Normal Strength Concrete Using Grounded Vitrified Clay Pipe (GVCP)." *Cleaner Materials*, Vol. 5, No. 100107.
2. Sokairge, H., **Elgabbas, F.**, Rashad, A., Elshafie, H. (2022). "Structural Behavior of RC Beams Strengthened with Prestressed Near Surface Mounted Technique Using Basalt FRP Bars." *Journal of Engineering Structures*, Vol. 250 (113489).
3. Eldaleel, T., **Elgabbas, F.**, Morsy, K., Abdelaziz, A. (2021). "Tensile Capacity of Spliced GFRP Bars using Filled Hollow GFRP Sleeves." *International Journal of Scientific & Engineering Research (IJSER)*, Vol. 12 (1), 372-378.
4. Shamseldein, A., **Elgabbas, F.**, El-Shafie, H. (2021). "Tensile Behavior of Basalt Textile Reinforced Mortar (BTRM)." *Ain Shams Engineering Journal (ASEJ)*, Vol. 13 (1), No. 101488.
5. Mohamed, M., **Elgabbas, F.**, El-Nemr, A., Khalaf, M. (2021). "The Influence of Glass Powder as a Cement Replacement Material on Ultra-High-Performance Concrete." *Al-Azhar University Civil Engineering Research Magazine (CERM)*, Vol. 43 (2).
6. Abdel-Hamid, M., **Elgabbas, F.**, Abdellatif, I., Abdelzاهر, Y. (2021). "Characterization of Basalt and Glass Fiber Reinforced Polymers Bars (BFRP and GFRP)." *Journal of Tianjin University Science and Technology*, ISSN 0493-2137, Vol. 54.
7. Shamseldein, A., **Elgabbas, F.**, El-Shafie, H. (2021). "Strengthening of Reinforced Concrete Slabs Using Basalt Textile Reinforced Mortar (BTRM)." *Journal of Tianjin University Science and Technology*, ISSN 0493-2137, Vol. 54.
8. Negm, A., **Elgabbas, F.**, El-Nemr, A., Khalaf, M. (2021). "Clay Pipe Waste (CPW) as a Partial Cement Replacement." *Al-Azhar University Civil Engineering Research Magazine (CERM)*, Vol. 43 (2).
9. Sokairge, H., **Elgabbas, F.**, Rashad, A., Elshafie, H. (2021). "Characterization of Basalt FRP Compared to Glass FRP Bars" *Journal of International Journal of Scientific & Engineering Research*", Vol. 12 (2).
10. Heshmat, M., **Elgabbas, F.**, Elshafie, H. (2020). "Evaluation of Mechanical Characteristics of Basalt FRP Bars." *International Journal of Scientific & Engineering Research (IJSER)*, Vol. 11 (11).
11. Helal, W., **Elgabbas, F.**, Abdel Zaher, Y. (2020). "Enhancement of Concrete Properties and Structural System for Telecommunication Manhole Covers". *Journal of Al-Azhar University Engineering Sector*, Vol. 15 (57), 953-962.
12. Sokairge, H., **Elgabbas, F.**, Rashad, A., Elshafie, H. (2020). "Long-Term Creep Behavior of Basalt Fiber Reinforced Polymer Bars" *Journal of Construction and Building Materials*, Vol. 260, No. 120437.
13. Gamal, M. **Elgabbas, F.**, El-Feky, M., El-Shafie, H. (2020). "Performance of Geopolymer Mortar Cured under Ambient Temperature." *Journal of Construction and Building Materials*, Vol. 242, No. 118090.
14. Gamal, M. **Elgabbas, F.**, El-Feky, M., El-Shafie, H. (2019). "Assessment of Geopolymer Mortar Cured at Ambient Temperature in Terms of Strength and Workability." *Journal of Al-Azhar*

University Civil Engineering Sector, Vol. 15(57), 953-962.

15. **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2017). "Flexural Behavior of Concrete Beams Reinforced with Ribbed Basalt-FRP Bars under Static Load." *ASCE Journal of Composites for Construction*, Vol. 21 (3).
16. **Elgabbas, F.**, Vincent, P., Ahmed, E., and Benmokrane, B. (2016). "Experimental Testing of Basalt-Fiber-Reinforced Polymer Bars in Concrete Beams." *Journal of Composite: Part B*, Vol. 91, 205–218.
17. **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2016). "Experimental Testing of Concrete Bridge-Deck Slabs Reinforced with Basalt FRP Bars under Concentrated Loads." *ASCE Journal of Bridge Engineering*, Vol. 21 (7).
18. **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2015). "Physical and Mechanical Characteristics of New Basalt-FRP Rods for Reinforcing Concrete Structures." *Journal of Construction and Building Materials*, Vol. 95, 623-635.
19. Benmokrane, B., **Elgabbas, F.**, Ahmed, E., and Cousin, P. (2015). "Characterization and Comparative Durability Study of Glass/Vinylester, Basalt/Vinylester, and Basalt/Epoxy FRP Bars." *ASCE Journal of Composite for Construction*, Vol. 19 (6).
20. **Elgabbas, F.**, El-Ghandour, A., Abdelrahman, A. and El-Dieb, A. (2010). "Different CFRP Strengthening Techniques for Prestressed Hollow Core Concrete Slabs: Experimental Study and Analytical Investigation." *Composite Structures Journal*, Vol. 92 (2), 401-411.

B) ARTICLES IN REFEREED CONFERENCES

1. **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2017). "Influence of Resin Type on The Properties of Basalt FRP Bars." *Proc. of the 5th International Conference on Durability of Fiber Reinforced Polymer (FRP) Composites for Construction & Rehabilitation of Structures [CDCC 2017]*, Sherbrooke, Canada, July 19-21.
2. **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2017). "Characterization and Comparative Durability Study of Basalt and Glass FRP Bars." *Proc. of the 5th International Conference on Durability of Fiber Reinforced Polymer (FRP) Composites for Construction & Rehabilitation of Structures [CDCC 2017]*, Sherbrooke, Canada, July 19-21.
3. **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2016). "Flexure Performance of Concrete Beams Reinforced with Sand-Coated Basalt and Glass FRP Bars." *Proc. of the 7th International Conference on Advanced Composite Materials in Bridges and Structures [ACMBS 2016]*, Vancouver, British Columbia, Canada, August 24-26.
4. **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2016) "Flexural Behavior & Bond-Dependent Coefficient of Basalt-Fiber-Reinforced Polymer (BFRP) Bars in Concrete Beams." *Proc. Of Annual Conference of the Canadian Society for Civil Engineering [CSCE 2016]*, London, Ontario, Canada. June 1-4, Vol. 3, 2039-2049.
5. **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2015). "Laboratory Testing of Edge-Restrained Concrete Bridge-Deck Slabs Reinforced with Basalt-FRP Bars." *Proc. of the 5th International Conference on Construction Materials: Performance, Innovations and Structural Implications [ConMat 2015]*, BC, Canada. August 19-21.
6. **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2014). "Development and Characterization of Basalt FRP Reinforcing Bars for Concrete Structures." *Proc. of the 7th International Conference on FRP Composites in Civil Engineering [CICE 2014]*, Vancouver, Canada. August 20-22.
7. **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2013). "Basalt FRP Reinforcing Bars for Concrete Structures." *Proc. of the 4th Asia-Pacific Conference on FRP in Structures [APFIS 2013]*, Melbourne, Australia. December 11-13.

C) POSTER PRESENTATIONS

1. **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2015). “Characterization of Newly Developed Basalt Fiber-Reinforced Polymer (BFRP) Bars.” NSERC annual meeting, May 1st, Université de Sherbrooke, Quebec.
2. **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2015). “Basalt FRP Reinforcing Bars for Concrete Bridge Deck Slabs.” NSERC annual meeting, May 1st, Université de Sherbrooke, Quebec.

D) SELECTED TECHNICAL REPORTS

- A) **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2014). “Testing of Concrete Bridge Deck Slabs Reinforced with Basalt FRP Bars under Concentrated Loads.” Technical Report. September, 25 p.
- B) **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2014). “Flexure Test of Concrete Beams Reinforced with BFRP, GFRP and Steel Bars.” Technical Report. September, 20 p.
- C) Ahmed, E., **Elgabbas, F.**, and Benmokrane, B. (2013). “Field Testing of the Hybrid-Reinforced Continuous Concrete Bridge on Chemin Dunant: Bridge P-15604.” Technical Report Submitted to Ministry of Transportation of Quebec, Canada. May, 31 p.
- D) **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2013). “Tensile Properties, Flexure Properties, Transverse Shear Strength and Interlaminar Shear Strength (Short-Beam Shear Strength) of BASA-Prestress Fiber-Reinforced Polymer (FRP) Bars of Size 7 mm: Reference, 1000-hr, 3000-hr, and 5000-hr Alkaline Conditioned Specimens.” Technical Report, May, 31 p.
- E) **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2013). “Transverse Shear Strength, Flexure Properties and interlaminar Shear Strength (Short-Beam Shear Strength) of Vinylester and Epoxy Basalt and Glass Fiber-Reinforced Polymer of Bars of Size 6 mm: Reference, 1000-hr, 3000-hr and 5000-hr Alkaline Conditioned specimens.” Technical Report. April, 32 p.
- F) **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2013). “Tensile Properties, Transverse Shear Strength and Interlaminar Shear Strength (Short-Beam Shear Strength) of BASA Basalt Fiber-Reinforced Polymer (BFRP) Bars of Size 8 mm (Codes 43 and 51): Reference, 1 and 3 Months Alkaline-Conditioned Specimens.” Technical Report. May, 31 p.
- G) **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2013). “Tensile Properties, Transverse Shear Strength, Flexure Properties, and Interlaminar Shear Strength of BASA Basalt Fiber-Reinforced Polymer (BFRP) Bars of Size 12 mm: Code 43.” Technical Report. May, 22 p.
- H) **Elgabbas, F.**, Ahmed, E., and Benmokrane, B. (2013). “Creep Rupture Strength of FiReP Glass Fiber-Reinforced Polymer (GFRP) Rebars of Size 8-mm – 3rd generation)” Technical Report. February, 4p.
- I) Abdelatif, I. **Elgabbas, F.**, and Morsy, Khalid, K. (2012). “Loading test of El_Shahid Bridge.” Ring Road, Cairo, Egypt.
- J) Rashad, A., **Elgabbas, F.**, and Fathy, A. (2011). “Loading Test of Concrete Bridge between axis (W2) and (A4) - Dahshour Bridge, Cairo-El-Fayoume Road, Egypt.

TEACHING INTERESTS

1. Properties and Testing of Materials
2. Repair and Strengthening of Concrete and Steel Structures
3. Design of Concrete Structures
4. Design of Prestressed Concrete
5. Design with Fiber Reinforced Polymers (FRP)

PARTICIPATE IN TEACHING OF THE FOLLOWING COURSES FOR UNDERGRADUATE STUDENTS AT AIN SHAMS UNIVERSITY, CAIRO, EGYPT

1. Properties and Testing of Materials (1), 1st year

Course Contents:

- Specifications and standard specifications of engineering materials and products.
- Testing machines and its calibration, strain gauges.
- Properties and testing of building stones, Timber, Bricks.
- Advanced composite materials (FRP).
- Metallic building materials and units: structural and reinforcing steel, welding and welded splice.
- Behavior of metals under static loads: tension, compression, flexure, shear and surface hardness of metals.
- Behavior of metals under repeated loads (fatigue).

Laboratory:

- Testing machines and its calibration, strain gauges.
- Testing of non-metallic building materials and units: Physical tests (density, unit weight, absorption, permeability, shrinkage, etc.). Mechanical tests (tension, compression, flexure, shear, etc.).
- Testing of metallic building materials and units: mechanical tests (tension, compression, flexure, shear, hardness, impact, and fatigue).

2. Properties and Testing of Materials (2), 2nd year

Course Contents:

- Concrete materials: Cement, Aggregate, Mixing water, Admixtures.
- Concrete manufacturing: Storage, Mixing, Transportation, Pouring, Compacting, Curing, Construction Joints, Shrinkage and movement joints, Formwork, Ready mixed concrete.
- Properties of fresh concrete: Consistency, Workability, Cohesion, Segregation, Bleeding.
- Properties of hardened concrete: Strength, Volumetric changes, Elasticity and creep, Durability of concrete.
- Mix design: Engineered methods, Empirical methods.
- Non-destructive testing: Rebound hammer, Ultrasonic, Pulse velocity, Core, Steel detection.
- Statistical analysis: To judge the concrete quality.
- Hot weather concreting: Definition, Problems, Precautions.
- Repair and strengthening of R.C. structures: Assessment methods, Repair materials.

Laboratory:

- Cement tests: fineness, setting time, soundness, compression, volumetric weight.
- Aggregate: grading, bulking, soundness, crushing, shape, volumetric weight, specific weight, organic impurities, abrasion, impact
- Fresh concrete: slump, compacting factor, V.B., flow table, bleeding, air content.
- Hardened concrete: compression, tension, flexure, shear, bond, shrinkage modulus of elasticity, permeability.
- Non-Destructive testing: core, loading test, rebound hammer, ultrasonic.

3. Repair and Strengthening of Materials, 4th year

Course Contents:

- Causes of deterioration of concrete structures.
- Evaluation of concrete structures.
- Repair and strengthening materials (types, selection, handling).
- Bond between repair and strengthening materials and substrate concrete.
- Different repair and strengthening techniques.
- Repair and strengthening of some concrete elements (footing, column, beam, slab... etc.).
- Structural analysis of repair and strengthening, Design of repair and strengthening.

Laboratory:

- Non-Destructive testing of concrete structures: inspection, rebound hammer, ultrasonic, core, loading test.
- Tests of repair and strengthening materials: physical, mechanical.
- Bond between repair and strengthening materials and substrate concrete: shear tests, tension tests.
- Tests of repaired and strengthened concrete elements: columns, beams and slabs.

ACADEMIC ADVISOR FOR:

- Civil-S, Student's activity in Ain Shams University, Cairo, Egypt. 2017-2018
- ASCE Student Chapter, Student's activity in Ain Shams University, Cairo, Egypt. 2017-2018
- Civil-S, Student's activity in Ain Shams University, Cairo, Egypt. 2018-2019

GRADUATE STUDENT

1. Mohammed Ibrahim, PhD, Ain Shams University, (Ongoing).
2. Mohammed Heshmat Mahmoud, PhD, Ain Shams University, (Ongoing).
3. John Bekhit, MSc, Ain Shams University, (Ongoing).
4. Ayman Zakaria Shamseldein, Ph.D., Ain Shams University, 2022.
5. Mennat Allah Mohamed Mohamed, MSc, Ain Shams University, 2022.
6. Mohammed Mostafa Abdelhamed, MSc, Ain Shams University, 2022.
7. Ali Alaa Eldin Abdelhaleem Negm, MSc, Ain Shams University, 2022.
8. Mohamed Gamal Ahmed, MSc, Ain Shams University, 2019.
9. Waleed Helal Abd Elrahman, MSc, Ain Shams University, 2021.
10. Mohammed Heshmat Mahmoud, MSc, Ain Shams University, 2021.
11. Hesham Ahmed Sokairge Mohammed, Ph.D., Ain Shams University, 2021.
12. Taha Hassan Mokhtar Ahmed El-Daleel, MSc, Ain Shams University, 2021.

MEMBERSHIP OF LOCAL, REGIONAL AND INTERNATIONAL PROFESSIONAL INSTITUTIONS - PROFESSIONAL

1. Engineer and Member of the Egyptian Engineers Syndicate
2. Member of the American Concrete Institute (ACI)
3. Member of the American Society of Civil Engineers (ASCE)
4. Member of Canadian Society of Civil Engineering (CSCE).
5. Member of the Research Center of Concrete Infrastructures of Quebec (CRIB).

REFERENCES

Prof. Amr Ali Abdelrahman

Professor and head of Concrete Structures, Structural Department, Ain Shams University

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Prof. Brahim Benmokrane, P. Eng., Ph.D., FRSC, FACI, FCSCE, FIIFC, FEIC, FCAE

Professor and holder of the NSERC/Industrial Research Chair in Innovative FRP Composite Reinforcements for Concrete Infrastructure and a Tier-1 Canada Research Chair in Advanced Composite Materials for Civil Structures in the Department of Civil Engineering at the University of Sherbrooke, University of Sherbrooke

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