Curriculum Vitae

AHMED S. FARGHALY

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EDUCATION

• **Ph.D.**	Hokkaido University, Sapporo, Japan, April 2001 – March 2005
AREA	Structural Engineering
CREDITS	Award of **Excellence** for the Ph.D., Credit courses with **A**
• **M.Eng.**	Hokkaido University, Sapporo, Japan, April 1999 – March 2001
AREA	Structural Engineering.
CREDITS	Award of **Excellence** for the M.Eng., Credit courses with **A**
• **B.Sc., Honors,**	Assiut University, Assiut, Egypt, September 1992 – June 1997
AREA	Civil Engineering
CREDITS	**First student** in the class with average 86.4%.

EMPLOYMENT

Position	Institution	Location	From - To
Research Professional	Faculty of Engineering University of Sherbrooke	Canada	Jan. 2010 – present
JSPS Post-Doctoral	Graduate School of Engineering Hokkaido University	Japan	Sept. 2007 – Aug. 2009
Associate Professor	Faculty of Engineering Assiut University	Egypt	December 2011 – Present
Lecturer	Faculty of Engineering Assiut University	Egypt	June 2005 – December 2011
Assistant Lecturer	Faculty of Engineering Assiut University	Egypt	April 2001 – May 2005
Demonstrator	Faculty of Engineering Assiut University	Egypt	October 1997 – March 2001

AWARDED RESEARCH FELLOWSHIPS (GRANTS)

- Research fellowship granted from the Ministry of Education, Culture, Sports, Science and Technology of Japan (Monbukagakusho) for the period: October 1998 – March 2004 to study for M.Eng and Ph.D, ***Hokkaido University, Japan***.

- Research fellowship granted from the Japan Society for the Promotion of Science (**JSPS**) for the period: September 2007 – August 2009, ***Hokkaido University, Japan***.

- Research fellowship granted from the Canada Research Chair in Advanced Composite Materials for Civil Structures for the period: January 2010 – present, ***University of Sherbrooke, Canada***.

PROFESSIONAL MEMBERSHIPS

- Member of Canadian Society of Civil Engineering, since 2010.
- Member of American Concrete Institute, since 2008.
- Member of Japan Concrete Institute, since 2001.
- Member of Japan Society of Civil Engineering, since 1999.
- Member of Egyptian Syndicates of Engineers, since 1997.
- Member of Egyptian Society of Engineers, since 1997.

RESEARCH

Post-Doctoral Research Associate (January 2010 – present)

University of Sherbrooke, Canada, Canada Research Chair in Advanced Composite Materials for Civil Structures

Research fields

- Bond stress-slip relationship for FRP bars in concrete subjected to reversed cyclic loads.
- Behavior of shear walls reinforced with FRP bars: *experimental and numerical approach.*
- Slab-wall joint connection subjected to out-of-plane seismic loads.
- Seismic behavior of FRP-reinforced concrete columns.
- UHPFRC beams reinforced with steel and/or FRP bars.
- Short columns reinforced entirely with FRP bars: *experimental and strength model*.
- Serviceability and deflection behavior of flexural member (Beams and One-way Slabs).
- Shear strength of FRP-reinforced deep beams: *experimental and numerical approach*.
- Behavior of concrete beams strengthened with near surface mounted (NSM) FRP Bars.
- FEM numerical modeling of structural members internally reinforced with FRP bars and externally strengthened with FRP sheets (shear walls, deep beams, two-way slabs, bridges).

Post-Doctoral Research Associate (September 2007 – August 2009)
Hokkaido University, Japan, Japan Society for the Promotion of Science (JSPS)

Research fields

- Punching of two-way slabs reinforced internally with FRP bars, or strengthened externally with FRP sheets: *experimental and numerical approach.*
- Numerical modeling of the punching failure mechanism of two-way flat slabs.
- Behavior of masonry walls strengthened with FRP sheets: *experimental and numerical approach*.
- Shear strength of UHP concrete steel-reinforced slender Beams: *experimental and numerical approach.*

Lecturer (June 2005 – August 2007)
Assiut University, Egypt

Research fields

- Strengthening of RC columns with CFRP sheets: *experimental and numerical approach*.

Research Assistant (October 1998 – March 2005)
Hokkaido University, Japan, Ministry of Education, Culture, Sports, Science and Technology of Japan (Monbukagakusho)

Research fields

- Punching failure mechanism of open sandwich slabs: *experimental and numerical approach*.
- FEM numerical modeling of the punching failure mechanism.
  - Introduce three-dimensional failure criteria for concrete.
  - Introduce newly approach solid element representing the concrete and the reinforcement.
  - Introduce a surface bond-link element (instead of the traditional nodal spring element).

COMPUTER SKILLS

- Extensive knowledge of Finite Element Method (FEM), as it was the key to build program software to simulate several structural members (two-way slabs, slender beams, columns, box girders) that been used during the research period of the candidate.
- Programming the software using Fortran, and C^{++}.
- Knowledge of analytical simulation packages (SAP, ANSYS, VecTor).

CONTRIBUTION TO THE ENGINEERING PROFESSION

- Member of the organizing committee of the Fourth Int. Conf. on Durability & Sustainability of Fibre Reinforced Polymer (FRP) Composites for Construction and Rehabilitation, 20-22 July 2011, Quebec City, Canada.
- Reviewer of technical papers for international journals (ASCE, ACI, Eng. Str.).

SUPERVISION OF GRADUATE STUDENTS

Master Students:

- Effect of different parameters on the ultimate strength of RC box girders: numerical investigation (completed).
- Strengthening of RC columns with CFRP sheets: experimental and numerical approach (completed).

Ph.D. students:

- Deformability behavior of FRP-reinforced shear walls: *experimental and numerical approach* (*in progress*).
- Behavior and distortion of FRP-reinforced low-rise (squat) walls (*in progress*).
- Seismic behavior of FRP-reinforced concrete columns (*in progress*).
- Confinement strength model for FRP-reinforced columns (*in progress*).
- Shear strength of FRP-reinforced concrete deep beams: *experimental and numerical approach* (*in progress*).
- UHPFRC beams reinforced with steel and/or FRP bars (completed).
- Behavior of shear walls reinforced with FRP bars subjected to in-plane reversed cyclic loading: *experimental and numerical approach* (completed).
- Experimental investigation of short columns reinforced entirely with FRP bars (completed).
- Flexural and serviceability performance of one-way slabs reinforced with FRP bars (completed).

TEACHING EXPERIENCE

Post-Doctoral Research Associate (Sep. 2007 – Aug. 2009 and Jan. 2010 – present)

- Advanced concrete structures.
- Reinforced concrete bridges.
- Seismic analysis.
- Strengthening and rehabilitation of structural members using FRP sheets.
- Reinforcing structural members using FRP bars.

Lecturer (June 2005 – Aug 2007 and Sept. 2009 – Dec. 2009)

- Design of reinforced concrete structures.
- Design of reinforced concrete bridges.
- Theory of structure.
- Supervise the graduating students in the project of "Analysis of Reinforced Concrete Structures".

Demonstrator (October 1997 – October 1998)

- Design of reinforced concrete structures.
- Soil mechanics and design of foundation.
- Theory of structure.

LIST OF MAJOR PUBLICATIONS

Reviewed Journal

1. Mohamed, K., **Farghaly, A. S.**, and Benmokrane, B. (2015). "Strut-and-Tie Model Analysis for Strength Prediction of Concrete Deep Beams Reinforced With FRP Bars." ***ACI** Str. J.*, (submitted 20 January 2015).
2. Mohamed, K., **Farghaly, A. S.**, and Benmokrane, B. (2014). "Effect of Vertical and Horizontal Web Reinforcement on the Strength and Deformation of Concrete Deep Beams Reinforced with Glass-FRP Bars." ***ASCE** J. Str. Eng.*, (submitted 31 December 2014).
3. Mohamed, N., **Farghaly, A. S.**, and Benmokrane, B. (2014). "Aspects of Deformability of Shear Walls Reinforced with GFRP bars." ***ASCE** J. Compos. Constr.*, (accepted 12 August 2014, available online).
4. Mohamed, N., **Farghaly, A. S.**, Benmokrane, B., and Neale, K. W. (2014). "Drift Capacity Design of Shear Walls Reinforced with GFRP Bars." ***ACI** Structural Journal*, Vol. 111, No. 6, 1397-1406.
5. Tobbi, H., **Farghaly, A. S.**, Benmokrane, B. (2014). "Strength Model for Concrete Columns Reinforced with FRP Bars and Ties." ***ACI*** Structural Journal, Vol. 111, No. 4, 789-798.
6. Mohamed, N., **Farghaly, A. S.**, Benmokrane, B., and Neale, K. W. (2014). "Numerical Simulation of Mid-Rise Concrete Shear Walls Reinforced with GFRP Bars subjected to Lateral Displacement Reversals." *Journal of Engineering Structures*, Vol. 73, 62-71.
7. Mohamed, N., **Farghaly, A. S.**, Benmokrane, B., and Neale, K. W. (2014) "Experimental Investigation of Concrete Shear Walls Reinforced with Glass-Fiber-Reinforced Bars under Lateral Cyclic Loading." ***ASCE** J. Compos. Constr.*, Vol. 18, No. 3, 04014001.
8. Mohamed, N., **Farghaly, A. S.**, Benmokrane, B., and Neale, K. W. (2014). "Flexure and Shear Deformation of GFRP-Reinforced Shear Walls." ***ASCE** J. Compos. Constr.*, Vol. 18, No. 2, 04013044.
9. Tobbi, H., **Farghaly, A. S.**, Benmokrane, B. (2014). "Behavior of Concentrically Loaded FRP-RC Columns with Varying Reinforcement Types and Ratios." ***ACI** Structural Journal*, Vol. 111, No. 2, 375-385.
10. **Farghaly, A. S.** and Benmokrane, B. (2013) "Shear Behavior of FRP-Reinforced Concrete Deep Beams without Web Reinforcement." ***ASCE** J. Compos. Constr.*, Vol. 17, No. 6, 04013015.1-10.
11. Tobbi, H., **Farghaly, A. S.**, Benmokrane, B. (2012). "Concrete Columns Reinforced Longitudinally and Transversally with GFRP Bars." ***ACI** Structural Journal*, Vol. 109, No. 4, 551-558.
12. Kassem, C., **Farghaly, A. S.**, and Benmokrane, B. (2011). "Evaluation of Flexural Behavior and Serviceability Performance of Concrete Beams Reinforced with FRP Bars." ***ASCE** J. Compos. Constr.*, Vol. 15, No. 5, 682-695.
13. **Farghaly, A. S.** and Ueda, T. (2011). "Fatigue Behavior of RC Slabs Strengthened Externally with CFRP Sheets." *Journal of Engineering Sciences*, Vol. 39, No. 2, 269-282.
14. **Farghaly, A. S.** and Ueda, T. (2011). "Prediction of Punching Shear Strength of Two-Way Slabs Strengthened Externally with FRP Sheets." ***ASCE** J. Compos. Constr.*, Vol. 15, No. 2, 181-193.
15. **Farghaly, A**. **S.** and Ueda, T. (2009). "Punching Strength of Two-way Slabs Strengthened Externally with CFRP Sheets," Journal of the Japan Concrete Institute, ***JCI***, Vol. 31, No. 2, pp. 493-498.

16. **Farghaly, A**. **S.**, Furuuchi, H. and Ueda, T. (2005). "Punching Shear Failure Mechanism of Open Sandwich Slab and its Parameters' Effects," Journal of Advanced Concrete Technology, ***JCI***, Vol. 3, No. 2, pp. 283-296.
17. **Farghaly, A**. **S.**, Ueda, T. and Furuuchi, H. (2004). "Numerical Analysis of the Punching Shear Failure Mechanism and Strength of Open Sandwich Slab," Journal of Structural Engineering, ***JSCE***, Vol. 50A, pp. 1099-1110.
18. **Farghaly, A**. **S.**, Ueda, T., Konno, K., Takahashi, R. (2002). "3D FEM Analysis of Open Sandwich Beams," Proceeding of the Japan of Concrete Institute, ***JCI***, Vol. 24, No. 2, pp. 103-108.
19. **Farghaly, A. S.**, Ueda, T. and Konno, K. (2001). "Experimental Study of Stud Shear Connector for Steel-Concrete Composite Beam." Proc. of Hokkaido Chapter of the ***JSCE***, Vol. 57 (A), pp. 540-543.
20. **Farghaly, A**. **S.**, Ueda, T., Sato, Y. (2000). "A Proposal of Failure Criteria for 3D Concrete Structures," Proc. of Hokkaido Chapter of the ***JSCE***, Vol. 56(A), pp. 528-531.

Books

21. **Ahmed Farghaly** (2011). "Prediction of Punching Strength of Steel-Concrete Open Sandwich Slabs: Experimental and Numerical Simulation Study." VDM Verlag Dr. Muller GmbH & Co. KG Dudweiler Landstr. 99, 66123 Saarbrucken, Germany ISBN: 978-3-639-37661-6.

Reviewed Conferences

22. **Farghaly, A. S.**, Mohamed, N., and Benmokrane, B. (2015) "Stiffness and Deformability of Concrete Shear Walls Reinforced with Glass-Fiber-Reinforced Bars." The 11th Canadian Conference on Earthquake Engineering, *Canadian Association for Earthquake Engineering* (11CCEE), Victoria, BC, Canada, 21 – 24 July, 8 p
23. **Farghaly, A. S.** and Benmokrane, B. (2015) "Seismic Response Modification Factors for GFRP-Reinforced Concrete Shear Walls." The 11th Canadian Conference on Earthquake Engineering, *Canadian Association for Earthquake Engineering* (11CCEE), Victoria, BC, Canada, 21 – 24 July, 8 p.
24. Mohamed, N., **Farghaly, A. S.**, and Benmokrane, B. (2015) "Innovative Bond Test of FRP Bars in Concrete under Reversed Cyclic Loading." The Fifth International Conference on Construction Materials: P*erformance, Innovations and Structural Implications* (CONMAT15), Whistler, BC, Canada, 19 – 21 August, 10 p.
25. Arafa, A., **Farghaly, A. S.**, and Benmokrane, B. (2015) "UHPFRC Joint between GFRP RC Precast Bridge Deck Panels." The Fifth International Conference on Construction Materials: P*erformance, Innovations and Structural Implications* (CONMAT15), Whistler, BC, Canada, 19 – 21 August, 12 p.
26. Mohamed, K., **Farghaly, A. S.**, Benmokrane, B. (2014). "Effect of Web Reinforcement in FRP-Reinforced Deep Beams." The 7th International Conference in FRP Composites in Civil Engineering, *CICE2014*, Vancouver, BC, Canada, 20 – 22 August, 6 p.
27. Mohamed, N., **Farghaly, A. S.**, and Benmokrane, B. (2013) "Strength Reduction Factor of GFRP-Reinforced Shear Walls." 4th Asia-Pacific Conference on FRP In Structures (APFIS2013), December 2013, Melbourne, Australia.

28. Mohamed, K., **Farghaly, A. S.**, Benmokrane, B. (2013). "Evaluation of Strut-and-Tie Models for FRP-Reinforced Deep Beam." Canadian Society of Civil Engineering, *CSCE2013*, Montreal, Quebec, Canada, 29 May – 3 June, 10 p.
29. Mohamed, N., **Farghaly, A. S.**, Benmokrane, B., Neale, K. (2013). "Evaluation of GFRP-Reinforced Shear Walls." Canadian Society of Civil Engineering, *CSCE2013*, Montreal, Quebec, Canada, 29 May – 3 June, 10 p.
30. Abdul-Salam, B., **Farghaly, A. S.**, and Benmokrane, B. (2013). "Evaluation of Shear Behavior for One-Way Concrete Slabs Reinforced with Carbon-FRP Bars." Canadian Society of Civil Engineering, *CSCE2013*, Montreal, Quebec, Canada, 29 May – 3 June, 10 p.
31. Mohamed, N., **Farghaly, A. S.**, Benmokrane, B., Neale, K. (2012). "Cyclic load behavior of GFRP reinforced concrete shear wall: experimental approach." 6th International Conference on Advanced Composite Materials in Bridges and Structures (***ACMBS-VI***), Kingston, Ontario, Canada, 22 – 25 May, (CD-ROM).
32. Mohamed, N., **Farghaly, A. S.**, Benmokrane, B., Neale, K. (2012). "Evaluation of a Shear Wall Reinforced with Glass FRP Bars Subjected to Lateral Cyclic Loading." 3rd Asia-Pacific Conference on FRP in Structures (***APFIS2012***) Sapporo, Japan, February 2 – 4, (CD-ROM).
33. **Farghaly, A. S.** and Ueda T. (2009). "Analytical Evaluation of Punching Strength of Two-way Slabs Strengthened Externally with FRP Sheets," 9th International Symposium on Fiber Reinforced Polymer Reinforcement for Concrete Structures (***FRPRCS-9***) Sydney, Australia, July 13 – 15, (CD-ROM).
34. **Farghaly, A. S.** and Ueda T. (2008). "Numerical Analysis of Punching Failure Mechanism and Debonding of Slabs Strengthened With Externally Bonded FRP," 5th International Conference on Advanced Composite Materials in Bridges and Structures (***ACMBS-V***) Winnipeg, Manitoba, Canada, September 22 – 24, (CD-ROM).
35. **Farghaly, A. S.**, Ueda, T. and Furuuchi, H. (2003). "Analytical Computation of the Punching Shear Strength of Open Sandwich Slab," 5th Japanese-German International Symposium on Steel and Composite Bridges, Osaka, Japan, pp. 277-284.
36. Konno, K., **Farghaly, A. S.**, and Ueda, T. (2001). "An Experimental Study on the Bond-Slip Relationship between the Concrete and Steel with Stud," International Symposium on Connections between Steel and Concrete, Stuttgart, Germany, Vol. 2, pp. 1343-1350.

PROFESSIONAL BACKGROUND

- Structural Engineering Firm, Assiut, Egypt
  July 1997 – September 1998
  Structural engineer
- Structural Engineering Firm, Assiut, Egypt
  April 2005 – present
  Consultant structural engineer
  Design of several industrial constructions (Extrusion Plant, Substations, foundation of Melting Furnace 60ton, Cooling Chamber 30ton, Conference Hall, etc…).
- Design several structural elements for the industrial partners through the *Canada Research Chair in Advanced Composite Materials for Civil Structures*, Canada
  January 2010 – present

Post-Doctoral Research Associate

- Design for the Monopole Foundation, Azerbaijan
- Design of Sydney Wharf – Milson Point, Sydney, Australia
- Design of part of the Foundation of Metro of Toronto, Toronto, Canada
- Design of Concrete Plank of Wyndham Jetty, Wyndham, Australia

Detailed information is available in the "Experience Record" section.