

CURRICULUM VITAE

Dr. Eng. Alaa Rashad Gabr, PhD

Associate Professor
Public Works Department Engineering,
Faculty of Engineering, Mansoura University, Egypt

Date of Birth: 05/08/1980

Nationality: Egyptian

Marital Status: Married

E-mail: eng-alaal400@mans.edu.eg

Phone: +20572369484, Cell phone: +201003822251

Mailing Address: Public Works Eng. Dept., Faculty of Engineering,
Mansoura University, Mansoura, Dakahlia, Egypt, 35516



EDUCATION

- Mar 2009 – Dec 2012 **Ph.D.** in Civil Engineering, University of South Australia (UniSA), South Australia, Australia
Dissertation: " Repeated Load Testing for Primary Evaluation of Recycled Concrete Aggregate in Pavements"
Major: Pavement Engineering; **Minor:** Geotechnical Engineering
- Oct 2005 – May 2008 **M.Sc.** in Public Works Engineering, Mansoura University, Mansoura, Egypt.
Thesis: " Evaluation of Econocrete with Recycled Materials in Highways Construction"
Major: Pavement Engineering; **Minor:** Geotechnical Engineering
- Sept 1997 – June 2002 **B.Sc.** in Civil Engineering, Mansoura University, Mansoura, Egypt, Grade: **Very Good with Honor's Degree (Ranked Fifth)**

ACADEMIC EMPLOYMENT HISTORY

- July 2018 – Present **Mansoura University, Egypt**
Associate Professor
Public Works Engineering Department
Duties include teaching different graduate and undergraduate courses, supervising MSc and PhD graduate students, share in different department and faculty committees.
- Apr 2013 – July 2018 **Mansoura University, Egypt**
Assistant Professor
Public Works Engineering Department
Duties include teaching different graduate and undergraduate courses, supervising MSc and PhD graduate students, share in different department and faculty committees.
- Sep. 2017 – Aug. 2018 **Higher institute of Engineering & Technology, New Damietta**
Adjunct Faculty
Department of Civil Engineering

- Duties include teaching different undergraduate courses such as the Senior Graduation project, Transportation and Traffic Engineering, Pavement Design, and Railway Engineering, share in different department and institute committees, participated in the preparation and fulfillment of the accreditation of the institute from the quality assurance authority, Ministry of Higher education.
- 2013 – Present **Higher institute of Engineering & Technology, New Damietta**
Visiting Professor
 Duties include teaching different undergraduate courses such as the Senior Graduation project, Transportation and Traffic Engineering, Highway and Airport engineering, Pavement Design, and Railway Engineering.
- Jan. 2016 – July 2016 **Delta Higher Institute for Engineering & Technology, Mansoura**
Visiting Professor
 Duties include teaching the Senior Graduation project.
- 2013 – 2015
 2017 – 2018 **Misr Higher Institute for Engineering & Technology, Mansoura**
Visiting Professor
 Duties include teaching different undergraduate courses such as the Senior Graduation project, Highway and Airport engineering, Soil Mechanics, Railway Engineering
- 2016 – Present **Nile Academy for Engineering & Technology, Mansoura**
Visiting Professor
 Duties include teaching different undergraduate courses such as the Senior Graduation project, Transportation and Traffic Engineering, Soil Mechanics, Highway and Airport engineering
- Mar 2009 – June 2012 **University of South Australia, Australia**
Teaching and Research Associate:
 Departement of Civil and Environmental Engineinrg, Natural and Built Environments School
 Duties included:
- Conducting research work related to the Australian Road Research Board (ARRB) projects during my PhD.
 - Assisted Dr Donald Cameron in instructing and tutoring the following courses:
 - CIVE 1004: Engineering design and innovations,
 - CIVE 2005: Structure mechanics,
 - CIVE 3008: Rock and Soils,
 - CIVE 3007: Geotechnical Engineering.
 - CIVE 4031: civil engineering project formulation on “use of Recycled Concrete Aggregates as Base Course Material for Pavements” (July-December 2010)
 - CIVE 3008: Rock and soil mechanics project (March-June 2011)
- May 2008 - Mar 2009
 June 2012 – Apr 2013 **Mansoura University, Egypt**
Teaching Associate:
 Public Works Eng. Dept., Faculty of Engineering
 Duties included tutoring the following undergraduate courses: Senior Graduation project, Highway and Airport Engineering, Transportation & Traffic Engineering.

Oct 2005 - May 2008 **Mansoura University, Egypt**
Teaching Assistant
Public Works Eng. Dept., Faculty of Engineering

Duties included conducting research work and tutoring the following undergraduate courses: Senior Graduation project, Highway and Airport Engineering, Transportation & Traffic Engineering, Railway Engineering, Soil Mechanics, Statistics.

ADMINISTRATIVE POSITIONS HISTORY

July 2013 – Present **Mansoura University, Egypt**
Quality Manager of the Highway and Airport Engineering Laboratory, Public Works Eng. Dept., Faculty of Engineering

Aug 2013 – Oct 2015 **Mansoura University, Egypt**
Director of the Transportation and Traffic Engineering Laboratory
Public Works Eng. Dept., Faculty of Engineering

Nov 2013 – Aug 2014 **Mansoura University, Egypt**
Quality control Coordinator
Public Works Eng. Dept., Faculty of Engineering

Mar 2018 – Aug 2018 **Higher institute of Engineering & Technology, New Damietta**
Director of highway engineering laboratory
Civil Engineering Dept.

UNIVERSITY SERVICE

- Member of the postgraduate studies and research affairs Committee, Faculty of Engineering, Mansoura University, Egypt, August 2019 – Present.
- Member of the modification committee for the Postgraduate regulations based on Credit Hour System, Faculty of Engineering, Mansoura University, August – Oct. 2019.
- Quality Manager of the Highway and Airport Engineering Laboratory, Mansoura University, Mansoura, Egypt, July 2013 – Present.
- Director of the Transportation and Traffic Engineering Laboratory, Mansoura University, Mansoura, Egypt, August 2013 – October 2015.
- Laboratories Committee, Faculty of Engineering, Mansoura University, Egypt, August 2015 – August 2016.
- Quality control coordinator, Public Works Eng. Dept., Faculty of Engineering, Mansoura University, Egypt, November 2013 - August 2014.
- Quality Manager of the project for the Development and ISO Certification of the Highway and Airport Engineering Laboratory, Faculty of Engineering, Mansoura University, Egypt, July 2013 – June 2015.
- Participated in the Accreditation of the Faculty of Engineering, Quality Assurance Unit, Faculty of Engineering, Mansoura University, March 2014- March 2016.
- Participated in the preparation and revision of the Curriculum for Graduate Programs of the Public works Eng. Dept. based on Credit Hour System, Faculty of Engineering, Mansoura University, Feb.-May 2014.
- Member of the Center for studies, research and engineering consultation, Faculty of Engineering, Mansoura University, Egypt, April 2013 - Present.

RESEARCH EXPERIENCE

Mansoura University (April 2013 – Present)

Research Focus Areas:

- Pavement Material Characterization and Modeling
- Recycled Materials and By-Products for Pavement Applications
- Nano-and polymer Modified Asphalt binders and Mixtures
- Warm and Cold Asphalt Mixes
- Bio-Polymers in Subgrade Stabilization
- Long Term Pavement Performance
- Pavement Management Systems
- Traffic Characterization and Simulation
- Mechanistic-Empirical Pavement Design
- Numerical modelling using finite element analysis in pavement and geotechnical engineering

Specific Research Projects:

Master Thesis Advisor (In progress):

1. Baha El-Tantawy “Effect of Aging on the Physical Chemical and Rheological Properties of Neat and Modified Asphalt Cement from Different Suppliers” Mansoura University.
2. Manar Zaki “Laboratory investigation of asphalt mixtures containing byproducts and agricultural waste” Mansoura University.
3. Amal Hegazy “Potential Use of Cold Asphalt Mixes for the Construction of Low Volume Roads in Egypt” Mansoura University.
4. Mohamed Al-Khawaga “Framework for Performance-Based Pavement Management System.” Mansoura University.

Master Thesis Advisor (Completed):

1. Amira Al-Shourbagy “Potential use of industrial waste oil as a rejuvenator for the reclaimed asphalt pavement” (October 2019), Mansoura University.
2. Samar Taha “Modelling California Bearing Ratio using engineering properties” (July 2019), Mansoura University.
3. Rabah Mousa “Resilient modulus characterization of biopolymer treated subgrade soils and unbound granular base materials” (March 2019), Mansoura University.
4. Ahmed Al-Ashwah “Simplified Mechanistic Empirical Flexible Pavement Design Method for Moderate to Hot Climate Regions” (January 2019), Mansoura University.
5. Mohamed Shiha “Laboratory characterization of asphalt mixtures and aggregate bases steel slag” (May 2018), Mansoura University.
6. Dina El-Tahan “Evaluation of Recycled Concrete Aggregate Materials in Pavement Construction” (April 2018), Mansoura University.
7. Ali Arisha “Evaluation of recycled clay masonry blends in pavements construction” (April 2017), Mansoura University.
8. Ahmed Shoaeb “Economic Impact of Traffic Congestion in Urban Cities” (April 2017), Mansoura University.
9. Helal Ezzat “Performance of Asphalt Binder Enhanced with Nanomaterials” (June 2016), Mansoura University.

PhD Dissertation Advisor:

1. Helal Ezzat “Fatigue Life Assessment of Asphalt Pavements Using Uniaxial Tension Compression Test” Mansoura University.

Examination Committee Member (Master’s Thesis):

1. Amira Al-Shourbagy "Potential use of industrial waste oil as a rejuvenator for the reclaimed asphalt pavement" (October 2019), Mansoura University.
2. Samar Taha "Modelling California Bearing Ratio using engineering properties" (July 2019), Mansoura University.
3. Rabah Mousa "Resilient modulus characterization of biopolymer treated subgrade soils and unbound granular base materials", (March 2019), Mansoura University.
4. Eman Wagdy "Performance characteristics and economic study of bituminous concrete using different industrial wastes as filler", (March 2019), Mansoura University.
5. Ahmed Al-Ashwah "Simplified Mechanistic Empirical Flexible Pavement Design Method for Moderate to Hot Climate Regions" (January 2019), Mansoura University.

Examination Committee Member (PhD Dissertation):

1. Amr El-Hadidy "Optimizing Pavement Maintenance Strategies using an Evolutionary-based Technique", (October 2019), Mansoura University.

Research Grants:

1. Upgrading Mansoura University Engineering Laboratory for Highways and Airports Towards Accreditation, Higher Education Institutes Labs Accreditation Project, 7th Cycle. (July 2013- June 2015), 1.47 million EGP, Quality Manager.
2. Prefeasibility of a Transport System in Mansoura, Egypt, "Data Collection (Surveys and Counts)", Funded by the French Government, SYSTRA – EGIS RAIL Company, (Feb. 2018- Present).

University of South Australia (March 2009 – June 2012)

Research Grants:

1. Recycled materials project, funded by ARRB Group Ltd. in cooperation with Zero Waste SA (50,000 \$AUD), Australia.
2. Asphalt popping, funded by ARRB Group Ltd. in cooperation with Zero Waste SA (20,000 \$AUD), Australia.

Publications

Google Scholar: <https://scholar.google.com/citations?user=eFSKwPsAAAAJ&hl=en>

Researchgate: https://www.researchgate.net/profile/Alaa_Gabr

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=54401049600>

Mendely: <https://www.mendely.com/profiles/alaa-gabr/publications/>

Kudos: https://growkudos.com/profile/alaa_gabr

ORCID ID: 0000-0002-2399-2271

LinkedIn: <https://www.linkedin.com/in/alaa-gabr-b4764918/>

Peer-Reviewed Journal Publications:

1. **Gabr, A. R.**, Cameron, D. A., Andrews, R., and Mitchell, P. W. (2011) Comparison of Specifications for recycled concrete aggregate for pavement construction. *Journal of ASTM International*, Vol. 8, issue no. 10, 15 pp., DOI: 10.1520/JAI103646.
2. **Gabr, A. R.**, and Cameron, D. A. (2012) Properties of recycled concrete aggregate for unbound pavement construction. *Journal of materials in Civil Engineering, ASCE*, Vol. 24, No. 6, pp. 754-764.
3. **Gabr, A. R.**, Mills, K. G., and Cameron, D. A. (2013) Repeated load triaxial testing of recycled concrete aggregate for pavement base construction. *Geotechnical and Geological Engineering Journal*, Vol. 31, No. 1, pp. 119-132.

4. **Gabr, A. R.**, and Cameron, D. A. (2013) Permanent strain modelling of recycled concrete aggregate for unbound pavement construction. *Journal of materials in Civil Engineering, ASCE*, Vol. 25, No. 10, pp. 1394-1402.
5. Shiha M., **Gabr A.**, and El-Badawy S. (2015) Laboratory Characterization of Asphalt Mixtures Containing Steel Slag. *Mansoura Engineering Journal*, Vol. 40 (4), Faculty of Engineering, Mansoura University.
6. Abd El-Hakim R., El-Badawy S M, **Gabr A R**, and Azam A M (2016) Influence of Unbound Material Type and Input Level on Pavement Performance Using Mechanistic–Empirical Pavement Design Guide. *Transportation Research Record: Journal of Transportation Research Board No. 2578*, pp. 21-28, Transportation Research Board of the National Academies, Washington, D.C., pp. DOI: <http://dx.doi.org/10.3141/2578-03>.
7. Shoeab A., El-Badawy S., and **Gabr A.** (2016) Direct Costs of Urban Traffic Congestion Case Study: Main Corridors in Mansoura City. *Int'l Journal of Computing, Communications & Instrumentation Eng. (IJCCIE)*, Vol. 3 (2), pp. 244-251, ISSN 2349-1469, EISSN 2349-1477. DOI: dx.doi.org/10.15242/IJCCIE.U0516711.
8. Ezzat H., El-Badawy S., **Gabr A.**, Zaki S., and Breakah T. (2016) Evaluation of Asphalt Binders Modified with Nanoclay and Nanosilica. *Procedia Engineering*, Vol. 143, pp. 1260-1267, 3rd International Conference on Transportation Geotechnics. DOI: [10.1016/j.proeng.2016.06.119](https://doi.org/10.1016/j.proeng.2016.06.119).
9. Arisha A., **Gabr A.**, El-Badawy S., and Shwally S. (2016) Using Blends of Construction & Demolition Waste Materials and Recycled Clay Masonry Brick in Pavement. *Procedia Engineering*, Vol. 143, pp. 1317-1324, 3rd International Conference on Transportation Geotechnics. DOI: [10.1016/j.proeng.2016.06.148](https://doi.org/10.1016/j.proeng.2016.06.148).
10. Ezzat H., El-Badawy S., **Gabr A.**, and Zaki S., (2016) Evaluation of Asphalt Enhanced with Locally Made Nanomaterials. *Nanotehnologii v stroitel'stve = Nanotechnologies in Construction*, Vol. 8, no. 4, pp. 42-67. DOI: [dx.doi.org/10.15828/2075-8545-2016-8-4-42-67](https://doi.org/10.15828/2075-8545-2016-8-4-42-67).
11. Ibrahim, E. M., El-Badawy, S. M., Ibrahim, M. H., **Gabr, A.**, & Azam, A. (2017) Effect of geogrid reinforcement on flexible pavements. *Innov. Infrastruct. Solut.*, Vol. 2, (1) article No. 54, pp. 1:15, DOI: <https://doi.org/10.1007/s41062-017-0102-7>.
12. Arisha A., **Gabr A.**, El-Badawy S., and Shwally S. (2018) Performance Evaluation of Construction and Demolition Waste Materials for Pavement Construction in Egypt. *Journal of materials in Civil Engineering, ASCE*, Vol. 30, No. 2, pp. 04017270, 1-14, doi: [10.1061/\(ASCE\)MT.1943-5533.0002127](https://doi.org/10.1061/(ASCE)MT.1943-5533.0002127).
13. El-Tahan D., **Gabr A.**, El-Badawy S., and Shetawy M. (2018) Evaluation of Recycled Concrete Aggregate in Asphalt Mixes. *Innovative Infrastructure Solutions*. Springer International Publishing, Vol. 3:20, pp. 1-13, <https://doi.org/10.1007/s41062-018-0126-7>.
14. **Gabr A.**, Shoeab A., El-Badawy S., and (2018) Economic Impact of Urban Traffic Congestion on the Main Routes in Mansoura City, Egypt. *International Journal for Traffic and Transport Engineering, IJTTE*, 8(2): 148 – 165, DOI: [http://dx.doi.org/10.7708/ijtte.2018.8\(2\).01](http://dx.doi.org/10.7708/ijtte.2018.8(2).01)
15. Ezzat H., El-Badawy S., **Gabr A.**, and Zaki S., and Breakah T. (In press) Predicted Performance of Hot Mix Asphalt Modified with Nano-Montmorillonite and Nano-Silicon Dioxide based on Egyptian Conditions. *International Journal of Pavement Engineering (GPAV)*, <https://doi.org/10.1080/10298436.2018.1502437>.
16. El-Ashwah A. S., Awed A. M., El-Badawy S. M., and **Gabr A. R.** (2019) A new approach for developing resilient modulus master surface to characterize granular pavement materials and subgrade soils. *Construction and Building Materials*, 194 (2019), pp. 372 – 385, <https://doi.org/10.1016/j.conbuildmat.2018.10.212>.

17. Arab, M. G., Mousa, R. A., **Gabr, A. R.**, Azam, A. M., El-Badawy, S. M., and Hassan A. F. (2019) Resilient Behavior of Sodium Alginate Treated Cohesive Soils for Pavement Applications. *Journal of materials in Civil Engineering, ASCE*, 31(1): 04018361, DOI: 10.1061/(ASCE)MT.1943-5533.0002565.
18. El-Shorbagy A. M., El-Badawy S. M., **Gabr A. R.** (2019) Investigation of waste oils as rejuvenators of aged bitumen for sustainable pavement. *Construction and Building Materials*, 220 (September 2019), pp. 228-237, <https://doi.org/10.1016/j.conbuildmat.2019.05.180>
19. Kaloop M. R., **Gabr A. R.**, El-Badawy S. M., Arisha A., Shwally S., and Hu J. W. (2019) Predicting Resilient Modulus of Recycled Concrete and Clay Masonry Blends for Pavement Applications Using Soft Computing Techniques. *Frontiers of Structural and Civil Engineering*, <https://doi.org/10.1007/s11709-019-0562-2>.
20. Taha S., **Gabr A.**, El-Badawy S. (2019) Regression and Neural Network Models for California Bearing Ratio Prediction of Typical Granular Materials in Egypt. *Arabian Journal for Science and Engineering*, 44(10), 8691-8705, <https://doi.org/10.1007/s13369-019-03803-z>
21. Kaloop M. R., Kumar D., Samui P., **Gabr A. R.**, Hu J. W., Jin X., and Roy B. (2019) Particle Swarm Optimization Algorithm-Extreme Learning Machine (PSO-ELM) Model for Predicting Resilient Modulus of Stabilized Aggregate Bases. *Appl. Sci.* 2019, 9 (16), 3221; [doi:10.3390/app9163221](https://doi.org/10.3390/app9163221).

Peer-Reviewed Conference Papers:

1. El-Shabrawy, M., Al Hosin, M. & **Gabr, A.** (2008) Evaluation of RAP as a cement-treated base for highways construction. *6th International Engineering Conference*, Faculty of Engineering, Mansoura University, 18-23 March, Mansoura - Sharm Al-Shiekh, Egypt.
2. Cameron, D. and **Gabr, A.** (2010) The specification of recycled concrete aggregate for pavement construction. *24th ARRB Conference, Australian Road Research Board (ARRB)*, 12-15th October 2010, Melbourne, Australia (proceedings on CD).
3. **Gabr, A. R.**, Cameron, D. A., Andrews, R., and Mitchell, P. W. (2011) Comparison of Specifications for recycled concrete aggregate for pavement construction. *ASTM Special Technical Publication*, Vol. 1540 STP, pp. 168-189, *ASTM International Symposium on Testing and Specification of Recycled Materials for Sustainable Geotechnical Construction*, 2-4 February 2011, Baltimore, MD, USA.
4. Cameron, D. A., **Gabr, A. G.**, Azam, A. M., Rahman, M. R., Andrews, R. and Mitchell, P. W. (2012) Sustainable Aggregates for Unbound Granular Pavements. *11th Australia New Zealand Conference on Geomechanics*, 15-18th July, Melbourne, Australia (proceedings on CD).
5. Cameron, D. A., **Gabr, A. R.** (2012) Permanent strain testing of recycled concrete aggregate for evaluation of unbound bases. *2nd International Conference on Transportation Geotechnics (ICTG)*, pp. 843-849, 10-12th September 2012, Hokkaido university, Japan, (proceedings on USB).
6. Cameron, D. A., Rahman, M. M., Azam, A. M., **Gabr, A. G.**, Andrews, R., and Mitchell, P. W. (2013) The use of recycled aggregates in unbound road pavements. *Proceedings of the 18th International Conference on Soil Mechanics and Geotechnical Engineering (ICSMGE)*, 2-5th September, Paris, France.
7. Azam, A. M., Cameron, D. A., **Gabr, A. G.**, and Rahman, M. M. (2014) Matric Suction in Recycled Unbound Granular Materials. *Geo-Congress, Geo-Characterization and Modeling for Sustainability*, 23-26th February 2014, Atlanta, Georgia.
8. Abd El-Hakim R., El-Badawy S., **Gabr A.**, and Azam A. (2015) Influence of Unbound Materials Input Level on Pavement Performance using MEPDG. *8th International Engineering*

Conference, 17-22 November, Faculty of Engineering, Mansoura University, Mansoura - Sharm Al-Shiekh, Egypt.

9. Mousa R., El-Badawy S., Azam A., **Gabr A.**, and Arab M. (2015) Resilient Modulus Characterization for Granular Base Material in Egypt. *8th International Engineering Conference*, 17-22 November, Faculty of Engineering, Mansoura University, Mansoura - Sharm Al-Shiekh, Egypt.
10. Taha S., El-Badawy S., **Gabr A.**, Azam A., and Shahdah U. (2015) Modeling of California Bearing Ratio using Basic Engineering Properties. *8th International Engineering Conference*, 17-22 November, Faculty of Engineering, Mansoura University, Mansoura - Sharm Al-Shiekh, Egypt.
11. Shiha M., **Gabr A.**, and El-Badawy S. (2015) Laboratory Characterization of Asphalt Mixtures Containing Steel Slag. *8th International Engineering Conference*, 17-22 November, Faculty of Engineering, Mansoura University, Mansoura - Sharm Al-Shiekh, Egypt.
12. Amin I., Alabasey R., Azam A., El-Badawy S., and **Gabr A.** (2015) Evaluation of Polymer Modified Asphalt Mixtures in Pavement Construction. *8th International Engineering Conference*, 17-22 November, Faculty of Engineering, Mansoura University, Mansoura - Sharm Al-Shiekh, Egypt.
13. Shahdah U., El-Shabrawy M., El-Badawy S., **Gabr A.**, Azam A. (2015) Comparing the Performance of Unconventional Median U-turn Intersections and Signalized Intersections: A Simulation Study. *8th International Engineering Conference*, 17-22 November, Faculty of Engineering, Mansoura University, Mansoura - Sharm Al-Shiekh, Egypt.
14. Abd El-Hakim R A, El-Badawy S M, **Gabr A R**, and Azam A. M. (2016) Influence of MEPDG Unbound Material Type and Material Characterization Input Level on Pavement Performance. 95th Annual Meeting of the Transportation Research Board No. 1668, 22-26 January, Washington D.C., USA.
15. Ezzat H., El-Badawy S., **Gabr A.**, and Zaki S., (2016) Evaluation of Asphalt Enhanced with Locally Made Nanomaterials. 8th International Conference on Nano-Technology in Construction (NTC 2016), 12-16 March, Sharm El-Sheikh, Egypt.
16. Shoeab A., El-Badawy S., and **Gabr A.** (2016) Direct Costs of Urban Traffic Congestion Case Study: Main Corridors in Mansoura City. Proceedings of 2016 International Conference on Urban planning, Transport and Construction Engineering, ICUPTCE 2016, 30-31 May, Universal Researchers in Civil and Architecture Engineering (URCAE), Istanbul, Turkey.
17. Ezzat H., El-Badawy S., **Gabr A.**, Zaki S., Breakah T. (2016) Evaluation of Asphalt Binders Modified with Nanoclay and Nanosilica. 3rd ICTG 2016, The 3rd International Conference on Transportation Geotechnics, 4-7 September, Guimarães, Portugal.
18. Arisha A., **Gabr A.**, El-Badawy S., Shwally S. (2016) Using Blends of Construction & Demolition Waste Materials and Recycled Clay Masonry Brick in Pavement. 3rd ICTG 2016, The 3rd International Conference on Transportation Geotechnics, 4-7 September, Guimarães, Portugal.
19. Mousa R., **Gabr A.**, Arab M. G., Azam A., and El-Badawy S. (2017) Resilient Modulus for Unbound Granular Materials and Subgrade Soils in Egypt. Proceedings of the International Conference on Advances in Sustainable Construction Materials & Civil Engineering Systems (ASCMCES-17), MATEC Web of Conferences 120, 06009, April 18–20, Sharjah, UAE, DOI: 10.1051/mateconf/201712006009.

Book Chapters:

1. El-Badawy, S., **Gabr, A.**, and Abd El-Hakim R. (2018) Recycled Materials and By-Products for Pavement Construction. Martínez et al. (eds.), Chapter in *Handbook of Ecomaterials*, ISBN: 978-3-319-48281-1 (Print & Online), pp. 1-22, Springer International Publishing AG, DOI: 10.1007/978-3-319-48281-1_168-1.

Research Reports:

1. El-Badawy S., Elrawy, U., Gabr, A., Awed, A. (2018) Inception Report on Prefeasibility of a Transport System in Mansoura, Egypt, "Data Collection (Surveys and Counts)", Center of Engineering Studies and Consultations, Mansoura University in cooperation with SYSTRA – EGIS RAIL Company, Funded by the French Government, National Authority for Tunnels (NAT), Egypt.
2. **Gabr, A.** and Cameron, D. (2012) Asphalt Popping. Introduced to ARRB Group Ltd, supported by Zero Waste SA Recycled Materials Project, UniSA University.
3. **Gabr, A.** and Cameron, D. (2010) Lab Testing - UNiSA Report No.1 - Compliance of 20 mm Recycled Concrete Aggregate products with Australian specifications. Introduced to ARRB Group Ltd, supported by Zero Waste SA Recycled Materials Project, UniSA University.
4. **Gabr, A.** and Cameron, D. (2010) Lab Testing - UniSA Report No.2 - Moisture Sensitivity of 20 mm Recycled Concrete Aggregate Products on Resilient Modulus. Introduced to ARRB Group Ltd, supported by Zero Waste SA Recycled Materials Project, UniSA University.
5. **Gabr, A.** and Cameron, D. (2010) Lab Testing - UniSA Report No.3 - Drying Shrinkage of 20 mm Recycled Concrete Aggregate Products. Introduced to ARRB Group Ltd, supported by Zero Waste SA Recycled Materials Project, UniSA University.

Presentations

Conference Presentations

1. "Evaluation of RAP as a cement-treated base for highways construction." *6th International Engineering Conference*, Faculty of Engineering, Mansoura University, 18-23 March 2008, Sharm Al-Shiekh, Egypt.
2. "The specification of recycled concrete aggregate for pavement construction." *24th ARRB Conference, Australian Road Research Board (ARRB)*, 12-15th October 2010, Melbourne, Australia.
3. "Permanent strain testing of recycled concrete aggregate for evaluation of unbound bases." *2nd International Conference on Transportation Geotechnics (ICTG)*, 10-12th September 2012, Hokkaido university, Japan.

Attended Conferences, Seminars and Workshops

1. Design and development of electronic courses (10 hrs), Faculty and Leadership Development Program (FLDP), University Development Center, Mansoura University, Egypt, 30-31 Dec. 2018.
2. Design of personal sites (10 hrs), FLDP, University Development Center, Mansoura University, Egypt, 24-25 Dec. 2017.
3. Preparing and designing electronic tests (10 hrs), FLDP, University Development Center, Mansoura University, Egypt, 21-22 May 2017.
4. International Conference of Scientific Research and Innovation Technology, Mansoura University, Egypt, 7-9 March 2017.
5. Skills of statistics analysis workshop (10 hrs), FLDP, University Development Center, Mansoura University, Egypt, 30-31 Aug. 2016.

6. 8th International Engineering Conference, Faculty of Engineering, Sharm Al-Shiekh, Egypt, 17-22 Nov. 2015.
7. Academic management workshop (10 hrs), FLDP, University Development Center, Mansoura University, Egypt, 9-10 Aug 2015.
8. Road Safety Egypt & North Africa, Ministry of Transport, Intercontinental CityStars, Cairo, 5-6 May 2015.
9. Future Rail and Metro Summit, Ministry of Transport, Intercontinental CityStars, Cairo, 14-15 Apr. 2015.
10. Internal Auditing "ISC/IEC 17025: 2005". Experts Quality and Marketing, Egypt, 8-9 March 2015.
11. Quality Control Charts and Proficiency Test (PT), "ISC/IEC 17025: 2005", Experts Quality and Marketing, Egypt, 22 September 2014.
12. Managing of research team workshop (10 hrs), FLDP, University Development Center, Mansoura University, Egypt, 7-8 Sept. 2014.
13. Universal Testing Machine: UTS005: Flow Test, UTS006: Dynamic Modulus, UTS039: Unbound Materials Resilient Modulus, IPC Global Australia, 22-24 July 2014.
14. Estimation of Uncertainty of Measurements, "ISC/IEC 17025: 2005", Experts Quality and Marketing, Egypt, 3 June 2014.
15. General Requirements for the Competence of the Testing Laboratories, "ISC/IEC 17025: 2005", Experts Quality and Marketing, Egypt, 13 December 2013.
16. Communication Skills in the patterns of education (15 hrs), FLDP, University Development Center, Mansoura University, Egypt, 7-9 Oct. 2012.
17. Applying the academic standards for the educational program (15 hrs), FLDP, University Development Center, Mansoura University, Egypt, 30 Sep.-2 Oct. 2012.
18. Organization of scientific conferences (15 hrs), FLDP, University Development Center, Mansoura University, Egypt, 23-25 Sep. 2012.
19. Strategic Planning (15 hrs), FLDP, University Development Center, Mansoura University, Egypt, 16-18 Sep. 2012.
20. 2nd International Conference on Transportation Geotechnics (ICTG), Hokkaido, Japan, 10-12th September 2012.
21. Preparation of lecturer, Mansoura University, Egypt, 6 Sep. 2012.
22. Quality standards in teaching process (15 hrs), FLDP, University Development Center, Mansoura University, Egypt, 2-4 Sep. 2012.
23. Competing for research funds (15 hrs), FLDP, University Development Center, Mansoura University, Egypt, 26-28 Aug 2012.
24. NBE research colloquium (16 hrs), UniSA, City East campus, Australia 17-18 Nov. 2011.
25. ITEE Research day (8 hrs), UniSA, Mawson Lakes campus, Australia, 30 Sep. 2011.
26. Developments in Transportation Geotechnics day (8 hrs), National Wine Centre, Hackney Roads, Adelaide, 19 Sep. 2011.
27. Solutions for a Low-to-no carbon urban Future (8 hrs), UniSA, Bradley forum, City West Campus, Australia, 19 May 2011.
28. NBE research colloquium (8 hrs), UniSA, Mawson Lakes campus, Australia, 12 Nov. 2010.
29. 24th ARRB Conference, ARRB, Melbourne, Australia, 12-15th Oct. 2010.

30. 3rd International Conference on problematic soil, Adelaide, Australia, April 2010.
31. Two MatLab Sessions (16 hrs), Adelaide University and UniSA, Australia, Jan/July 2010.
32. Teaching@UniSA (16 hrs), UniSA, Mawson Lakes campus, Australia, 16-17 Feb. 2010.
33. NBE Sustain 09 Colloquium (16 hrs), UniSA, City East campus, Australia, 12-13 Nov. 2009.
34. Writing the thesis workshop (8 hrs), UniSA, Mawson Lakes campus, Australia, 15 Oct. 2009.
35. Ethics of Scientific Research (15 hrs), FLDP, University Development Center, Mansoura University, Egypt, 1-3 June 2008.
36. 6th International Engineering Conference, Faculty of Engineering, Sharm Al-Shiekh, Egypt 18-23 Mar. 2008.
37. Use of technology in teaching (15 hrs), FLDP, University Development Center, Mansoura University, Egypt, 2-4 Mar 2008.
38. Hour system adopted (15 hrs), FLDP, University Development Center, Mansoura University, Egypt, 24-26 Feb 2008.
39. Effective presentation (15 hrs), FLDP, University Development Center, Mansoura University, Egypt, 22-24 Apr 2007.

Journal and Conference Refereeing

1. Transportation Research Record
2. Journal of Materials in Civil Engineering, American Society of Civil Engineers
3. Geotechnical and Geological Engineering Journal, Springer
4. International Journal of Pavement Research and Technology, Springer
5. Sustainable Civil Infrastructures, Springer
6. Construction and Building Materials Journal, Elsevier
7. Bulletin of Engineering Geology and the Environment, Springer
8. 4th International Conference on Civil Engineering and Urban Planning (CEUP2015), October 20-24, 2015, Beijing, China.
9. 4th GeoChina 2016 International Conference on Sustainable Civil Infrastructures: Innovative Technologies for Severe Weathers and Climate Changes, July 25-27, 2016, Shandong, China.

Journal Editorial Board Member

- Journal of World Architecture (JWA) since 2017

Professional Affiliations

- Syndicate of Engineers, Cairo, Egypt

TEACHING EXPERIENCE

Mansoura University

In accordance with the Academic Reference Standards (ARSs) and Intended Learning Outcomes (ILOs), I'm responsible for all aspects of development, instruction, and assessment for the following courses:

#	Courses Taught	Course #	Level	Syllabus	No. of Semesters
1	Highway and Airport Engineering	PWE 8413	Undergraduate	Introduction- Subgrade, base and subbase material characterization- Bituminous materials characterization- Hot-Mix-Asphalt design and testing- Hot-Mix-Asphalt production & construction- Traffic characterization and thickness	4

#	Courses Taught	Course #	Level	Syllabus	No. of Semesters
				design of flexible and rigid pavements- Introduction to geometric design- Sight distance- Horizontal alignment- Vertical alignment- At-grade intersections- Introduction to airport engineering- airport site selection and layout- Wind rose- runways- taxiways, and apron area.	
2	Modern trends in asphalt mixes design	PWE 8416	Undergraduate	Introduction- Marshall Method- Foamed Asphalt- Superpave asphalt binder performance- Specifications and testing- Modern Mechanistic based method for Mix Design.	4
3	Transportation and Traffic Engineering	PWE 8322	Undergraduate	Introduction to transportation engineering and urban areas planning- Phase I: Data Collection- Phase II: Transportation Models- Phase III: Evaluation- Introduction to traffic engineering- Highway capacity- Traffic flow count- speed and delay measurements- Parking surveys- At-grade intersection (design and control).	3
4	Railway Engineering	PWE 8314	Undergraduate	Introduction and definition- Running Dynamic- Alignment of Rail Lines- Structure design of track elements- Railway Turnouts- Planning of Rail station- Signaling system of railway tracks.	1
5	Statistical Applications in Civil Engineering	PWE 8113	Undergraduate	Central Tendency- Frequency Distributions- Curve Fitting and regression methods- Forecasting technique- Probability distributions- Sampling Distribution- Hypothesis Testing	1
6	Highway and Airport Engineering Graduation Project		Undergraduate	A project/ lab study/ research point related to the area of highway and airport engineering.	6
7	Soil mechanics	PWE 8222	Undergraduate	Introduction to Soil Mechanics: Soil Origin and Characteristics of Soil deposits- Soil Types and Soil Structure- Soil Composition: Terminology and Volumetric and Weight Definitions and Relations- Soil grading and Index properties and Classification tests- Soil Moisture and Pressure in Soil Mass- Soil Classification systems- Permeability of Soil- Settlement: Soil volume change and consolidation- Shear strength theory	1
1	Computer Applications	PWE 502	Graduate	Basic concepts – Data analysis using Excel – Solver – Modelling	2

#	Courses Taught	Course #	Level	Syllabus	No. of Semesters
				and regression analysis using different software tools.	
2	Seminar	PWE 640	Graduate	A research proposal/review/project related to public works engineering.	10
3	Pavement Materials (I)	PWE 529	Graduate	Soil classification systems – compaction – subgrade material characterization – unbound base/subbase material characterization – bitumen – asphalt mixtures – concrete mixtures.	7
4	Highway Structural Design (I)	PWE 532	Graduate	Pavement types – basics of pavement structural design – stress strain analysis for flexible and rigid pavements – equivalent traffic loads – pavement design methods - pavement materials evaluation and testing.	3
5	Bituminous Materials and Mixtures	PWE 533	Graduate	Sources, types, and production – physical and rheological properties- aggregate properties for asphalt concrete (AC) mixtures– AC mixture types and design– construction methods– pavement maintenance and rehabilitation.	2
6	Pavement Materials II	PWE 614	Graduate	Bituminous and cement treated base materials – advanced material characterization (resilient modulus on unbound materials and subgrade soils – Superpave binder and mixture characterization tests – complex dynamic modulus test on asphalt mixtures – fatigue test – indirect tensile test on asphalt mixtures) – moisture damage.	3
7	Pavement Management Systems	PWE 618/713	Graduate	Introduction – pavement management levels and functions – data needs – pavement performance – evaluation of pavement structural capacity – pavement distresses and condition surveys – prediction models for pavement deterioration - maintenance and rehabilitation strategies.	6
8	Pavement Maintenance	PWE 539/712	Graduate	Introduction to road maintenance - Asphalt and concrete mixtures – surface treatment – pavement distresses – quality control – special asphalt concrete mixtures and additives - overlay design – flexible pavement maintenance - rigid pavement maintenance – shoulder maintenance – drainage maintenance – other maintenance activities – pavement management systems.	5
9	Pavement	PWE 621	Graduate	Fundamental concepts – aircraft	2

#	Courses Taught	Course #	Level	Syllabus	No. of Semesters
	Structural Design for Airports			characteristics related to pavement structure design – pavement construction materials - design of flexible and rigid pavements using FAA method – other pavement design methods – pavement construction and maintenance.	
10	Statistical Applications in Highway Engineering	PWE 709	Graduate	Data analysis – Introduction & Sampling Techniques - Basic probability concepts- Random variables and their properties - probability distributions – Model estimation and testing - hypothesis tests – Methods of regression and multivariate analysis- Simulation techniques for design– applications.	1
11	Advanced Topics in Highway and Airport Engineering	PWE 719	Graduate	Selected topics in highway and airport engineering.	5
12	Advanced Pavement Materials (III)	PWE 718	Graduate	Liner/non-linear materials - viscous materials - fatigue and permanent deformation -back-calculation of layer moduli - mechanistic empirical design methods – sustainable materials, nanomaterial.	1
13	Geometric Design of Highways	PWE 530	Graduate	Basics of highway geometric design - cross section elements – sight distance– horizontal alignment – vertical alignment – intersections – interchanges – computer applications in geometric design.	5
14	Highway and Airport Construction Equipment and Technology	PWE 534	Graduate	Equipment types – characteristics – performance - productivity – principles of equipment economics– equipment maintenance and its effect on performance.	2

University of South Australia, UniSA, Australia

Responsible for tutoring, supervising and marking assignments for the following courses:

#	Courses Taught	Course #	Level	Semester
1	Engineering design and innovations	CIVE 1004	Undergraduate	1
2	Structure mechanics	CIVE 2005	Undergraduate	1
3	Geotechnical Engineering	CIVE 3007	Undergraduate	3
4	Rock and Soils	CIVE 3008	Undergraduate	3

Delta Higher Institute for Engineering and technology; Misr Higher Institute for Engineering & Technology; Higher institute of Engineering & Technology, New Damietta; Nile Academy for Engineering & Technology

As Visiting Professor, I developed, instructed, and assessed the following courses:

1. Transportation and Traffic Engineering
2. Highway & Airport Engineering
3. Pavement Design
4. Soil Mechanics

5. Highway and Airport Graduation Project
6. Railway Engineering

AWARDS

- University President's Scholarship (PhD), University of South Australia, Australia Mar 2009 – Mar 2012
- Scientific Publication Award, Mansoura University, Egypt 2016

AWARDS FOR MY UNDERGRADUATE STUDENTS

1. Students of the Senior Graduation Project of Highway and Airport Engineering Design, 2015 under my supervision with other colleagues earned the first place in the National Engineering Syndicate Competition day, Aug 2015.
2. Students of the Senior Graduation Project of Highway and Airport Engineering Design, 2016 under my supervision with other colleagues earned the second place in the National Engineering Syndicate Competition day, Aug 2016.
3. Poster submitted to the GeoMEast International Congress and Exhibition, July 15-19, 2017 by one group from the Senior Graduation Project of Highway and Airport Engineering Design, 2017 earned the second place.

TRAINING COURSES AND WORKSHOPS

Developed the following training and workshops. The audience included civil, construction, and road engineers as well as technicians.

1. "Using steel slag for the construction of asphalt mixes and base layer". A 1-day course, General Authority for Roads, Bridges, and Land Transport (GARBLT), 23 Oct. 2017, Cairo.

PROFESSIONAL EXPERIENCE AND CONSULTING

Since 2002, the conclusion of my experience can be divided into five main parts; execution, designing, consulting, supervising, and other activities for the infrastructure and civil projects as follow:

As Executing Engineer, the following projects were executed:

- Construction of Jetty (Landing Bridge, Fire platform, Jetty-head 4 Breasting dolphins, Mooring dolphins in UGDC.LNG-Damietta project number (2809-200), Archriodoon Contracting Company (Overseas), 2004.
- Construction of the Crygoing tank with a height of 46 m using slip form, Control, Substation Buildings in UGDC.LNG-Damietta project number (2809-200), El-Nour construction company, 2003.
- Construction of the Finish Wall Surrounding Cut and Fill work in UGDC.LNG-Port Said project number (2709-200), El-Nour construction company, 2003.
- Repair Pilot Tour, Fuel station in Damietta Port Authority, El-Nour construction company, 2003.
- Foundation for machines in Union Fenosa, Segas LNG Damietta project number (6254), El-Nour construction company, 2003.

As a designer Engineer, I designed the following:

- Replan the main roads and study the traffic impact after replanning in El-Obour city, Al-Qalybia governate, Egypt, 2015.
- Design of the internal road network, Kafr Alshiekh University and preparation of the tender documents with a construction cost of 11 Million EGP, 2013.
- Participated in the geometric design, and preparation of the tender documents of the road network for the new Menia city, 45 acres, 2008.
- Design the road network for Damietta Port and preparation of the tender documents, 2006-2007.

As a consulting Engineer:

- Consultant to the Directorate of housing and infrastructure of Damietta for evaluating the state of the civil defense's building, Shata, Damietta, April 2019.
- Consultant to the Directorate of housing and infrastructure of Damietta for evaluating the state of Damietta city council's garage and estimate the initial cost of repair and maintenance, Damietta, April 2019.
- Chair of the fifth committee for inventory, inspection, and evaluation of illegal buildings in the centers and cities of Manzalla, Gamalia, Matrya, and meet sleseel, January 2019 to present.
- Consultant to Al-Aqsa company for construction materials for studying the traffic impact and accessibility of the company's trucks on the main arterial road, March 2019.
- Consultant to the Directorate of housing and infrastructure of Damietta for evaluating the state of Al-Zarqa stadium and estimate the initial cost of repair and maintenance, Al-Zarqa, 2018.
- Roads consultant to the Arabs Contractors Company for paving 40000 m² of the wearied surfacing layer by interlock (≈5 million EGP), Containers yard, Damietta Port, 2015.
- Consultant to the city council of Met-Ghamr for evaluating the state of Al-Ewaa multistory building for living, Met-Ghamr, 2014.
- Roads consultant to the city council of Gamsa city for the evaluation the condition of the pavement and roads state in the whole city, 2014.
- Roads consultant to the road authority, Al-Dakahlia governate for the evaluation of the pavement condition and the state of the road in the entry of the Al-Fatah estate's road, Met-Salseel, Dakhalia, 2014.
- Quality control, evaluation and inspection of the local roads and the roads between centres in Dakahlia governate since 2013. Every year we do inspect, evaluate, and assure the quality for more than ≈ 30 projects. This include the investigation of all pavement layers after construction such as pavement surface levelling and asphalt mix homogeneity, pavement thickness, pavement compaction, gradation, and bitumen content, as well as base thickness, compaction and gradation.
- As a member in the highway engineering laboratory, Faculty of Engineering, Mansoura University, I participated in the following:
 - Laboratory testing on all pavement materials
 - Field testing for quality control on construction
 - Technical evaluation of the pavement construction and inspection
 - Preparation of technical reports for testing, evaluation, and pavement maintenance
 - Calibration of hot mix asphalt plants

Participating in the supervision of the following projects:

- Paving the University student's housing streets, Mansoura University, 2016.
- The infrastructure and roads of Damietta University (≈500 million EGP) since 2014 (In progress)

The following activities are related to the pavement maintenance:

- Committee chief of the pavement maintenance of all roads in Mansoura University (2018).
- Technical pavement evaluation of the pavement condition of the main road in Ras El-Bar recommending the best alternative for pavement maintenance in a technical report, February 2016.
- Evaluation of the pavement condition of all roads in Gamsa city, Dakahlia and give recommendations to the city council about pavement failures and cracks in a technical report to solve the dispute between the city council and contractor, 2014.
- Evaluation of the pavement condition and the state of the road in the entry of the AlFatah estate's road, Met-salseel, Dakhalia after dredging the canal beside the road and solve the dispute between road authority and irrigation authority, 2014.
- Conduct pavement condition survey (Evaluation) by graduation project students under my supervision and other highway staff since 2008 to present for selected distressed pavements in Dakahlia, Damietta, and Port-said governorates. The used methods are pavement

condition rating (PCR) and pavement condition index (PCI), which was implemented in Paver software. The outcomes and recommendations are raised to road authorities for implementation.

Computer Skills

1- Engineering Drawing Programs

AutoCAD 2015

2- Several Finite element analysis programs:

AFENA, ABAQUS, PLAXIS 2D, PLAXIS 3D

3- Geotechnical Programs

SLOG and CORD for slabs design on expansive soils

GALENA for dam design and slope stability

4- Pavement Design

KENPAVE and CIRCLY for multi-layer elastic finite element analysis

5- Traffic Analysis

SIDRA, Vissim

6- Statistical Programs

Predictive Analytics Software (PASW) 18

Languages

Arabic, English

Academic References

Dr Sherif El-Badawy, Professor

Director of the Highway and Airport Engineering Laboratory (H&AE LAB)

Director of the centre of studies and engineering consultations

Public Works Engineering Department, Faculty of Engineering, Masnoura University, Egypt, Email: sbadawy@mans.edu.eg, Phone: +201000183519

Dr Donald Cameron, Adjunct Senior Research Fellow

School of Natural and Built Environments, University of South Australia

Donald.Cameron@unisa.edu.au, Phone: +61883025108

Dr Waleed Zeiada, Assistant Professor,

Civil Engineering Department, University of Sharjah

wzeiada@sharjah.ac.ae, Phone: +971509624715

Dr Mostafa Abo-Hashema, Professor, C.Eng. and Member of American ASCE

Former Director (President) of Egyptian National Institute of Transport (ENIT)-Ministry of Transport

Advisor to the Minister of Transport for Education and Training Center

Professor & Consultant of Highway and Airport Engineering

Email: enit4egypt@gmail.com; mhashema@mot.gov.eg, Phone: +20 106 2810128

Dr Ahmed Metwally Awed, Assistant Professor

Public Works Engineering Department, Faculty of Engineering, Masnoura University, Egypt, Email: ammawed@mans.edu.eg, Phone: +201024421050