

Name: Sherif El-Badawy

Current Title: Vice Dean of Postgraduate Studies and Research, Professor of Highway Engineering, Director of Highway and Airport Laboratory Public Works Engineering Dept., Faculty of Engineering, Mansoura University,

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DEGREES

- May 2002 – May 2006, Ph.D. in Civil and Environmental Engineering, Arizona State University, Tempe, Arizona, USA GPA 4.0/4.0, Dissertation: “Development of a Mechanistic Constitutive Model for the Repeated Load Permanent Deformation Behavior of Subgrade Pavement Materials
- Jan 1996 – June 1999, M.Sc. in Public Works Engineering, Mansoura University, Mansoura, Egypt. Thesis: “The Effect of Soil and Environmental Conditions on Creep Characteristics of Geosynthetics
- Sept 1990 – June 1995, B.Sc. in Civil Engineering, Mansoura University, Mansoura, Egypt, Grade: Very Good with Honor’s Degree (Ranked Second)

ACADEMIC AND INDUSTRIAL POSITIONS

- Nov. 2018 - Present , Mansoura University, Egypt, Professor of Highway Engineering
- Nov. 2013 – Nov. 2018, Mansoura University, Egypt, Associate Professor, Public Works Engineering Department
- Sep. 2007 – Nov. 2013, Mansoura University, Egypt, Assistant Professor, Public Works Engineering Department
- 2013 - Current , Delta University, Visiting Professor
- Sept. 2013 – July 2014, Delta Higher Institute for Engineering and Technology University, Visiting Professor
- 2012 –Current , Misr Higher Institute for Engineering and Technology University, Visiting Professor
- Jan. 2012 – Jan. 2015, University of Idaho, USA , Adjunct Faculty , Department of Civil Engineering
- Dec 2009 – Jan 2012, University of Idaho, USA , Research Fellow , National Institute for Advanced Transportation Technology (NIATT)
- May 2006 - Aug 2007, Arizona State University, USA, Postdoctoral Research Associate: Departement of Civil and Environmental Engineinrg, Ira Fulton School of Engineering
- May 2002 – May 2006, Arizona State University, USA, Research Associate: Departement of Civil and Environmental Engineinrg, Ira Fulton School of Engineering
- June 1999 - May 2002, Mansoura University, Egypt, Teaching Associate: Public Works Eng. Dept., Faculty of Engineering

- Sep 1995 - June 1999, Mansoura University, Egypt, Teaching Assistant , Public Works Eng. Dept., Faculty of Engineering

ADMINISTRATIVE POSITIONS HISTORY

- August, 2019 - Present ,Mansoura University, Egypt, Vice Dean of Postgraduate Studies and Research , Faculty of Engineering
- January, 2021- Present , Mansoura University, Egypt, Head of Biomedical Engineering Postgraduate Program, Faculty of Engineering
- January, 2021- Present , Mansoura University, Egypt, Head of Mechatronics Postgraduate Program , Faculty of Engineering
- August, 2019 - Present , Mansoura University, Egypt, Head of Environmental Engineering, Management and Technology Postgraduate Program , Faculty of Engineering
- November, 2018 – July, 2019, Mansoura University, Egypt, Director of the Center of Engineering Studies and Consultancy , Faculty of Engineering
- August 2016 – November, 2018, Mansoura University, Egypt, Director of the Center of Scientific, Experimental, and Technical Services , Faculty of Engineering
- Sep. 2012 – Present , Mansoura University, Egypt, Director of the Highway and Airport Engineering Laboratory , Public Works Engineering Department, Faculty of Engineering
- Feb. 2013 – Feb. 2016, Mansoura University, Egypt, Deputy Vice Dean for Graduate Studies and Research Faculty of Engineering
- April 2012 – Aug. 2016, Mansoura University, Egypt, Vice Director of the Center of Scientific, Experimental, and Technical Services , Faculty of Engineering

PATENTS, PUBLICATIONS

Journal papers:

- 1) **Sherif El-Badawy** Artificial Intelligence Techniques for Individuals Mode Choice Behaviour in Mansoura City, Egypt, TRR, under publication
- 2) Maram Saady, Tamer Breakah, Mosbeh R. Kaloop, **Sherif El-Badawy**, Regional implementation of the mechanistic empirical pavement design and analysis approach: Egyptian case study, Case Studies in Construction Materials, Volume 18, 2023, <https://doi.org/10.1016/j.cscm.2023.e01863>.
- 3) Ammar A.S. Al-Dossary, Ahmed M. Awed, Alaa R. Gabr, Mohammed Y. Fattah, **Sherif M. El-Badawy**,(2023) Performance enhancement of road base material using calcium carbide residue and sulfonic acid dilution as a geopolymer stabilizer, Construction and Building Materials, Volume 364, <https://doi.org/10.1016/j.conbuildmat.2022.129959>
- 4) Abdallah E. Aboelela, **Sherif M. El-Badawy**, Alaa R. Gabr & Ahmed M. Awed (2022) Characterisation and modelling of subgrade resilient modulus for pavement structural design in Egypt, Road Materials and Pavement Design, <https://doi.org/10.1080/14680629.2022.2152725>.
- 5) Mohamed E. Salem, Ahmed M. Awed, **Sherif M. El-Badawy**, Feipeng Xiao, (2022), Comprehensive physico-chemical and rheo-mechanical characterization of multiple asphalt binder microphases to meet Egyptian conditions, Case Studies in Construction Materials, Volume 17, <https://doi.org/10.1016/j.cscm.2022.e01539>.

Field Code Changed

- 6) El-labbad, Eman M., Usama Heneash, and **Sherif M. El-Badawy**. (2022), Investigation of Waste Electrical Power Plant Oil as a Rejuvenating Agent for Reclaimed Asphalt Binders and Mixtures" *Materials* 15, No. 14: 4811. <https://doi.org/10.3390/ma15144811>
- 7) Ahmed S. El-Ashwah, Eman Mousa, **Sherif M. El-Badawy** & Mostafa A. Abo-Hashema (2022) Advanced characterization of unbound granular materials for pavement structural design in Egypt, *International Journal of Pavement Engineering*, 23 (2), 476-488, <https://doi.org/10.1080/10298436.2020.1754416>.
- 8) Mosbeh R. Kaloop, **Sherif M. El-Badawy**, Jungkyu Ahn, Hyoung-Bo Sim, Jong Wan Hu & Ragaa T. Abd El-Hakim (2022) A hybrid wavelet-optimally-pruned extreme learning machine model for the estimation of international roughness index of rigid pavements, *International Journal of Pavement Engineering*, 23 (3), 862-876, <https://doi.org/10.1080/10298436.2020.1776281>
- 9) Ahmed M. Awed, Eman W. Tarbay, **Sherif M. El-Badawy** & Abdelhalim M. Azam (2022): Performance characteristics of asphalt mixtures with industrial waste/by product materials as mineral fillers under static and cyclic loading, *Road Materials and Pavement Design*, 23 (2), 335-357, <https://doi.org/10.1080/14680629.2020.1826347>.
- 10) Yasser F. Al-Declaim, Ahmed M. Awed, Alaa R. Gabr; **Sherif M. EL-Badawy** (2022), Predicting Resilient Modulus of Unbound Granular Base/Subbase Material, *Mansoura Engineering Journal*, 47(1), pp. 1-10. doi: 10.21608/bfemu.2022.223409
- 11) Manar Nassef; Alaa Gabr; **Sherif EL-Badawy** (2021), Laboratory Evaluation of Rice Husk and Sawdust on the Performance of Asphalt Binders and Mixtures, *Mansoura Engineering Journal*, Volume 46, Issue 4, Autumn 2021, Page 1-7, DOI: 10.21608/BFEMU.2021.204643
- 12) Yasser M. Alghafry, **Sherif M. El-Badawy**, Elsayed Abdallah, (2021), Rheological and environmental evaluation of sulfur extended asphalt binders modified by high- and low-density polyethylene recycled waste, *Construction and Building Materials Journal*, [Volume 307](https://doi.org/10.1016/j.conbuildmat.2021.125008), 8, 125008, <https://doi.org/10.1016/j.conbuildmat.2021.125008>
- 13) El-Ashwah, Ahmed S., **Sherif M. El-Badawy**, and Alaa R. Gabr (2021). "A Simplified Mechanistic-Empirical Flexible Pavement Design Method for Moderate to Hot Climate Regions" *Sustainability* 13, no. 19: 10760. <https://doi.org/10.3390/su131910760>
- 14) Yasser M. Alghafry, **Sherif M. El-Badawy**, Elsayed Abdallah, (2021), Comparative study of different complex shear modulus master curve techniques for sulfur extended asphalt modified with recycled polyethylene waste, *International Journal of Pavement Research and Technology*, <https://doi.org/10.1007/s42947-021-00070-w>.
- 15) Ahmed Shoaib, **Sherif M. El-Badawy**, Sayed A. Shawly, Usama E. Shahdah, (2021) Time Headway Distributions for Two-Lane Two-Way Roads, Case Study from Mansoura city, Egypt, *Innov. Infrastruct. Solut.* **6**, 165 (2021). <https://doi.org/10.1007/s41062-021-00531-y>.
- 16) Ragaa T. Abd El-Hakim, Gamal M. Elgendy, **Sherif M. El-Badawy**, Mohamed Amin, (2021) Performance Evaluation of Steel Slag High Performance Concrete for Sustainable Pavements, *International Journal of Pavement Engineering*, <https://doi.org/10.1080/10298436.2021.1922908>.
- 17) Ali, E.K., Hashim, I.H., Shwaly, S.A. Zaki M. Zidan & **Sherif M. El-Badawy** (2021). Risk assessment of horizontal curves using reliability analysis based on Google traffic data. *Innov. Infrastruct. Solut.* **6**, 123. <https://doi.org/10.1007/s41062-021-00477-1>
- 18) Amro El-Hadidy, **El-Badawy, S.**, and Elbeltagi, E., (2021) A Simplified Pavement Condition Index Regression Model for Pavement Evaluation, *International Journal of Pavement Engineering*, 22:5, 643-652 *Taylor & Francis*, <https://doi.org/10.1080/10298436.2019.1633579>.

- 19) Alaa R. Gabr, Bishwajit Roy, Mosbeh R. Kaloop, Deepak Kumar, Ali Arisha, Mohamed Shiha, Sayed Shwally, Jong Wan Hu & **Sherif M. El-Badawy** (2021) A novel approach for resilient modulus prediction using extreme learning machine-equilibrium optimiser techniques, *International Journal of Pavement Engineering*, DOI: 10.1080/10298436.2021.1892109
- 20) M. Elharoun, **S.M. El-Badawy**, and U.E. Shahda (2021) Captivity Impact on Modeling Mode Choice Behavior, *Advances in Transportation Studies*, LIII, April, pp. 85-102.
- 21) Yasser M. Alghafry, Elsayed Abdallah, **Sherif M. El-Badawy**, (2021), Rheological properties and aging performance of sulfur extended asphalt modified with recycled polyethylene waste, *Construction and Building Materials*, Volume 273, 121771, <https://doi.org/10.1016/j.conbuildmat.2020.121771>.
- 22) Alghafry, Y.M., Abd Alla, ES.M. & **El-Badawy, S.M.** (2021), Phase angle master curves of sulfur-extended asphalt modified with recycled polyethylene waste. *Innov. Infrastruct. Solut.* 6, 84. <https://doi.org/10.1007/s41062-021-00459-3>
- 23) Awed, A.M., Aboelela, A.E., El-Ashwah, A.S., Mofida Allam & **Sherif M. El-Badawy**, (2020), Improvement of unbound granular pavement layers and subgrade with cement dust in Egypt. *Int. J. Pavement Res. Technol.* 13, 621–629. <https://doi.org/10.1007/s42947-020-6010-9>
- 24) Ling Xua, Jiayu Wang, Feipeng Xiaoa, **Sherif El-Badawy** and Ahmed Awed, (2020), Potential strategies to mitigate the heat island impacts of highway pavement on megacities with considerations of energy uses, *Applied Energy*, Volume 281, 1 January 2021, 116077, <https://doi.org/10.1016/j.apenergy.2020.116077>.
- 25) Amro El-Hadidy, Elbeltagi, E. and **El-Badawy, S.**, (2020) Network-Based Optimization System for Pavement Maintenance Using a Probabilistic Simulation-Based Genetic Algorithm Approach, *Journal of Transportation Part B- Pavements*, Vol 146, Issue 4, <https://doi.org/10.1061/JPEODX.0000237>.
- 26) Elagamy, Sania Reyad; **El-Badawy, Sherif M.**; Shwaly, Sayed A.; Zidan, Zaki M.; Shahdah, Usama Elrawy. (2020). "Segmentation Effect on the Transferability of International Safety Performance Functions for Rural Roads in Egypt." *Safety* 6, no. 3: 43. <https://doi.org/10.3390/safety6030043>.
- 27) Mousa, E., **El-Badawy, S.** & Azam, A. (2020) Evaluation of Reclaimed Asphalt Pavement as Base/Subbase Material in Egypt, *Transportation Geotechnics*, <https://doi.org/10.1016/j.trgeo.2020.100414>.
- 28) Elagamy, S.R., **El-Badawy, S.M.**, Shwaly, S.A. et al. (2020) Segmentation effect on developing safety performance functions for rural arterial roads in Egypt. *Innovative Infrastructure Solutions*. 5, 64. <https://doi.org/10.1007/s41062-020-00318-7>.
- 29) Mousa, E., **El-Badawy, S.** & Azam, A. Effect of reclaimed asphalt pavement in granular base layers on predicted pavement performance in Egypt. *Innovative Infrastructure Solutions*. 5, 57 (2020). <https://doi.org/10.1007/s41062-020-00301-2>.
- 30) Noha K. Farh, Ahmed M. Awed and **Sherif M. El-Badawy**. Artificial Neural Network Model for Predicating Resilient Modulus of Silty Subgrade Soil. *American Journal of Civil Engineering and Architecture*. 2020; 8(2):52-55. [doi:10.12691/ajcea-8-2-4](https://doi.org/10.12691/ajcea-8-2-4).
- 31) Ezzat, H., **El-Badawy, S. M.**, Gabr, A., Zaki, S., & Breakah, T. (2020) Predicted Performance of Hot Mix Asphalt Modified with Nano-montmorillonite and Nanosilicon Dioxide based on Egyptian Conditions, *International Journal of Pavement Engineering*, Taylor & Francis, Volume 21, 2020 - Issue 5, Pages 642-<https://doi.org/10.1080/10298436.2018.1502437>.

- 32) Nader Abdelaziz, Ragaa T. Abd El-Hakim, Sherif M. El-Badawy & Hafez A. Afify (2020) International Roughness Index prediction model for flexible pavements, *International Journal of Pavement Engineering*, 21:1, 88-99, <https://doi.org/10.1080/10298436.2018.1441414>.
- 33) Ibrahim, E.M., **El-Badawy, S.M.**, Ibrahim, M.H. et al. (2020) A modified pavement condition rating index for flexible pavement evaluation in Egypt. *Innovative Infrastructure Solutions*. 5, 55, <https://doi.org/10.1007/s41062-020-00304-z>.
- 34) Shiha, M. El-Badawy S., and Gabr, A. (2020) Modelling and Performance Evaluation of Asphalt Mixtures and Aggregate Bases Containing Steel Slag, *Construction and Building Materials*, 248 118710, <https://doi.org/10.1016/j.conbuildmat.2020.118710>.
- 35) Younes, M., Abd El-Hakim, R., **El-Badawy, S.**, and Afify, H. (2020) Multi-Input Performance Prediction Model for Flexible Pavements Using LTPP Database, *Innovative Infrastructure Solutions*, 5:27(2020), <https://doi.org/10.1007/s41062-020-0275-3>.
- 36) El-Khawaga, M., **El-Badawy, S.** & Gabr, A. (2020) Comparison of Master Sigmoidal Curve and Markov Chain Techniques for Pavement Performance Prediction. *Arabian Journal for Science and Engineering*, [doi:10.1007/s13369-019-04321-8](https://doi.org/10.1007/s13369-019-04321-8).
- 37) Azam, A., and **El-Badawy, S. M. and Alabbase, R.**, (2019) Evaluation of Asphalt Mixtures Modified with Polymer and Wax, *Innovative Infrastructure Solutions* (2019) 4:43, <https://doi.org/10.1007/s41062-019-0230-3>.
- 38) Mosbeh R. Kaloop, Alaa R. Gabr, **Sherif M. El-Badawy**, Ali Arisha, Sayed Shwally, Jong Wan Hu. (2019) Predicting Resilient Modulus of Recycled Concrete and Clay Masonry Blends for Pavement Applications Using Soft Computing Techniques [J]. *Frontiers of Structural and Civil Engineering*, [doi: 10.1007/s11709-019-0562-2](https://doi.org/10.1007/s11709-019-0562-2).
- 39) Amria, M., Gabr, A., **El-Badawy, S.**, (2019) Investigation of Waste Oils as Rejuvenators of Aged Bitumen for Sustainable Pavement, *Construction and Building Materials*, [Volume 220](https://doi.org/10.1016/j.conbuildmat.2019.05.180), Pages 228-237 <https://doi.org/10.1016/j.conbuildmat.2019.05.180>
- 40) 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*. <https://doi.org/10.1007/s13369-019-03803-z>
- 41) El-Ashwah, A., Awed, A., **El-Badawy S.**, and Gabr, A. (2019) An Innovative Approach for Developing Resilient Modulus Master Surface to Characterize Granular Pavement Materials and Subgrade Soils, *Construction and Building Materials*, Volume 194, 10, Pages 372-385, <https://doi.org/10.1016/j.conbuildmat.2018.10.212>.
- 42) Wagdy, E., Azam, A., and **El-Badawy, S. M.** (2019) Waste Materials and By Products as Mineral Fillers in Asphalt Mixtures, *Innovative Infrastructure Solutions* 4:5, <https://doi.org/10.1007/s41062-018-0190-z>.
- 43) Arab, M. G, Mousa, R. A., Gabr, A. R, Azam, A. M., **El-Badawy, S. M.**, and Hassan A. F. (2018) Resilient Behavior of Sodium Alginate Treated Cohesive Soils for Pavement Applications, *ASCE's Journal of Materials in Civil Engineering*, V31:1, DOI: [10.1061/\(ASCE\)MT.1943-5533.0002565](https://doi.org/10.1061/(ASCE)MT.1943-5533.0002565).
- 44) Elharoun, M., Elrawy, U. S., **El-Badawy, S. M.** (2018) Developing A Mode Choice Model For Mansoura City In Egypt, *International Journal for Traffic and Transport Engineering*, DOI: [DOI: 10.7708/ijtte.2018.8\(4\).10](https://doi.org/10.7708/ijtte.2018.8(4).10), 2018.8(4).10, pp. 528-524.
- 45) Abd El-Raof, S., Abd El-Hakim, R., **El-Badawy, S.**, and Afify, H. (2018) A Simplified Closed-Form Procedure for Network-level Determination of Pavement Layers Moduli from Falling Weight

Deflectometer Data, *Journal of Transportation Part B- Pavements*, 144(4): 04018052, <https://doi.org/10.1061/JPEODX.0000080>.

- 46) Abd El-Raof, S., Abd El-Hakim, R., **El-Badawy, S.**, and Afify, H. (2018) Structural Number Prediction for Flexible Pavements Using the Long Term Pavement Performance Data, *International Journal of Pavement Engineering*, Taylor & Francis, <https://doi.org/10.1080/10298436.2018.1511786>.
- 47) Gabr, Al, Shoaib, A., and **El-Badawy, S.** (2018) Economic Impact of Urban Traffic Congestion on the Main Routes in Mansoura City, Egypt, *Journal of Traffic and Transportation Engineering (English Edition)*, (2): 148 – 165. DOI: [http://dx.doi.org/10.7708/jtte.2018.8\(2\).01](http://dx.doi.org/10.7708/jtte.2018.8(2).01)
- 48) **El-Badawy, S.**, Abdel Hakim, R., and Awed, A. (2018) Comparing Artificial Neural Networks with Regression Models for Hot Mix Asphalt Dynamic Modulus (E*) Prediction, ASCE's *Journal of Materials in Civil Engineering*, 30(7): 04018128, DOI: [10.1061/\(ASCE\)MT.1943-5533.0002282](https://doi.org/10.1061/(ASCE)MT.1943-5533.0002282)
- 49) El-Tahan, D., Gabr, A., **El-Badawy, S.**, and Shetawy, M. (2018) Evaluation of Recycled Concrete Aggregate in Asphalt Mixes, *Innovative Infrastructure Solutions* 3:20 DOI: [10.1007/s41062-018-0126-7](https://doi.org/10.1007/s41062-018-0126-7).
- 50) Arisha, A., Gabr, A., **El-Badawy, S.**, and Shwally, S. (2018) Performance Evaluation of Construction and Demolition Waste Materials for Pavement Construction in Egypt, ASCE's *Journal of Materials in Civil Engineering*, V (30) 2, [https://doi.org/10.1061/\(ASCE\)MT.1943-5533.0002127](https://doi.org/10.1061/(ASCE)MT.1943-5533.0002127)
- 51) Omar A. Hegaba, **Sherif M. El-Badawy**, and Emad Y. Hashish (2017) Geological and Geotechnical Assessment of Gabal Ataqa Dolostones for Pavement Construction in Egypt" *International Journal of Sciences: Basic and Applied Research (IJSBAR)*, Volume 36, No 4, pp 56-73.
- 52) Ibrahim, E.M., **El-Badawy, S.M.**, Ibrahim, M.H. Gabr, A.R., and Azam, A. M., (2017) Effect of Geogrid Reinforcement on Flexible Pavements," *Innovative Infrastructure Solutions*, 2: 54. doi.org/10.1007/s41062-017-0102-7.
- 53) Elshayeb, M., **El-Badawy, S.**, and Shawaly, A. (2017) Comparison of AASHTO 1993 and MEPDG Considering the Egyptian Climatic Conditions," *Innovative Infrastructure Solutions*, 2:18, DOI: [10.1007/s41062-017-0067-6](https://doi.org/10.1007/s41062-017-0067-6).
- 54) Mousa, E., Azam, A. M., El-Shabrawy, M., and **El-Badawy, S. M.**, (2017) Laboratory Characterization of Reclaimed Asphalt Pavement for Road Construction in Egypt. *Canadian Journal of Civil Engineering*, 44 (6), pp 417-425. <https://doi.org/10.1139/cjce-2016-0435>.
- 55) Arisha, A., Gabr, A., **El-Badawy, S.**, and Shwally, S., (2016) Blends of Construction & Demolition Waste Materials and Recycled Clay Masonry Brick in Pavement. *Procedia Engineering*, Volume 143, pp 1317-1324, <https://doi.org/10.1016/j.proeng.2016.06.148>.
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- 62) Naguib, A., **El-Badawy, S.**, and Ibrahim, M. (2015) International Roughness Index Predictive Model for Rigid Pavements based on LTPP Data,” *Mansoura Engineering Journal*, ISSN-1110 0141.
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- 66) Khattab, A., **El-Badawy, S.**, Al Hazmi, A., and Elmwafi, M. (2014) Evaluation of Witczak E* Predictive Models for the Implementation of AASHTOWare –Pavement ME Design in the Kingdom of Saudi Arabia”, *Construction and Building Materials* Volume 64, pp 360-369, Elsevier. <https://doi.org/10.1016/j.conbuildmat.2014.04.066>.
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Peer Reviewed Conference Papers

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