


Ali Aboelmagd, M.sc.,

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Master of Science in Civil Engineering 2021(Highway Engineering)

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Summary

Eng. Ali Aboelmagd is an assistant lecturer in the Civil Engineering Department, Faculty of Engineering at Assiut University, Egypt. He completed his bachelor's degree in civil engineering with honors from Assiut University in 2013, ranking sixth among 450 students. Eng. Aboelmagd pursued a master's degree in highway engineering at Assiut University in collaboration with the American University in Cairo. Throughout his master's studies, he dedicated his efforts to improving asphalt roads and promoting sustainability in infrastructure development. The master's thesis focused on enhancing the quality and service life of asphalt pavements through the utilization of by-product materials. He published three research papers derived from his master's thesis. He designed and wrote the first draft of these published papers, and he was the corresponding author during the publication process. He completed a course on the applications of nanotechnology in civil engineering and undertook comprehensive training on the best practices and recent trends of asphalt mix designs. Through his master's, he used the Mechanistic-Empirical Pavement Design software (AASHTOWare) to predict the field pavement performance of the asphalt mixtures. With over 8 years of experience, Eng. Aboelmagd possesses a diverse background in transportation disciplines, including pavement engineering, roadway design and construction, traffic engineering, planning, and management. He hopes to delve deeply into the life cycle assessment of modified pavements and mitigation measures for climate change. Furthermore, he looks forward to exploiting his previous empirical research experience to narrow the gap between the experimental results and modeling results by using contemporary machine-learning tools.

EDUCATION

Preparatory PhD Courses in Civil Engineering (Highway Engineering) [Des 2021 – June 2023]

Civil Engineering Dep, Faculty of Engineering, Assiut University, Assiut, Egypt

Final grade: Distinction, GPA 4.

Master of Science in Civil Engineering (Highway Engineering) [Sep 2015 – Aug 2021]

Assiut University in Cooperation with the American University in Cairo, Egypt

General Grade in Courses: Distinction 90.25% (GPA=3.9).

Thesis Title: Evaluation of Using Low-Cost Nanomaterials on Performance of Asphalt Binder and Mixture.

Bachelor of Science in Civil Engineering [Sep 2008 – June 2013]

Civil Engineering Dep, Faculty of Engineering, Assiut University, Assiut, Egypt

Final grade: Distinction with honor “86.37%” (GPA=3.9), ranking 6th among 450 students.

Distinction in the graduation project (Special Structures - Reinforced Concrete).

ACADEMIC & TEACHING POSITIONS

Full-Time Assistant Lecturer [Oct 2021 – Present]

Civil Engineering Dep, Faculty of Engineering, Assiut University, Assiut, Egypt

Full-Time Teaching Assistant [Jan 2015 – Sep 2021]

Civil Engineering Dep, Faculty of Engineering, Assiut University, Assiut, Egypt

INTERNATIONAL CERTIFICATES

International English Language Testing System (IELTS ACADEMIC)

[March 2024]

Overall Score: 6.0

Graduate Record Examinations (GRE General)

[May 2024]

Quantitative Score: 154

RESEARCH INTERESTS

Economic and Sustainable Pavement, Transportation Engineering, Machine learning Tools, Life Cycle Assessment, Climate change, Recycling, RAP Asphalt, Self-healing Pavement, Permeable pavements, Pavement Distresses, and Nanotechnology.

LIST OF PUBLICATIONS

Aboelmagd AY, Khedr S, Moussa GS, Abd Alla E-SM, Enieb M, (2022) "Waste Nanomaterial-Modified Asphalt for Economic and Sustainable Pavement Construction". Innovative Infrastructure Solutions (**classified Q3 according to the Web of Science**). 7, 144 (2022). Doi: 10.1007/s41062-021-00737-0

Aboelmagd AY, Moussa GS, Enieb M, Khedr S, Abd Alla E-SM (2021) "Evaluation of Hot Mix Asphalt and Binder Performance Modified With High Content of Nano Silica Fume". JES Journal of Engineering Sciences 49 (No 4):378-399. Doi: 10.21608/jesaun.2021.70733.1046.

Aboelmagd AY, Enieb M, Moussa GS, Khedr S, Abd Alla E-SM (2021) "Predicted Pavement Performance of Asphalt Paving Modified with High Content of Nanosilica Fume Based on Egyptian Conditions" Proceeding of the 2nd International Conference on Civil Engineering: Recent Applications and Future Challenges (ICCE 2021) 30 October – 2 November, Hurgada, Egypt.

https://conferences.ekb.eg/article_1201.html

RESEARCH EXPERIENCE

- Blending nanomaterials with virgin asphalt binder through shear mixer.
- Investigation of physical-rheological properties, temperature susceptibility, aging effect, and economic benefit of the modified binders through rotational viscosity, rolling thin film oven test, penetration, and softening point tests.
- Theoretical experience in dealing with Superpave devices (DSR, BBR, RTFO, and PAV).
- Utilizing prediction models to estimate the rutting parameter ($G^*/\sin\delta$) for the modified asphalts using Bari and Witczak's prediction model.
- Evaluation of the stiffness, moisture damage, rutting, and fatigue of the hot asphalt mixtures through Marshall, indirect tensile strength, and double punching tests.
- Prediction of the field pavement performance of the asphalt mixtures using the Mechanistic-Empirical Pavement Design software (AASHTOWare Pavement ME Design).
- Scanning the nanostructure particles and evaluating the homogeneity of modified binders using Transmission Electron Microscopy (TEM) and Scanning Electron Microscopy (SEM) devices.
- Investigation of the changes in the chemical bonds of the modified asphalts using Fourier Transform Infrared Spectroscopy (FTIR).

TEACHING EXPERIENCE

Civil Engineering Dep, Faculty of Engineering, Assiut University, Assyut, Egypt

Courses: Highways and Airports Engineering, Transportation Planning and Traffic Engineering, Railway Engineering.

- Leading the discussion sections of the course throughout the semester.
- Supervising final-year student projects and grading problem sets.

TRAINING

- Essential Steps in Data Analysis for International Publishing (Spss)** [October 2022]
Science College, Assiut University, Assiut, Egypt
- Applied Basic Rheology Course** [March 2022]
International Academy of Rheology
- Nanotechnology Applications in Building and Construction** [March 2019]
Housing and Building National Research Center, Cairo, Egypt
- Best Practices and Recent Trends of Asphalt Mix Designs (Superpave)** [March 2017]
General Authority for Roads, Bridges and Land Transport, Ministry of Transport, Cairo, Egypt
- Essential Research Skills** [April 2016]
Knowledge Transfer Office, Assiut University, Assiut, Egypt

ONLINE COURSES

Egyptian Knowledge Bank (EKP)

Academic writing and publishing standards, Presentation Skills, Research Paper Writing, and Tips for a successful research career.

DIGITAL SKILLS

AASHTOWare / Python / Plaxis /, Autodesk Civil 3D/ Microsoft Office / Outlook / Zoom / Autodesk AutoCAD / Structural Analysis and Design Packages ETABS SAP 2000

HONOURS AND AWARDS

International Publishing Award, Assiut University, Assiut, Egypt

(2023)

International publishing award for the paper "Waste Nanomaterial-Modified Asphalt for Economic and Sustainable Pavement Construction". Innovative Infrastructure Solutions. 7, 144 (2022).
<https://doi.org/10.1007/s41062-021-00737-0>

Assiut University Excellence Award and Honor's Degree, Assiut University, Assiut, Egypt (2013)

A distinction award for excellent students for their academic performance through five years of undergraduate studies in Civil Engineering.

REFEREES

Prof. Dr. ElSayed Mohamed Abdalh

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Prof. Dr. Safwan Abbas Khader

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Prof Dr. Sherif Massoud Ahmed El-Badawy

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Prof. Dr. Mahmoud Enieb Osman

Professor of Highway Engineering, Civil Dept., Faculty of Engineering, Assiut University, Assiut, Egypt.

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