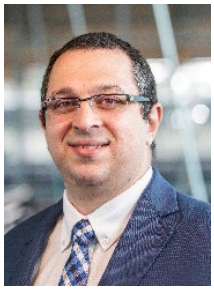

Michael Elwardany, Ph.D., P.E.

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FAMU-FSU College of Engineering

Dr. Michael Elwardany is an Assistant Professor in the Department of Civil & Environmental Engineering at FAMU-FSU College of Engineering. Elwardany has more than 15 years of experience in teaching, research, and consulting on pavement sustainability and resilience. He is the original developer of the Aging Duration Maps for Asphalt Mixture's Long-term Aging under the NCHRP 09-54 project, the Internal Restraint Damage Mechanism Model, and the ΔT_f parameter under NCHRP 09-60 and the Asphalt Industry Research Consortium (AIRC). Elwardany led more than 12 projects at the regional, national, and international levels. The outcome is disseminated in more than 37 journal articles, and 7 refereed final project reports to the US DOT SBIR, FHWA, NCHRP, and the Plastic Industry Association. Elwardany is a Professional Engineer in the State of Wyoming; Member of the TRB AKM20 Standing Committee for Asphalt Binders, chair of the Asphalt Chemistry Subcommittee, coordinator of the Taskforce on Sustainable Alternative Binders; Member of the TRB AKP30 Standing Committee for Design & Rehabilitation of Asphalt Pavements; Past member of the ASCE T&DI Airfield Pavement Committee; Active Member of the Association of Asphalt Paving Technologists; Active Member of American Society of Civil Engineers (ASCE); Active Member of RILEM.

Professional Preparation

Institution	Location	Major	Degree	Year
North Carolina State University	Raleigh, NC	Civil Eng.	PhD	2017
University of New Hampshire	Durham, NH	Civil Eng.	MS	2012
Alexandria University	Alexandria, Egypt	Civil & Env. Eng.	BS	2008

Appointments

Assistant Professor / FAMU-FSU College of Engineering 2022–present

Laboratory Manager & Lead Research Engineer / The Asphalt Binder & Mixture Laboratories at the FHWA Turner-Fairbank Highway Research Center 2020–2022

Program Manager for Paving Asphalts / Asphalt & Petroleum Technologies at the Western Research Institute 2017–2020

Achievements

Selected Contracts & Grants at FAMU-FSU CoE (of over $1.4 millions)

- **Elwardany, M.** (PI). (Jan 2024–Jan 2026). *Evaluation of Reclaimed Asphalt Pavement (RAP) in Mixtures Containing High Polymer Binder*. Funded by the Florida Department of Transportation. (SMO-24-06). Total award $240,000.

- Robert Custer (PM/PI), **Elwardany, M.** (Co-PI), & Kutay, M. E. (Dec 2022–Dec 2024). *Accelerating Performance Testing Using the Asphalt Mixture Performance Tester Equipment - Phase II*. Funded by the US DOT SBIR Program. (21-FH3). Total award $1000,000.
- **Elwardany, M.** (PI), & Kutay, M.E., and Raghu Satyanarayana (PM), (Jul 2021–Jan 2022). *Accelerating Performance Testing Using the Asphalt Mixture Performance Tester Equipment - Phase I*. Funded by the US DOT SBIR Program. (21-FH3). Total award $150,000.

Selected Publications

- Kim, Y.R., Castorena, C., **Elwardany, M.**, Rad, F.Y., Underwood, S., Gundla, A., Gudipudi, P., Farrar, M.J. and Glaser, R.R. (2018). NCHRP 09-54 Report 871: Long-Term Aging of Asphalt Mixtures for Performance Testing and Prediction. TRB, Washington, DC.
- Mensching, D.J., **Elwardany, M.D.** and Veginati, V., 2022. Evaluating the Sensitivity of Intermediate Temperature Performance Tests to Multiple Loose Mixture Aging Conditions Using the FHWA Accelerated Loading Facility's RAP/RAS Experiment. *Transportation Research Record,* 2676(10), pp.474-485.
- **Elwardany, M.,** Planche, J.P. and King, G. (2022). Proposed Changes to Asphalt Binder Specifications to Address Binder Quality-Related Thermally Induced Surface Damage. *Transportation Research Record,* 2676(5), pp.176-191.
- **Elwardany, M.**, Planche, J.P. and King, G., 2020. Universal and practical approach to evaluate asphalt binder resistance to thermally induced surface damage. *Construction and Building Materials*, 255, p.119331.
- Adams, J.J., **Elwardany, M.**, Planche, J.P., Boysen, R.B. and Rovani, J.F. (2019). Diagnostic techniques for various asphalt refining and modification methods. *Energy & Fuels*, 33(4).

Selected Awards

- Recipient of the Transportation Research Board (TRB) 2023 Fred Burggraf Award.
- Recipient of the Association of Asphalt Paving Technologists (AAPT) 2021 Walter J. Emmons Award for best research paper.
- Recipient of the ASCE Transportation & Development Institute, International Contest on Long-term Pavement Performance (LTPP) Data Analysis, First Place Award in 2016.

Relevant Experiences

- Developed a field aging model that is being integrated in next-generation Mechanistic-Empirical Pavement Analysis Software FlexPAVE™.
- Developed the Aging Duration Maps and the Climatic Aging Index.
- Developed the T_{IR} rheological parameter and the ΔT_f cracking index for binder characterization.
- Participated and led various task force and activities aiming to advance pavement sustainability and resilience under the various TRB committees.
- Organizing quarterly webinars for the Association of Asphalt Paving Technologists and the international asphalt community at large to promote sustainable practices and education.
- Advising three Ph.D. students whose primary research lies in sustainable and innovative pavement materials and structures.