

Newsroom

July 20, 2011

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Georgia Southern University Civil Engineering Professor to Examine Performance of Rubberized Road Materials for Georgia Department of Transportation

JULY 20, 2011

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Georgia Southern University associate professor of civil engineering Junan Shen, Ph.D., has been selected by the Georgia Department of Transportation (DOT) to conduct a laboratory study to determine if the performance of rubberized asphalt mix, which is derived from scrap tires and considered a “green” material, will make a viable alternative for use in road construction in Georgia.

The research project, which is the first awarded by the Georgia DOT to Georgia Southern University, will fund a one-year study to determine if the performance of rubberized asphalt is comparable to that of polymer-modified asphalt (PMA) pavements. As part of the study, Jeremy Todd Earnest, a Georgia Southern senior civil engineering technology major from Marietta, Ga., will assist Shen on the nearly \$75,000 project.

Findings in this preliminary study are intended to be used in a second, more comprehensive phase of the overall project, which would include field evaluations.

Three years ago, test sections on I-75 near Perry and I-20 in Augusta, Georgia, were paved with open graded friction course (OGFC) and stone matrix asphalt (SMA), respectively, using the “dry” process of modifying asphalt cement with crumb rubber. In the dry process, crumb rubber is concurrently blended with mix aggregates and asphalt cement at the plant, while in the “wet” process, crumb rubber is blended with the asphalt cement before the blended cement is mixed with aggregates. So far, the performance of these test sections has not been formally evaluated, nor has research on the dry process generally been documented. The wet process has been successfully evaluated and implemented by other states. Shen’s research will evaluate the materials’ long-term performance, enabling the Georgia DOT to decide whether dry process technology can be adopted for widespread use around the state.

“Through this study we will provide best-practice recommendations to the Georgia DOT for consideration as they look at road construction alternatives,” says Shen. “Our ultimate goal is to save money on road construction and this study is just the first phase of a much larger project that could have major benefits for Georgia taxpayers.”

“I am excited to work with Dr. Shen on this study for the Georgia DOT,” says Earnest, who hopes to become a structural engineer following graduation from Georgia Southern. “The opportunity to do research while being an undergraduate is incredible. It will give me real-world experience, and help

me compete in a very competitive job market. I would not necessarily have had this opportunity at another university."

In Georgia, OGFC and SMA layers are applied to interstate and state highway pavements as well as some urban main roads to improve safety and reduce such environmental considerations as water splash and noise. If the dry process technology is proven to work well, then both dry and wet rubberized OGFC and SMA will be viable alternatives, potentially reducing construction costs as well as being environmentally-friendly green technologies.

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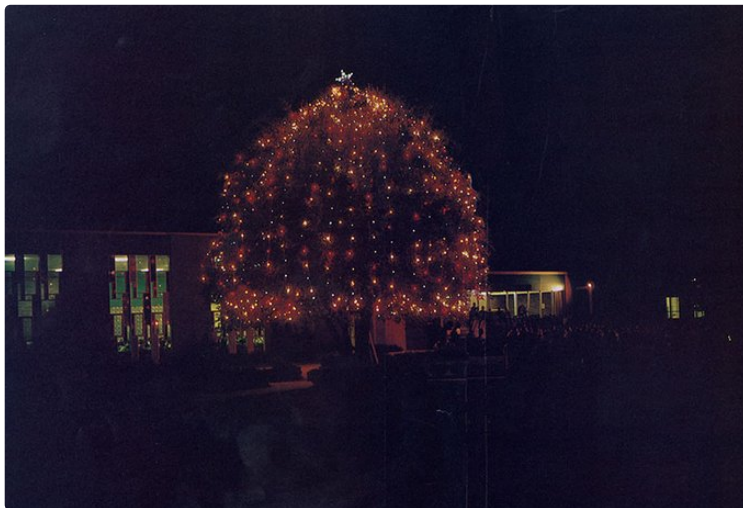
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