

# NEWS



TRANSPORTATION RESEARCH BOARD

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News Release

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## PAPER ON SELF-CONSOLIDATING CONCRETE

### WINS TRB'S K. B. WOODS AWARD

*“Evaluating Static Segregation Resistance of Hardened Self-Consolidating Concrete Using Image Processing Technology”* earned the Transportation Research Board’s (TRB’s) K. B. Woods Award for its authors Chuanxin Fang of Applied Research Associates, Inc., Illinois; and Samuel Labi of Purdue University. The award for the winning paper, which is available in the Compendium of Papers CD-ROM from the 86<sup>th</sup> Annual Meeting, will be presented on January 14, 2008, at the Thomas B. Deen Distinguished Lecture and Presentation of Outstanding Paper Awards during the Board’s 87th Annual Meeting. The K. B. Woods Award, given annually for the best paper in the area of design and construction of transportation facilities, honors the 19<sup>th</sup> Chairman of the Board’s Executive Committee.

Self-consolidating concrete (SCC) is a highly flowable, non-segregating concrete that, without benefit of mechanical consolidation, spreads into place, fills formwork, and encapsulates reinforcement. It is increasingly popular worldwide because it offers a high-quality product with significant reductions in equipment use, labor, and construction time and noise. The study describes the development and implementation of a methodology for automatically evaluating SCC stability using binary imagery and algorithms—rather than the traditional Hardened Visual

Stability Index, which is based on visual judgment. The study concluded that this new methodology provided a reliable assessment.

Chuanxin Fang is a Senior Engineer at Applied Research Associates, Inc. His research interests include pavement management systems, statistical analysis, pavement performance modeling, GIS/GPS applications in transportation, image detection application, and traffic simulation and operations. Fang is experienced in the development and analysis of pavement construction materials management databases, software development for implementing the American Association of State and Highway Transportation Officials' Mechanistic-Empirical Pavement Design Guide, computer simulation and analysis of Falling Weight Deflectometer readings. He holds B.S. and M.S. degrees in transportation engineering from the Southeast University, China; a second M.S. degree in computer science, and a Ph.D. in civil engineering from Purdue University. A registered professional engineer in Ohio and California, Fang is a member of the American Society of Civil Engineers.

Samuel Labi is an Assistant Professor in Transportation and Infrastructure Systems at Purdue University's School of Civil Engineering. Labi's research and teaching interests include management of civil infrastructure systems, pavement material characterization and quality control, system operations management (traffic monitoring, safety, congestion, and intelligent transportation systems), transportation economics and financing, and application of statistical and operations research tools in infrastructure systems management. He has served as a principal investigator, co-principal investigator, or research engineer for a number of infrastructure systems research projects sponsored by the National Research Council, Federal Highway Administration, and the Indiana Department of Transportation. Labi holds a B.S. degree from the University of Science and Technology, Ghana, and M.S. and doctoral degrees from Purdue University. He is a member of Sigma Xi and Chi Epsilon, and is involved as a member or participant with the American Society of Civil Engineers, TRB, Institute of Transportation Engineers, American Planning Association, and American Association for the Advancement of Science.

More than 10,000 policy makers, administrators, practitioners, researchers, and representatives of government, industry, and academic institutions are expected to attend the Transportation Research Board (TRB) 87th Annual Meeting, in Washington, DC, January 13-17, 2008. The meeting, held at the Marriott Wardman Park, Omni Shoreham, and Hilton Washington hotels, includes more than 3,000 presentations in 600 sessions, 85 workshops, and 400 TRB committee meetings covering all aspects of transportation.

The mission of the Transportation Research Board is to provide leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multimodal. A major focal point of TRB's activities, the Annual Meeting provides an opportunity for transportation professionals from all over the world to exchange information of common interest.

Organized in 1920, TRB is a division of the National Academies, which include the National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and National Research Council. The nation turns to the National Academies for independent, objective advice on issues that affect people's lives worldwide.

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