



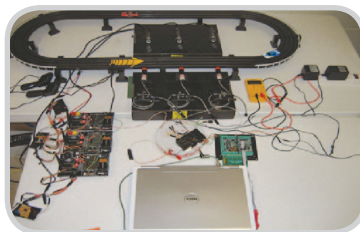
Dr. Mashrur (Ronnie) Chowdhury

Dr. Ronnie Chowdhury's career in intelligent transportation systems (ITS) began quite early in life and he's never looked back. Over a career spanning two decades he has been employed in both industry and academia, particularly in elucidating the practice, education and novel science behind ITS theory and making that theory relevant for actual use. "His great success is due, in part, to his leadership qualities," said one of his former Ph.D. students Dr. Ryan Fries, now an Associate Professor at the University of Southern Illinois at Edwardsville. "Dr. Chowdhury exhibits his leadership not only through his role in the research community; he is dedicated to promoting ITS careers to young engineers. Personally, he encouraged me to pursue my Ph.D. with a focus on ITS, and it was one of the best decisions I have made. I continue to see evidence of him inspiring other students towards careers in ITS. For example, each time I see him at conferences, his is usually accompanied by a group of bright and motivated students (undergraduate, M.S., and Ph.D.) interested in ITS."

In this career, in which he has excelled as a consultant, an educator and a scholar in ITS best practices, Dr. Chowdhury has been



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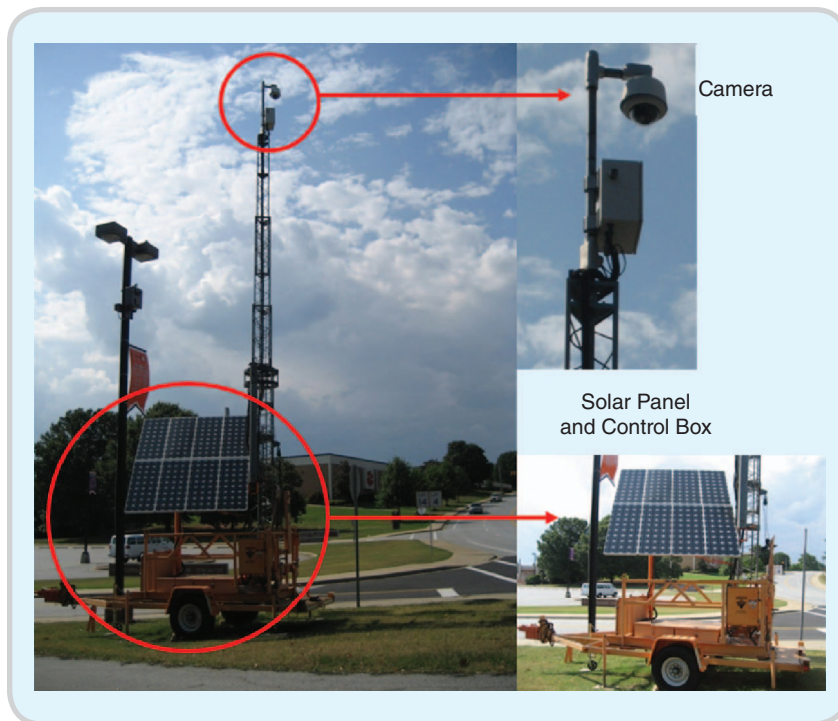


Laboratory prototype of the laser sensor system.

a leader in ITS planning, design and evaluation at both the state and federal level. While employed at Bellomo-McGee, Inc. (BMI) as a senior engineer and at Iteris, Inc., as a senior ITS engineer, Dr. Chowdhury led several ITS projects of national and regional significance. He has expanded his impacts in ITS since he joined the academia as an educator and researcher. As the director of the ITS Laboratory at Clemson University, he led a development of a transmission-based optical sensor system for traffic data collection; an inexpensive optical sensor system that measures both vehicle speed and counts. This elegantly

simple inexpensive sensor system is suitable for saturated deployment to form a densely distributed sensor network and can provide unique support for efficient traffic incident management. Additionally, because it may be quickly installed in the field without the need of elaborate fixtures, it can be deployed for use in temporary traffic management applications such as traffic management in road work zones or during special events. Laboratory set-up of the sensor system and a snapshot of its field evaluation are shown in the following pictures.

In his ITS lab, Dr. Chowdhury has led notable research on connected vehicle applications in traffic condition assessment and prediction, and in the energy management for Plug-in Hybrid Electric Vehicles (PHEVs) and charging operations support for Electric Vehicles (EVs). In one research project, sponsored by the U.S. National Science Foundation (NSF), he led the development of an innovative Energy Management strategy using the Adaptive Equivalent Consumption Minimization Strategy (A-ECMS), which utilizes predictive traffic data for real-time PHEV energy optimization. He also led the development of the "CUIntegration" simulator that integrates detailed vehicle models with microscopic traffic models, which can be used to evaluate traffic routing strategies, and the environmental and energy impacts of



Experimental field setup of video surveillance system.

conventional vehicles as well as any alternative fueled vehicle fleets, such as Hybrid Electric Vehicles (HEVs), PHEVs, EVs, and Hydrogen Fuel Cell Vehicles. CUIIntegration can simulate various applications of vehicle to vehicle (V2V) and vehicle to infrastructure (V2I) communications that can support energy and environmental objectives of conventional and alternative fuel vehicle operations.

Dr. Chowdhury's research on communication systems focused on addressing practical issues related to ITS system integration and ensuring operational quality for optimal performance. He has led initiatives in evaluating wireless communication systems for fixed sensor system and mobile applications. In one such project, his team evaluated 802.11 b/g wireless technology in a real-time traffic surveillance system under actual traffic conditions, for purposes of enhancing future online traffic monitoring applications. This experimental field setup, as shown in the following picture, provided useful

data for public agencies involved in video surveillance systems.

Dr. Chowdhury has received a range of accolades for his considerable body of research. He was an invited speaker at the National Academy of Engineering Conference on Indo-U.S. Frontiers of Engineering on his research on wireless communication alternative for ITS, a member of the IEEE ITS Society Board of Governors, a senior member of IEEE and an American Society of Civil Engineers (ASCE) fellow. He is the current Eugene Douglas Mays Professor of Transportation, a professor of civil engineering and a professor of automotive engineering departments at Clemson University. At Clemson University, he has been the recipient of the Faculty Mentoring Award (2013), the Quattlebaum Award for Faculty Achievement (2012), the IDEaS professorship (2011), Murray Stokeley Award for Excellence in Teaching (2009), Frank A. Burtner Award for Excellence in Advising (2010), and the Board of Trustees



Field evaluation of the laser sensor system.

Award for Faculty Excellence (2010 and 2011).

Dr. Chowdhury has received more than \$3 million in sponsored research from the National Science Foundation (NSF), U.S. Department of Transportation (USDOT), state transportation agencies and University Transportation Centers (UTC) in recent years. He and his team also recently won the "Connected Vehicle Challenge," sponsored by the U.S. Department of Transportation, for their Integrated Intelligent Transportation Platform (IITP) that encompasses a truly connected vehicle and infrastructure ecosystem. For this effort, his team was recognized at the "The Best of ITS" awards ceremony organized by ITS America, which occurred during the 2011 ITS World Congress in Orlando Florida.

Dr. Chowdhury is an associate editor of the *IEEE Transaction on Intelligent Transportation Systems* and the *Journal of Intelligent Transportation Systems*, and an editorial board member for the Transportation Research Part C Emerging Technology and Journal of Transportation Security. Dr. Chowdhury is also the author of two very novel textbooks on ITS concepts, the first published in 2003 by Artech House, described various ITS planning constructs, and the second, published by Wiley in 2008, focused on developing transportation security systems that are supported by ITS. He is a registered Professional Engineer in Ohio.

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