SPTC SEMINAR (1.5 PDH)
Tuesday, March 18, 2014 | Oklahoma Department of Transportation
10:30 a.m.-12:00 p.m. (CST) 200 N.E. 21st Street, Oklahoma City
Lobby area, 1st Floor, Commission Room
Refreshments will be served.

BIO:
Dr. Su, Yu-Min currently works as a Post-Doctoral Fellow of National Science Council at the Department of Civil Engineering, National Central University, Chungli, Taiwan. NCU is also his Alma Mater of Bachelor and Master of Science degrees. Dr. Su received his Ph.D. degree in Civil and Coastal Engineering from University of Florida (UF). During his Ph.D. work, he received a Fellowship from the International Road Federation (IRF) in 2008 and attended a technical training in X-ray computed tomography to become a certified operator since 2009. Dr. Su also received three consecutive outstanding achievement awards from 2010 to 2012 at UF and graduated in 2012. His research interests include nondestructive testing and evaluation in composite materials with X-ray computed tomography, mechanical and thermal analysis of pavement materials, creep and shrinkage evaluations in concrete, and pavement frictional properties assessments. He serves as the IRF sector coordinator in Taiwan and is a member of the TC-2 pavement sub-committee of Road Engineering Association of Asia and Australia (REAAA).

ABSTRACT:
Prediction of pavement temperatures and variation of temperature within the pavement is important to pavement design and performance evaluation. A temperature prediction model is developed to accommodate warmer subtropical climate and thicker pavements in Taiwan. Three pavement sections were constructed and instrumented to collect temperature data. Results showed that the peak temperature of AC layer occurred between noon and 2:00 p.m., while the maximum temperature in the base layer is attained after 5:00 p.m. Outgoing radiation, convection energy, and conduction energy were found to influence pavement temperature. Two sinusoidal functions were fitted based on the representative monthly temperature measurements and validated for AC and base layers. Results from this study enable field engineers to interpret FWD datarationally and accurately by incorporating the proposed models with in-situ ambient temperature and pavement surface temperature. The proposed models can be used to predict pavement temperature under weather extremes.