



Analysis of Asphalt Mixture Testing Data Into Pavement Durability

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Date: 27 December 2018 (Thursday)
Time: 16:30 - 17:30
Venue: Room Z405, 4/F, Block Z,
The Hong Kong Polytechnic
University, Hunghom, Kowloon
Hong Kong

SPEAKER'S BIOGRAPHY

Dr. Sanjeev Adhikari is an associate professor from Purdue University – Indianapolis. His research interests are:

1. Civil engineering materials/mechanics (asphalt, and aggregates) /soil foundation of highway infrastructure;
2. Material characterization and multi-scale modeling of behavior;
3. Pavements and transportation materials, soil pavement interaction, nondestructive testing measurements;
4. Use of sustainable materials like warm mix asphalt, plastic bags modified asphalt, fly ash/bottom ash, recycle HMA, epoxy asphalt on pavement, HMA pavement and overlays, micromechanics;
5. Mechanical testing and constitutive modeling of asphalt binders and mixtures.

ABSTRACT

The asphalt mixture is temperature sensible material and its mechanical characteristics are changed with loading time. It has high stiffness at low temperature and low stiffness at high temperature. The stiffness of asphalt materials is increased with decreasing loading time. Stiffness is associated with pavement distresses. In other words, the high-temperature region has higher deformation than low-temperature region and low-speed highway zone has higher deformation than high-speed highway zone. The asphalt concrete distress performance such as rutting at high temperature, fatigue cracking at intermediate temperature and thermal cracking at low temperature are the key performance factor on pavement analysis and design. The prediction of distress on the asphalt concrete is used by Mechanistic-Empirical Design Guide (MEPDG) software. For this software input parameter are traffic, materials properties, pavement structure, subgrade data, and climate.

HMA mixture dynamic modulus ($|E^*|$) is one of the most important parameters input of the MEPDG software to design asphalt pavement. The MEPDG relies heavily on the use of HMA $|E^*|$ for predicting the pavement's response to mechanical loads and environmental conditions. The computer modeling software such as Discrete Element Model (DEM) is used to predict the dynamic modulus.

*** All Interested Are Welcome ***

For further information, please contact Dr. Z. Leng at Tel. 27666007

Free Admission. Please reserve your seat with Mr. Zhifei Tan: zhi-fei.tan@connect.polyu.hk.

Certificates of attendance will be provided to participants if they attend the whole lecture.