

Tyre/ Road Noise Research in The Technical University of Gdańsk

Jointly Organized by The Hong Kong Institute of Acoustics and
the Department of Mechanical Engineering of Hong Kong Polytechnic University

Speaker: Prof. Jerzy Ejsmont (The Technical University of Gdansk, Poland)
Venue: Room EF 311, The Hong Kong Polytechnic University, Hung Hom, Kowloon
Date & Time: 31 Jul 2015, from 18:30 to 20:00 (reception start at 18:15)

Programme Highlights:

This seminar will present a summary of various activities undertaken and achievements gained in tyre/road noise research at the Technical University of Gdańsk, Poland led by Prof. Jerzy Ejsmont. It covers the following areas.

1. Description of the test facilities at Technical University of Gdańsk
2. Modelling of vehicle noise - VENOM model
3. Certification of CPX test vehicles
4. Noise generated by tyres designed for electric vehicles

Prof. Jerzy Ejsmont has started tyre/road noise research in 1978. First activities concentrated on literature studies and building of the test equipment. In 1980 he has designed trailer for tyre/road noise investigations called "Tiresonic Mk1". The trailer design was so successful that it started a line of trailers designated as Mk2, Mk3 and Mk4. Three Mk4 trailers were also manufactured for customers in Denmark, China and Poland.

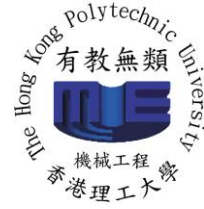
In 2000, together with Dr. Stanisław Taryma, he has constructed trailer for testing of tyre rolling resistance (called R^2). In 2014, the trailer was modified to Mk.2 version. It was and still is used for numerous research projects in Europe and USA. It is necessary to mention that there are only a few trailers (probably 3) in the world that may precisely measure rolling resistance of passenger car tyres. He designed two roadwheel facilities for tyre/road noise and rolling resistance measurements that are equipped with replica road surfaces including surface dressing, ISO reference test surface, SMA8, DAC16.

In late 90s, he participated in development of innovative "composite wheel" invented by H-E Hansson. The wheel exhibited very low noise emission and low rolling resistance. The design was very promising, but due to limited resources it was not possible to overcome technological problems with durability.



香港聲學學會

Hong Kong Institute of Acoustics



Prof. Ejsmont participated in five European Framework Programs, namely: HARMONOISE, IMAGINE, SILVIA, PERSUADE and ROSANNE. All of the mentioned project deal with environmental aspects of traffic, that is noise and rolling resistance of tyres. He also coordinated many international and national projects including project LEO devoted to electric and hybrid car tyres.

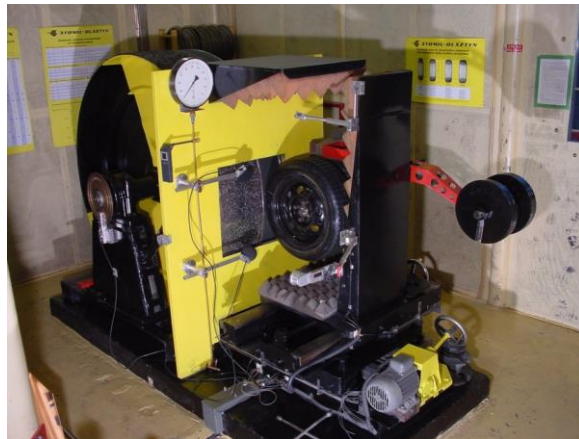
Prof. Ejsmont is also involved in research on ballistics, firearms construction and military vehicles. He is an active long distance shooter winning many international and national rifle and sniper competitions. Some of the instruments that prof. Ejsmont has designed or co-designed are presented in following figures.



Trailer "Tiresonic Mk4" for tyre/road noise measurements



Trailer R² Mk.2 for tyre rolling resistance measurements



Roadwheel facility with 1.7 m drum and two replica road surfaces.

Registration

For registration, please fill in and submit the form by 29 July 2015 at the following website. http://www.wal.hk/hkioa/tyre_road_noise.html. The seminar is free of charge for all members, related professionals, interested persons in first-come first-served based.

Wilson HO

Chairman, Activities Sub-committee of HKIOA