Seminars at the Melbourne Centre for Nanofabrication

Guest Speaker: A/Prof. Mohammad Fard RMIT University

Physiologically and Biodynamic Effects of Physical Vibration on Human Body

> 10:00-10:30 05/10/2017

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Physiologically and Biodynamic Effects of Physical Vibration on Human Body



A/Prof. Mohammad Fard RMIT University

Within the past two decades, the growing applications of the Computer Aided Engineering (CAE) have allowed the automotive/aerospace industry to design lighter structures with high safety and improved interior noise-vibration comfort.

However, the lightening of the structures increases the transmission of the high frequency vibration into the vehicle occupant body. The transmission of vibration into the human body raises the cognitive load of the vehicle occupant and makes it psychologically and physiologically harder to maintain the performance of cognitive tasks such as driving.

This seminar reviews the team recent research activities on characterisation and prediction of the physiological and biodynamic effects of the exposure to high frequency vibration. The team's newly developed FEM model of the human body and the human-body-vibration measurement method will all be reviewed.

The recent findings in psychologically and physiologically effects of vibration will also be presented. Finally, some of the advanced CAE modelling techniques that are used to predict and reduce the transmission of the high frequency vibration into the occupant body will be presented.

A/Prof Fard has obtained his PhD in Mechanical Engineering from Tohoku University, Japan in 2003. He was then awarded the highly competitive Japan JSPS Postdoctoral Fellowship in 2003. Following that, A/Prof Fard received a highly coveted offer of permanent employment as a lead engineer at the Nissan (Japan). He worked more than five years in CAE Design of vehicle body and successfully completed several Nissan and Infinity projects such as Nissan X-Trail, Micra, and Leaf. He has several Nissan Executive awards and PE (Professional Engineer) title from Nissan.

A/Prof. Fard Joined RMIT in January 2009. He has developed Human Vibration Laboratory at RMIT where his research team (including 7 current PhD students) are working on different international industry projects. As a sole investigator, A/Prof. Fard has attracted more than \$1 million research income from national and international companies since 2013.

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