THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

COLLEGE OF PROFESSIONAL AND CONTINUING EDUCATION
專業及持續教育學院

School of Professional Education and Executive Development
專業進修學院

SPEED

RCGETB
Research Centre for Green Energy, Transport and Building
綠色能源、交通運輸及建築科研中心

Research Centre for Green Energy, Transport and Building (RCGETB)

Research Seminar on Smart City and Energy Conservation

DATE: 29 August 2022 (Monday)

TIME: 2:00 pm – 4:00 pm

VENUE: Online – MS Teams

Speaker: Dr Anand VYAS

Lecturer
Division of Science, Engineering and Health Studies (SEHS)
CPCE, PolyU

Topic: Magnetron Sputtered Coatings with Enhanced Mechanical and Tribiological properties

Biography

Dr Anand Vyas received his PhD in 2002 from the City University of Hong Kong. He then worked at the City University of Hong Kong and The Chinese University of Hong Kong in various research positions. He joined the Department of Mechanical Engineering, The Hong Kong Polytechnic University and worked as a Lecturer from 2007 to 2010, then as a Teaching Fellow till 2020. Dr Vyas has been actively involved and interested in research related to Surface Coatings and their Mechanical & Tribological Properties, Structure and Properties of Materials, Materials Characterisation, and High-temperature Superconductivity. His current research work is on nanocomposite coatings.

Abstract

As the current manufacturing industry shifts towards environmentally friendly green engineering, Physical Vapour Deposition (PVD) method has become increasingly a popular coating option. Magnetron sputtering technique, a PVD technology, sees many applications in performance coatings with their favourable properties, such as increased hardness, oxidation resistance, and machining efficiency of cutting tools. However, achieving lower friction coefficient and wear rates are normally attained at the cost of highly compromised mechanical properties, which again poses a challenge in applications. To address this challenge, the design of the coatings and the complex coating structure must be controlled. This seminar focuses on the deposition of chromium and titanium-based nanocomposite coatings including multilayer films and their mechanical and tribological properties.

Speaker: Dr Muhammad ASIM

Lecturer
Division of Science, Engineering and Health Studies (SEHS)
CPCE, PolyU

Topic: Low grade waste heat recovery potential from Air-Conditioning systems - An overview from Hong Kong's Perspective

Biography

Dr Muhammad Asim is a Lecturer in the Division of Science, Engineering & Health Studies (SEHS) at CPCE. His research interests focus mainly in the field of Renewable Energy including Advanced HVAC systems, integrated waste heat recovery techniques, thermofluids, solar thermal desalination, thermal management of high power electronics in electric vehicles and designing of heat pumps. He completed his PhD from the City University of Hong Kong in 2020 and served as Post-Doctoral Engineer in Sustainable Energy Ltd. for one year where he extensively worked on the optimisation and designing of refrigeration and heat pump systems.

Abstract

The global population growth together with the economic development results in the rapid acceleration in world energy consumption. EIA predicts the increase in global energy demand will increase by 47% in the next 30 years. The severe energy situation has attracted much attention on power generation from renewable energy resources. Air-conditioning (cooling) is the fastest growing end-use in buildings. While highly efficient air conditioning (AC) units are available on the market, most consumers purchase models that are two to three times less efficient. Implementing energy efficiency standards could improve AC energy performance by around 50% by 2030 and help put cooling on track with the Net Zero Emissions by 2050 Scenario. This presentation demonstrates the waste heat recovery potential from air-conditioning systems and methods for waste heat recovery using some environmentally friendly refrigerants from Hong Kong's perspective.

Speaker: Mr Stephen KONG

Lecturer
Division of Science, Engineering and Health Studies (SEHS)
CPCE, PolyU

Topic: Towards automated tower crane location selection under the Building Information Modelling process

Biography

Mr Stephen Kong obtained his BSc (Hons) degree in Building Technology and Management and Master of Philosophy degree in Construction Information Technology from the Department of Building and Real Estate, PolyU. He had over 10 years' teaching experience in PolyU before joining this institution in 2018. Stephen is interested in Building Information Modelling and IT applications in construction. He has extensive experience in providing research and consultancy services in these areas to major contractors in Hong Kong. He has produced over 30 papers in refereed journals, international conference proceedings and books.

Abstract

Building Information Modelling (BIM) has been promoted by the Hong Kong SAR government for several years and its adoption by the industry is increasing. While tremendous effort was spent to create BIM models, the major uses of the models are limited to mainly for design coordination and visualisation. This research work try to extend the practical use of the BIM models for construction planning. In particular the work will focus on tower crane related planning issues as tower crane is a major facility that contributes to project success. Optimising the use of tower crane has the potential to increase construction productivity and reduce energy use which in turn make construction greener.

All are welcome!

Register Now!

Kindly make the reservation at https://forms.office.com/r/7c7fk2VfgE.

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