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Special Session on

"Modelling, control and energy saving technologies in the Heating, ventilation, and air conditioning (HVAC) Systems"

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Heating, ventilation, and air conditioning (HVAC) system is an important part of residential structures such as single family homes, apartment buildings, hotels and senior living facilities, medium to large industrial and office buildings such as skyscrapers and hospitals, vehicles such as cars, trains, airplanes, ships and submarines, and in marine environments, where safe and healthy building conditions are regulated with respect to temperature and humidity, using fresh air from outdoors. It is also one of the major energy consumers in the building sector, especially for tropical countries like Singapore where air-conditioning operates on a 12-months basis (Generally 40% to 70% energy consumptions are caused by HVAC system in a commercial buildings in the world). This special section is dedicated to the research of HVAC system's modelling, control and energy saving technologies, which can improve both the Indoor Environmental Quality (IEQ) and energy efficiency of the buildings.

Topics of the Session:

- Physical/data-driven/hybrid modelling technologies for the HVAC system and its subsystems (e.g., the air treatment part, the chiller part, the cooling tower part, the air handling unit (AHU) part, etc.).
- ntelligent optimization technologies for the HVAC system and its subsystems (e.g., the air treatment part, the chiller part, the cooling tower part, the air handling unit (AHU) part, etc.).
- Advanced control strategies for the HVAC system and its subsystems (e.g., the air treatment part, the chiller part, the cooling tower part, the air handling unit (AHU) part, etc.).
- Energy saving technologies for the HVAC system and its subsystems (e.g., the air treatment part, the chiller part, the cooling tower part, the air handling unit (AHU) part, etc.).