

LESO **LUNCHTIME*** LECTURES

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Key enabling technologies for smart and adaptive windows

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Introduction by Dr Andreas Schueler – Followed by open discussion

Summary

Adaptive buildings require intelligent features to dynamically adapt a building's performance to both external environmental conditions and internally to the occupants' desired health and comfort. Smart technologies can complement the building's adaptability and significantly mitigate its energy carbon emissions impacts. Intelligent and smart technologies are the core focus of adaptive building facades as they control, store and convert solar energy to achieve the desired performances. Nevertheless, passive technologies, and most particularly highly performing passive technologies, are essential in achieving baseline building performance; this is the foundation upon which adaptable smart and intelligent technologies is built. A further challenge is in the fabrication and practical integration of these technologies with the building that require novel façade assembly systems as well as smart monitoring and control infrastructures.

About the speaker

Dr Philippe Lemarchand did his PhD on the integration of switchable technologies for adaptive building façades at the Dublin Institute of Technology, Ireland. His research pursues the characterisation and development of energy- and cost-efficient building technologies. He is an active member of the COST action TU1403, the Adaptive Facades Network, and the IEA Task 56 on Building Integrated Solar Envelope Systems for HVAC and Lighting. He is involved in three national projects about:

- sustainable building technologies,
- the development of thermo-concrete walls
- energy efficient buildings.

His role includes DIT development and integration of Education for Sustainable Development.

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