



UNIVERSITI
TEKNOLOGI
MARA

Cawangan Perak



BUILDCON2023

**COMPILATION OF PROJECT INNOVATION IDEAS
SEMESTER MARCH – AUGUST 2023**

EMBRACING SMART CONSTRUCTION TRANSFORMATION

BUILDERS' CONVENTION DAY 2023

**Department of Built Environment Studies and Technology
College of Built Environment
Universiti Teknologi MARA Perak Branch**

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Organised by
Department of Built Environment Studies and Technology
College of Built Environment
Universiti Teknologi MARA Perak Branch
Malaysia

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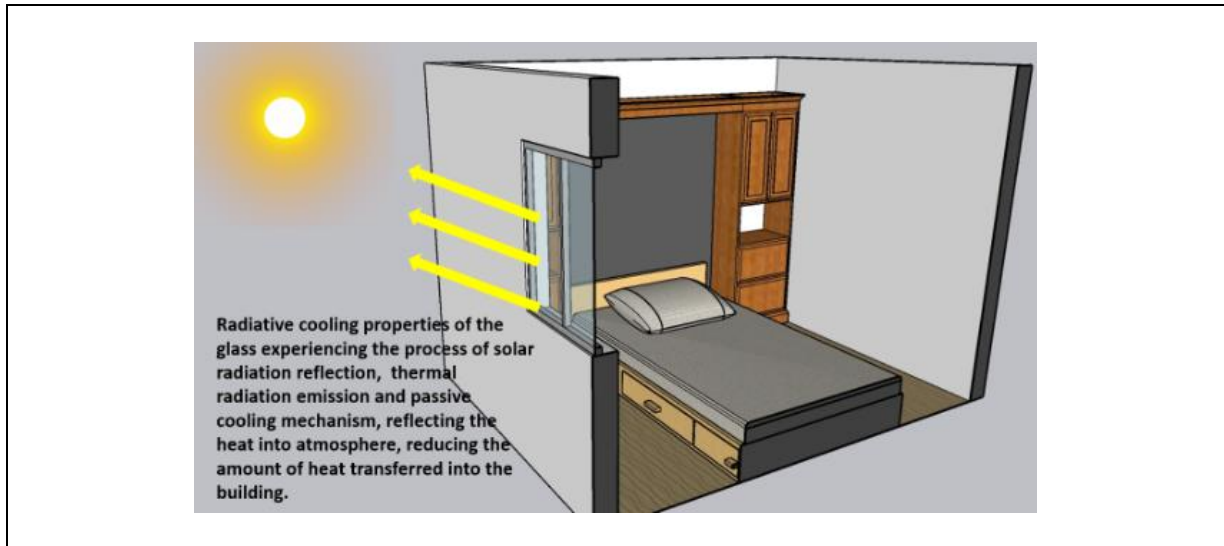
RADIATIVE COOLING SMART GLASS

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Radiative Cooling Smart Glass

Innovation Idea:

An innovative solution is sought to address the escalating global energy demand and the environmental impact of conventional cooling methods. In this context, the development of radiative cooling smart glass is proposed as a potential energy-efficient building technology. The limitations of traditional glass windows and existing smart glass technologies have been thoroughly investigated, emphasising the pressing need for a transformative approach. The primary objectives of this study encompass the conceptualisation of design ideas, the creation of a functional prototype, and the demonstration of radiative cooling smart glass performance. Furthermore, an analysis of its marketability potential was conducted, facilitating its widespread adoption in the construction industry. However, the study does recognise certain limitations. Data scarcity, experimental constraints, and potential technological advancements may influence the scope and implications of the research. Additionally, an in-depth economic analysis of adopting radiative cooling smart glass is not fully addressed, including initial investment costs and affordability considerations for various building types and regions. Radiative cooling smart glass emerges as a promising solution to enhance energy efficiency and promote sustainability in commercial buildings, particularly in tropical climates like Malaysia. Its inherent passive cooling capabilities, extended durability, and reduced energy consumption position it as a transformative advancement in the market. By adopting radiative cooling smart glass, Malaysia can make substantial progress in its sustainable building initiatives, contributing to a greener and more eco-friendly built environment. The successful implementation of this innovative technology holds the potential to drive significant energy savings, cost reductions, and improved occupant comfort. As Malaysia continues its pursuit of energy efficiency and environmental responsibility, the adoption of radiative cooling smart glass can play a vital role in shaping a more sustainable and resilient future for the nation's construction industry.

Surat kami : 700-KPK (PRP.UP.1/20/1)

Tarikh : 20 Januari 2023

Prof. Madya Dr. Nur Hisham Ibrahim
Rektor
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Cawangan Perak



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Sekian, terima kasih.

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Saya yang menjalankan amanah,

SITI BASRIYAH SHAIK BAHARUDIN
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nar

Setuju.

27.1.2023

PROF. MADYA DR. NUR HISHAM IBRAHIM
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