



UNIVERSITI
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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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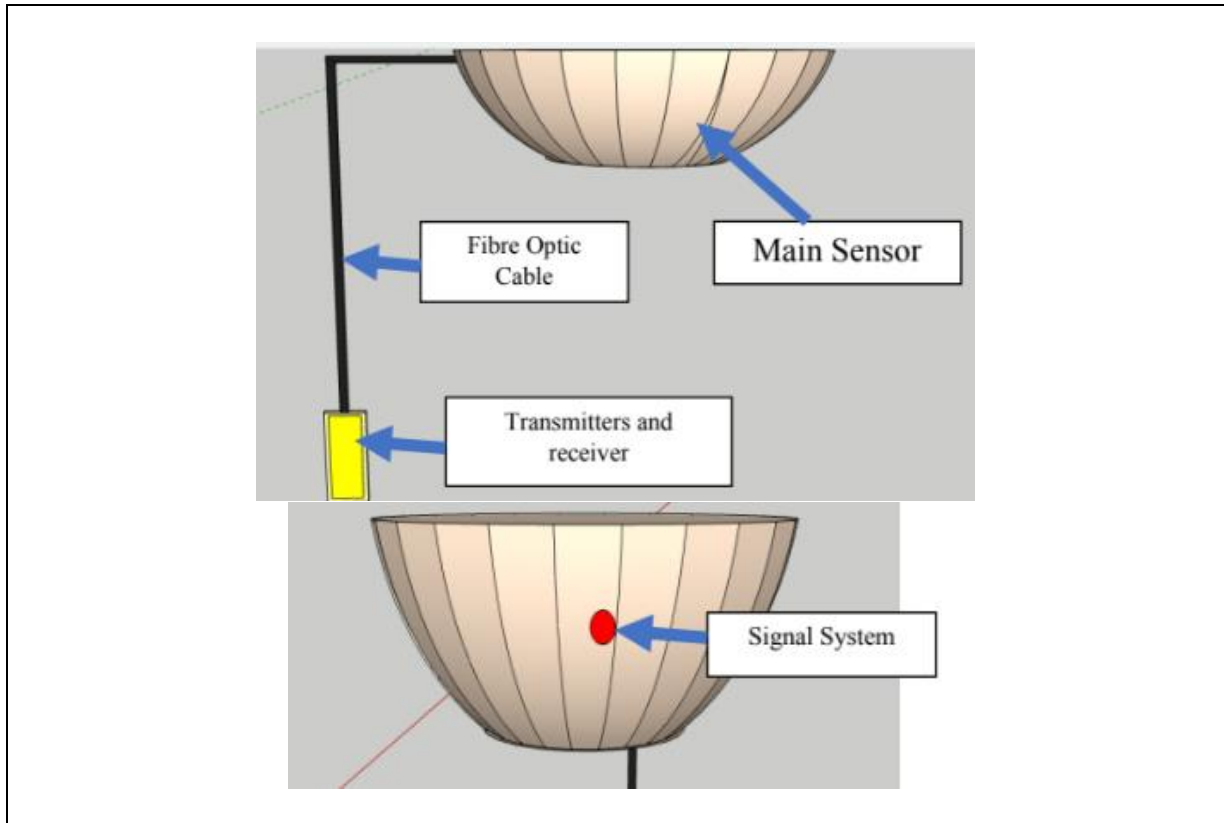
ADVANCED FIBRE OPTIC SENSOR (CRACK DETECTOR)

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Advanced Fibre Optic Sensor (Crack Detector)

Innovation Idea:

Structural defects such as cracks are one of the most critical issues that can arise at any phase of construction. Detecting concrete cracks may be difficult because they often occur beneath the surface. The use of fibre optic sensors was first introduced to detect cracks that occur in concrete. The aims of this innovation project are to develop an advanced fibre optic sensor design idea, assemble the prototype from the improvised design, demonstrate its performance, and assess its marketability potential. Secondary data collection methods were used to gather information from previous studies. Based on this research, it is noted that the efficiency of fibre optic sensors can be affected by various factors such as the expensive cost of fibre optic cables, even though they have the capability to detect cracks in buildings. By identifying these key problems, this study offers an opportunity to propose innovative solutions. As a result, new concepts have been introduced to address these problems and at the same time promote the use of advanced fibre optic sensor tools, with additional modifications and features. The idea development process is aided by desktop research and 3D simulations. In comparison to existing fibre optic sensors, the Advanced fibre optic sensor offers greater efficiency in detecting cracks in buildings. Therefore, this invention is expected to have a significant impact on small-scale construction businesses in Malaysia.

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Tarikh : 20 Januari 2023

Prof. Madya Dr. Nur Hisham Ibrahim
Rektor
Universiti Teknologi MARA
Cawangan Perak



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Kelulusan daripada pihak tuan dalam perkara ini amat dihargai.

Sekian, terima kasih.

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Saya yang menjalankan amanah,

SITI BASRIYAH SHAIK BAHARUDIN
Timbalan Ketua Pustakawan

nar

Setuju.

27.1.2023

PROF. MADYA DR. NUR HISHAM IBRAHIM
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