Research

EVcas Lamp, innovation by UMPSA researchers, transforms streetlight poles into electric vehicle chargers

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PEKAN, 6 October 2025 – Two researchers from Universiti Malaysia Pahang Al-Sultan Abdullah (UMPSA), Dr. Wan Muhammad Noor Sarbani Mat Daud from the Faculty of Mechanical and Automotive Engineering Technology (FTKMA), and Ts. Dr. Muhammad Ikram Rashid from the Faculty of Electrical and Electronic Engineering Technology (FTKEE) and Automotive Engineering Centre (AEC), successfully developed an innovation named EVcas Lamp, an electric vehicle (EV) charging system integrated directly into streetlight poles.

This innovation began in early 2023 and was completed in August 2024 with a Proof of Concept (POC) before being further developed into the latest version equipped with an automatic payment gateway.

According to Dr. Muhammad Ikram, the idea stemmed from his personal experience as a frequent electric vehicle user who often faced difficulties finding charging stations in public areas.

“In other countries, many EV chargers are installed directly on streetlight poles.

“From there, we thought of modifying existing streetlight poles to function as a two-in-one system that illuminates the road and charges electric vehicles,” he explained.

This research project was carried out with the involvement of UMPSA students and collaboration with EV Plus Mobility Sdn. Bhd. through a matching fund that supported the development of the payment gateway system.

He added that the EVcas Lamp was built by incorporating key components such as a circuit breaker, magnetic switch, and OCPP microcontroller into the structure of the streetlight pole.

“These components were then programmed to operate in tandem with an electronic payment system.

“Through this approach, users only need to scan a QR code and make a payment before starting the charging session.

“With an estimated cost of RM4,000 for the basic unit and RM6,000 for the full version with payment system, the EVcas Lamp is suitable for use by individuals, local authorities, hotels, and public institutions such as mosques and recreational parks,” he said.

According to Dr. Wan Muhammad Noor Sarbani, the main goal of developing the EVcas Lamp is to increase access to EV charging facilities nationwide, including in rural and remote areas.

“We hope to see EVcas Lamps installed across Malaysia, from cities to villages.

“It not only saves space but also utilises existing infrastructure to support the nation’s green mobility agenda,” he said.

The product is also planned to be improved with anti-vandalism and anti-hogging features, making it safer and more practical for public use.

The EVcas Lamp has won gold medals at CITREX 2024 and 2025, as well as gold at ITEX 2025, in addition to receiving a Special Award from the University of Jeddah.

The team also won the Best Pitching Award at the Innovation and Business Pitching Programme held at the World Trade Centre (WTC) Kuala Lumpur.

Both researchers hope that local authorities, hotel operators, and mosque management across the country will collaborate in expanding the use of the EVcas Lamp.

In fact, they also aspire to expand this technology internationally as part of Smart City and Green Mobility initiatives.
In addition to the EVcas Lamp, the research group has produced several other innovative products, such as the Imami Watch and Airbag Phone Case, demonstrating UMPSA’s continuous commitment to producing creative researchers who bring real impact to society.

By: Safriza Baharuddin, Centre for Corporate Communications and Hardyana Mohd Saman, Research and Innovation Department
Translation by: Dr. Rozaimi Abu Samah, UMPSA Press

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