

Kyoto Eco-Friendly Electric Car

Abstract

Responding to Kyoto Protocol on global warming concerns, Kyoto University's Venture Business Laboratory (VBL) is now leading the Kyoto-Car Project to provide eco-friendly transportation solution to society. Kyoto-Car integrates not only the most recent high-technology advances but also a sense of traditional arts and culture. It is expected to lead to a revitalization of human lifestyle, environmental improvement, and creation of more novel technological and business opportunities.

On one good sunny Sunday of 12 July 2009, NanoGlobe team visited the Kyoto University Museum, hosted by Prof. Kazumi Matsushige, a very visionary researcher in Kyoto University and director of Kyoto University's Venture Business Laboratory (VBL). We were impressed by the three eco-friendly electric vehicles being showcased; and one of them is called Bamgoo. Unveiled in November 2008, Bamgoo is a unique ecologically and human friendly single-seat electric vehicle equipped with a body made of braided rods of bamboo, integrating advanced technology with Japanese traditional specialty of craftsmanship and arts. Bamgoo was developed as part of the Kyoto-Car Project led by VBL. The Kyoto-Car Project also involves other organizations such as Toyochikuko Inc. (participated in weaving the bamboo rods of Bamgoo) and Robo-Garage (participated in developing the concept car) as well as cooperates with different project, such as the Kyoto Neo Nishiyama Culture Project. In addition, it involves a few industry players such as Nagase for their trading expertise, Captex for the car battery, and Nichicon for the car capacitor/electric condenser.

The objectives of the Kyoto-Car Project are to develop research comprehensively for practical application of electric cars and to educate post graduated students in efforts to align with what stated in Kyoto Protocol regarding environmental and energy concerns. In addition, the project is targeted for maximum utilization of natural energy resources, innovation of most-advanced technology, integration with Japanese traditional craftsmanship and arts, consideration of urban life style, local and public communities, significant concerns on transmission of information, human and sensitivity, and international cooperation and its future developments.

The electric cars developed in the project are envisioned to have many components of most advanced technology such as single crystal silicon solar cell on top of the car, thin film solar cell, coating with photocatalysis, high power LED, biodegradable plastics, high temperature resistant silicon carbide

integrated chip (IC), fast charging battery and lead free solder, in order to align with the idea of being eco-friendly cars for the society. The cars will be gas emission free thus allowing it to be shared within the available space in the house. Soon, the electric cars can easily be charged at any convenient stores available in Japan. In addition, the car can also be utilized as a backup battery in emergency situation. More interestingly, the cars will also be able to move sideways based on the mechanics developed for the car. Hence in overall, it is envisioned to improve the quality of human life and the quality of the environment we live in.



Bamboo with the other two electric vehicles being showcased in Kyoto University Museum



VBL's Director Prof. Kazumi Matsushige and NanoGlobe's Director Dr. Lerwen Liu next to Bamgo