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"Bridging the Gaps with Creativity for Future Sustainability"

EDITORS AND COMPILERS:

Prof. Madya Dr. Shafinar Binti Ismail
Mohd Halim Bin Mahphoth
Aemillyawaty Binti Abas
Fazlina Mohd Radzi
Aidah Alias
Ilinadia Jamil
Nor Yus Shahirah Hassan
Shafirah Shaari
Farihan Azahari

COVER DESIGN:

AFTI Sdn Bhd

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Division of Research and Industry Linkages
Universiti Teknologi MARA MELAKA
KM26 Jalan Lendu,
78000 Alor Gajah Melaka
Tel +606-5582094/ +606-5582190 / +606-5582113
Web: www.miiex2017.com

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CAPACITIVE POWER TRANSFER FOR SMALL APPLICATION: BASED ON BLUETOOTH SWITCHING TECHNOLOGIES

Mohd Sabahi Harraz bin Mohd Sharif, Muhammad Izzat Ariff bin Sulaiman, Khairul Kamarudin bin Hasan, Muhammad Asraf Bin Hairuddin, & Mohamad Zhafran Bin Hussin

UiTM PASIR GUDANG

Abstract

This project is about new technologies by using capacitive based method in Wireless Power Transfer. Normally, when want to connect or powering any devices, wire is the main component used between the power supply and devices, with this current technology, connect the device no longer need to use wires that can give trouble such as circuit fault, short circuit and any wide dangerous. It will use electric field between parallel plate capacitor to transfer the power. The benefit of this concept, it can create a reform which is UAV charging, it can also used with contactless concept, which is this product will charge when it moving at port bearing plate capacitor to transfer power, Electric field is a key part at one CPT system when it commands maximum capacity power transfer and system performance. The steps to test all of features constructed as well in this project. Finally, a prototype of a CPT system was successfully developed several power at 4MHz frequency by controlling frequency produce by output Arduino due. Finally, a prototype of a CPT system is successfully developed which produced output power through a capacitive plate size is 12cm x 12cm at 0.1cm of air gap distance. The power-receiver side of CPT, in general, is small system volume and profile, which means that CPT is suited for small size applications such as biomedical implants, medical applications or charging of space-confined system such as robots or mobile device and etc.