HONG KONG ICT AWARDS 2022 香港資訊及通訊科技獎

ASTRI

Energy Efficient Carbon Neutral DC Building Technologies

Objective:

Develop a more comprehensive solution which works coherently with nowadays energy saving technologies to enable a greener building with sustainable development capability

Advantages:

Converts the incoming electricity in a(an) home/office from AC voltage to DC voltage and power the appliances connected to DC voltage grid:

1. **Bring "DC Voltage" be the main actor** – converting the incoming electricity of a home/office from AC voltage to DC voltage and power the appliances connected to the DC voltage grid. The presented technology and system level demonstration/use case are the *first kind in HK* (upon our best knowledge). *All appliances* connected to the DC voltage grid are beneficial from energy saving.
2. **Digitalized the "old school" circuit breaker** – a semiconductor based with digital control DC circuit breaker is developed. It is *x100 times faster* in protection than the 100 years-old mechanical circuit breakers in response to a short circuit event. It minimizes the short circuit current, thus the seriousness of the failure, and increases system reliability substantially.
3. **Highly efficient** – with *99.9%* superior efficiency of the digital DC circuit breaker and *approached 99%* power conversion efficiency of the power supply system.
4. **Sustainable technology development** – the presented solution can *work coherently* with market available existing sensor-driven energy saving solutions.
5. **Continuous power** – *seamless power transition technology* between grid and battery in case of power outage and recovery

ASTRI 應科院 - 創新直流電技術 https://www.youtube.com/watch?v=Z-BTGMCF7_I&t=1s