CUHK Smart Garden: An Innovative Teaching and Learning Platform for Renewable and Recycling Devices Development

Dongkun HAN, and Asta Lai Fan LAI
Department of Mechanical and Automation Engineering, CUHK

Renewable Energy Devices Development
- Wind turbine with 3D printing materials.
- Hydropower generator and self-made water turbine.
- Solar panel with hybrid multi-junction concentrator.

Key Features of the Platform
- Irrigation system
- Aquaponic tank
- Robotic collector
- Interest group
- Lab sessions
- Research

Feedback from Students
It was of great pleasure for me to learn and study at the Smart Garden.
I found my learning quite easy with the help of the devices and facilities at the Smart Garden.
Life is much easier with the hands-on experience and practical exercises.
The Smart Garden gives me a valuable attitude toward a green society.

Do not know
Disagree
Agree

The Smart Garden helps me to understand the basic concepts in energy.
The Smart Garden makes my study more interactive and interesting.
The Smart Garden provides an effective way to produce renewable devices.
Overall, I like the learning experience based on the Smart Garden.

Do not know
Disagree
Agree

Acknowledgement
This project is supported by the Teaching Development and Language Enhancement Grant from the Chinese University of Hong Kong. We appreciate the active participation from 3 interest groups and students from courses UGE81307 and EEN2020.

Department of Mechanical and Automation Engineering