KES International

International Conference on Sustainability in Energy and Buildings

Invited Sessions

Title of Session: Sustainable Food Production

Name of Chair:

Diana Waldron (Lead Chair)
John Littlewood
Robert Howlett

Description:

The population of the Earth is projected to reach approximately 10bn by 2050. Feeding a population of this size while also safeguarding the planet's resources will need new innovations spanning a number of technological areas. New advances will be required to help ensure that food production for a population of that size is efficient, economic and sustainable.

Future sustainable food production will require techniques such as precision farming, new sensor methods, for example incorporating geospatial techniques, allied with intelligent decision support and reasoning, ensuring optimum use of resources and minimum waste. In addition to new developments in plant and soil science, recent advances in areas not conventionally associated with food production such as the internet of things (IoT), artificial intelligence and machine learning will be required.

Techniques such as vertical farming and horticulture can also extend food production into new spaces, for example, urban areas that have relatively confined horizontal spaces. Hydroponics, aquaponics and aeroponics can replace the soil conventionally needed for crops, with cultivation using water or steam supplemented with nutrients. This uses much less water than soil-based farming, and crop yields can be several times higher.

This session invites contributions from academics, practioners, researchers and scientists on all areas relating to the issues mentioned above.

Applicable topics include (but are not restricted to):-
– sustainable agriculture and horticulture, high-technology food production, vertical farming and horticulture, building integrated agriculture, roof gardens, urban farms, hydroponics, low energy techniques for protected cultivation, controlled environment agriculture, smart systems for food production, sensors, geospatial sensing, virtual sensor techniques, intelligent decision support, big data analysis and more.

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