Online Lecture

Sustainability in the Water-Energy-Food-Environment Nexus: the Role of Chemical Engineers

Presented by

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Abstract

In a world with an increasing population and finite natural resources that are not uniformly distributed, the need for ever more innovative engineering to solve the problems and produce new and better products with a negligible environmental footprint has become urgent. The resources, in addition to being location dependent, are also technology dependent for their utilization. For example, non-renewable energy sources are available in finite quantities only at certain locations on the earth, and, while the technology for their use is well developed, their utilization causes emission of harmful greenhouse gases. Renewable energy sources on the other hand, are available in greater quantities at different times and at different locations, but their use is limited by available technologies even though they do not cause negative environmental impacts. Water resources is also not uniformly available on the earth and recycle of treated wastewater is necessary. Similarly, available land on the earth for food production is limited.

Chemical engineering and related sciences and technologies must play a key role in meeting future societal needs. For example,

- Promote research and development as a fundamental pillar and encourage technology development to achieve a planet able to sustain a growing population, while improving quality of life.
- Facilitate global dissemination of chemical engineering technical knowledge and industrial best practices, striving to bring together academia and industry worldwide.
- Promote conservation and care of global resources, health, safety, and the environment.
- Promote the highest standards of professional ethics and conduct for chemical engineers worldwide and to safeguard the public.

The goals of chemical engineers should be to use their skills to improve the quality of life, foster employment, advance economic and social development and protect the planet through sustainable development.

The lecture will highlight the opportunities for chemical engineers to contribute to the sustainable development of society through the development of novel and innovative technologies, together with a brief overview of the current status in terms of the energy-water-environment-food-health nexus.

Date: 25 July, 2020, Saturday

3:30-3:40 Introduction and Orientation 3:40-4:40 Lecture 4:40-5:00 Discussion

Organized by
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