

INAUGURAL ADDRESS

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SUMMARY

Within the framework of the Sustainable Development Goals (SDGs) of the United Nations (UN), responsible resource production and consumption in a way that preserves the ecological footprint, coupled with challenges to meet the needs of the growing population, while minimising the pressure on the planet, will be the great challenge of engineers. Therefore, a circular economy (CE), which is regarded as a resource optimisation concept, stimulates the conservation of materials, energy and other resources by reducing, reusing and recycling them in various ways. Furthermore, Sustainable Chemical Engineering Practices (SCEPs) that consider the application of knowledge gained by study, experience and practice, could be critically applied to develop economic ways of using materials and energy for the benefit of mankind, and to accelerate the realisation of the SDGs; in particular, Goals 3, 6, 7, 12 and 13. Chemical engineering contributes to various aspects of human life, ranging from the production of food and energy, and the provision of water, sanitation and shelter, to the provision of health care using chemical processes. Sadly, as a result of unsustainable chemical engineering practices, unintended by-products of these processes have caused significant damage to human lives and the ecosystem. However, recent research efforts have been directed at eliminating or minimising the negative ecological footprints of unsustainable chemical engineering activities by closing the material cycles and creating value-added commodities from the waste products of these processes. These efforts are integral to CE concepts. My own research efforts over the years have contributed to this area by employing SCEPs; in particular by developing and applying nanomaterials to waste treatment and valorising waste materials into value-added commodities. This lecture will highlight some thought-provoking research activities in this area.

INVITATION
VIRTUAL LECTURE
27 October 2020
18:00

**SUSTAINABLE CHEMICAL ENGINEERING
PRACTICES AS A CATALYST TO REALISE THE
SUSTAINABLE DEVELOPMENT GOALS (SDGS)**

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