CHEMISTRY SEMINAR

COLLEGE OF CHEMICALS & MATERIALS
Chemistry Department

"Frontiers in CO_2 Valorization: Perspectives from CO_2-Hydrogenation and Dry Reforming of Methane Reactions

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ABSTRACT:

Growing CO_2 emissions and global warming have intensified concerns over fossil fuel consumption, while the renewable sources are still maturing. Thus, it is imperative to valorize CO_2 to value-added chemicals for environmental, social and economic merits. This seminar will discuss the importance of CO_2 valorization to produce olefins, oxygenates, aromatics and syn-gas through thermocatalytic reactions. Due to thermodynamics and kinetics nature of the CO_2-hydrogenation and dry reforming of methane reactions, catalysts with intrinsic physico-chemical properties to achieve high activity, selectivity and stability are needed. Insights into the catalyst's formulation strategies and process conditions for efficient conversion of CO_2 into selective products will be discussed.

BIO:

Dr. Saheed Ganiyu is an Associate Professor of Chemistry Department, and Research Scholar at the Interdisciplinary Research Center for Refining and Advanced Chemicals. He holds PhD from King Fahd University of Petroleum & Minerals (KFUPM), and he is actively working in the development of advanced materials for catalytic and environmental applications. He is a Principal Investigator (PI) at the Catalysis and Carbon Utilization (CCU) lab in the Chemistry Department, KFUPM. His research interests focus on the synthesis and characterization of advanced materials (zeolites, porous carbon, metal oxide etc.), CO_2 hydrogenation into value-added products, CO_2 dry reforming of methane, CO_2 capture by porous sorbents, separation, adsorption, and extraction of pollutants, membrane design for water filtration and purification. He has authored several papers in reputable journals and holds more than 10 US patents.

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