ROCHESTER SECTION, INC. of the AMERICAN CHEMICAL SOCIETY

Nazareth COLLEGE

Chemistry In Emerging Technologies Lectures

Peckham Hall, Rm. 12, Nazareth College, 4245 East Ave., Pittsford, NY

Monday, October 28, 2013

Sugars from Biomass - Applying Biotechnology to Chemical Synthesis

7:00 pm: Introduction by Arunas Chesonis, Sweetwater Energy CEO, followed by lecture by Sarad Parekh, Ph. D., Sweetwater Energy CTO

The recent volatility of petroleum prices is stimulating the biorefining industry to diversify its raw material feedstock, using a broad-based sugar platform technology. Lignocellulosic biomass is widely recognized as the promising high-volume, low-cost feedstock from which one can derive C5- and C6-rich sugar streams, that can be bioconverted into biofuels and chemicals. Various emerging technologies for producing biofuels and chemicals and the current challenges for commercialization will be reviewed and technology that generates C5 and C6 sugar-rich sugar streams will be discussed. This talk will further highlight: 1) the importance of biomass harvesting and storage technologies, 2) specific pretreatment conditions and various process strategies for deriving streams rich in C6 and C5 sugars for biofuels production, 3) review of recent advances made at Sweetwater Energy in sugar conversion technologies, and finally, 4) process scale-up, that enables process commercialization of biomass into cellulosic sugars for various applications in ethanol, oleo chemicals and advanced fuels, such as jet fuel. (**www.sweetwater.us**)

Dr. Sarad Parekh has more than 25 years of industrial experience in biochemical engineering, synthetic biology, microbiology, fermentation technology, and biomass-related process development and commercialization. Prior to joining Sweetwater Energy, he served as VP of R&D at Qteros, as well as Director of Pilot Plant Operations at Phyton Biotech, and `Global Technology Leader at Dow AgroSciences. Dr. Parekh also brings expertise in commercialization of various chemical and pharmaceutical operations from his experience as Section Head of Biotechnology in Technical Operations at Merck Manufacturing Division. Dr. Parekh earned his BSc in Chemistry, MS in Microbiology and his Ph.D. in process engineering from the University Department of Chemical Technology, Mumbai, followed by postdoctoral research at the Department of Biochemical Engineering at the Univ. of Western Ontario, and Chemical Engineering at the Univ. of Toronto. Dr. Parekh also spent three years as Research Fellow at the Food Engineering Department at the Univ. of Illinois Champaign Urbana. He won a commercialization award from the Corn Marketing Board for his work on production of deicing chemicals by fermentation from renewable sugars and Green Chemistry Challenge Award in 1999. He has several patents to his credit, more than 40 publications and chapters in peer-reviewed journals, and has edited three books on various topics related to industrial biomass conversion, including engineering microbial strains, process improvement, scale-up and commercialization

8:15 – 9:30 p.m.: Reception / Poster Session – Peckham Hall Lobby

Further information on these lectures, poster submissions and other Rochester ACS Section events is available at www.RochesterACS.org

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