



THE SALZBERG CHEMISTRY SEMINAR SERIES



The City College
of New York



Monday, October 28, 2024 @ 12:00 noon – MR1027

Molecules To Materials - Biomass as A Platform for Molecular Design

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Abstract: Developing functional materials from renewable resources would be fascinating yet demanding practice, which will have a direct impact on industrial applications, and economically viable choices. This talk discusses an emerging model of generating new chemicals, intermediates, soft matter and energy storage components from biomass. Our continued efforts over two decades in this area have led us to develop new materials from molecules derived from industrial by-products and co-products. The family of new materials generated include molecular gels, solid bilayers, scintillating gels, battery components, liquid crystals, and polymers. Intriguingly, following the principles of green and supramolecular chemistry, we have developed building blocks-to-assembled materials viz environmentally benign antibacterial paints, oil spill recovery materials, energy storage devices, vegetable oil structuring agents and cancer detecting gels. These results will lead to efficient molecular design of supramolecular architectures, soft matter, and next generation multifunctional interfacial chemicals from underutilized plant/crop-based renewable feedstock.

Biography: George John is recognized for his research in the field of functional molecular materials from renewable resources and their potential utility in energy technologies and materials science. After receiving his Ph.D. in Chemistry (CSIR-NIIST), he held research positions in the Netherlands, Japan, and the United States before joining the City College of New York. Currently he is a Professor of Chemistry and Biochemistry at CCNY. The research in John's laboratory is highly interdisciplinary and is focused on molecular design of synthetic lipids, soft matter, and organic materials chemistry. His group has successfully developed environmentally benign antibacterial paints, oil spill recovery materials, molecular gel technologies and vegetable oil thickening agents. He is a Fellow of the Royal Society of Chemistry, a senior Fulbright Scholar to India, and was a recipient of the Tokyo University of Sciences President Award, AOCs-EAT Outstanding Achievement Award, CCNY Division of Science Award and the Kerala Centre Award.

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