

MONDAY

# COLLOQUIUM

## Molecules to Materials - Biomass as a Platform for Molecular Design

George John (CUNY Graduate Center, New York)

02 Sep 2024 (Monday) | 16:00 Hrs (Tea / Coffee 15:45 Hrs) | Venue: TIFRH Auditorium

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 underutilised plant/crop-based renewable feedstock.