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2nd World Congress on

# Biopolymers

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### Superior thermoplastics prepared entirely from lipids: Synthesis, structure and properties

Functional thermoplastics are much sought after because of their reprocessibility and wide applicability. They are used in a wide variety of applications ranging from automotive parts and building construction to footwear, wire and cable insulation jackets, biomedical devices, etc. Polyesters, polyesteramides and polyesterurethanes present a versatile combination of chemical and physical properties such as biodegradability, flexibility, resistance to dilute acids and alkalis, thermal stability and mechanical strength. There is a desire to utilize renewable feedstock such as vegetable oils to synthesize these materials and therefore reduce their carbon footprint. This talk will detail a careful structure-function approach to the optimization of monomeric structure, polymerization protocol and polymer structure so as to produce lipid-based thermoplastics which are equivalent to or even more functional than current thermoplastics used in the industry. The talk will focus on the synthesis of the monomers, the variation of polymerization protocol, and the relationship of structure to mechanical, thermal and degradation properties.

### Biography

Suresh S Narine was named in 2011 as one of Canada's Top 40 Under 40 Leaders, is Professor of Physics and Astronomy and Chemistry at Trent University. He is also in the Natural Sciences and Engineering Research Council of Canada, Industrial Research Chair in Lipid Derived Biomaterials, the Ontario Research Chair in Green Chemistry and Engineering and the Director of the Trent Centre for Biomaterials Research. His work focuses on the creation of petrochemical replacements for pharmaceuticals, lubricants, polymers, adhesives, and high-value materials from vegetable oils. He is the author of nearly 200 peer reviewed publications and has more than 60 patents.

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