

### 2018~2019学年第2学期第13周学术活动安排(3)

序号	主办单位	时间	地点	报告题目	报告人	报告人 职称	报告人单位	联络人
沁湖讲堂之学术 (化学) 第145讲	化学与化工 学院	2019年5月21日 (上午)11:00-11:45	青山校区教二楼 2205	蓖麻油-异氰酸 酯预聚物作为淀 粉的交联剂	Mario Gauthier	教授/ 首席科 学家	加拿大滑铁卢 大学 /滑铁卢纳米 技术研究院	程正载 13212700651

校科协

2019年5月20日

#### 报告人简介

**Mario Gauthier教授**长期从事有机高分子合成、表征与应用及纳米有机高分子材料合成与应用方面的研究工作，担任加拿大滑铁卢顾问委员会、滑铁卢大学材料科学与工程项目顾问委员会、大学任命评审委员会、圭尔夫大学-滑铁卢大学联合研究生中心委员会等机构的委员，获得加拿大自然科学与工程技术研究理事会 (NSERC) 基金项目经费达到千万加元。在纳米高分子材料、分支聚烯烃材料合成等领域的研究工作突出，发表200多篇SCI收录高水平研究论文。本次报告摘要：Castor oil is a triglyceride containing on average 2.7 hydroxyl groups per molecule. These hydroxyl groups were reacted with toluene diisocyanate (TDI), either with or without catalyst, to form a prepolymer. <sup>1</sup>H NMR analysis of the products indicated that all the hydroxyl groups reacted under the conditions used, and that reactive NCO groups were left in the prepolymer. Analysis by size exclusion chromatography revealed that the prepolymer contained predominantly monomeric modified triglycerides, but oligomerized triglycerides (not observed in the raw castor oil) were also present in the product, as well as a small amount of unreacted TDI. The modified triglyceride prepolymer was reacted with starch to form urethane linkages, thereby acting as a cross-linker and introducing hydrophobic character to the starch. No atoms are lost as by-products, so this reaction is atom-efficient, and the resulting urethane linkages are more stable than for other modified starch products such as esters, which makes castor oil-modified starch less sensitive to hydrolysis.