



***Molecular and Performance Properties of Poly(amides & imides) and  
The Use of Graphene Oxide Nano-particles for improvement***

**John-Andrew Samuel Hocker**

College of William & Mary, Department of Applied Science, 2016

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Advisor: David Kranbuehl, Professor of Chemistry

**Abstract**

Macroscopic properties of polymers, and in general all types of materials, are innately related to their molecular structure and intermolecular properties. This dissertation offers insight into how the molecular structure, chain properties, and inter-molecular chain interactions within PA11 can be used to explain and predict improved macro level performance properties; and how the addition of graphene oxide nanosheets enhances the performance properties of PA11 and polyimide(ODA-BTDA) through those same intermolecular interactions.