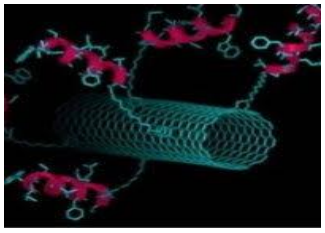

NanoBio Summit 2018

Hosted by

Tuskegee University

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Alabama State University

Embassy Suites Hotel & Conference Center • Montgomery, AL

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ABSTRACT TEMPLATE

Abstracts for presentation at the 2018 NanoBio Summit are being solicited from all attendees. Abstracts should include title, authors with each of their institutions identified, and purpose, methods, results and conclusions. Abstracts should be typed in Microsoft Word, Times New Roman 11 font as shown below with a limit 250 words, not including title, authors and affiliations. The presenting author(s) name should be underlined. Awards will be presented to poster presentation winner's in **Biological** and **Physical Science** Categories for undergraduate and graduate - 1st, 2nd, and 3rd place, at $300, $200 and $100, respectively.
All abstracts should be emailed to nanobio2018@gmail.com prior to June 15th, and presenters must be registered to have abstract considered for presentation.

Abstract Title: New Times Roman 14 (Bold) & Centered

Properties of Graphene Nanoplatelets Reinforced PLA/PHBV Polymer Blend Nanocomposites Thin Film

Author Name[1], Author Name [2], Author Name[3], and Author Name [4]

[1]Biology Department, [2]Materials Science and Engineering
Tuskegee University

List of authors and Affiliation: New Times Roman 10 & Centered. Underline presenter name

Abstract: New Times Roman 11 (Bold) & Centered

Abstract

Blending of polymers is one of the techniques used in improving their properties and performance. In the current study, two biodegradable polymers, polylactic acid (PLA) and Poly(3-hydroxybutyrate-co-3-hydroxyvalerate), commonly known as PHBV were blended (PLA/PHBV) at different compositions. Blended polymer with goal of enhancing the mechanical properties. Measured amount of PLA and PHBV pellets were individually dissolved in chloroform prior to mixing together to form polymer blended. Samples with combination of 75% PLA and 25% PHBV polymer blend showed most optimal mechanical and thermal properties when compared to that of 100% PLA and PHBV samples respectively. Properties of this blend was further enhanced by reinforcing it with graphene nanoplatelets (GNPs) at different weight percentage loading (0.1, 0.2 and 0.3 wt. % GNP). Differential scanning calorimetry (DSC) analysis showed two glass transition temperatures (Tg), corresponding to that of PLA and PHBV. The results indicate a degree of immiscible present as evident from the appearance of two Tg values. However, with the addition of GNP, a single Tg was observed, indicating that GNP acted as compatibilizer for both polymers. Blended samples with 0.2 wt. % GNP showed highest enhancement in crystallinity and melting temperature compared to other GNP loadings, and properties of individual polymers. Similarly, tensile properties of blended polymer were enhanced, with 0.2 wt. % GNP showing the most enhancement and 0.3 wt. % the least.

Funding Acknowledgement:

Category: Biological Science (BS) / Physical Science (PS)

Body of Text: New Times Roman 11 (Limit 250 words)

Category for Competition: New Times Roman 11 (Bold)