

3<sup>rd</sup> International Conference and Exhibition on

# Biopolymers & Bioplastics

September 12-14, 2016 San Antonio, USA

## Comparative analysis between maize and cassava starch through XPS

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The difference of the performance between corn and cassava starch caused by the different content of amylose and amylopectin were studied contrastively. Fourier transform infrared spectroscopy (FTIR), differential scanning calorimeter (DSC), thermogravimetric analysis (TGA), X-ray diffraction (XRD), X-ray photoelectron spectrometer (XPS), scanning electron microscopy (SEM) and bonding strength were characterized to analyze the difference between corn starch and cassava starch. The results showed that: Both the dry and wet bonding strengths of cassava starch adhesive were higher than that of corn starch. The FTIR results indicated that the number of hydroxyl groups in corn starch structure was higher than that in cassava starch. According to the TGA analysis, the thermal stability of corn starch and cassava starch showed unclear difference, but the residual mass of corn starch was higher than that of cassava starch. XPS data demonstrated that the content of carbon in corn starch was slightly higher than that in the cassava starch. According to the characterization of SEM, the corn starch exhibited an irregular shape while the cassava starch particles were oval.

### Biography

Yanhua Zhang has completed her PhD from Northeast Forestry University and Post-doctoral studies from Northeast Forestry University School of Electrical and Mechanical. She has published more than 25 papers in reputed journals and has been serving as an Editorial Board Member of reputed.

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