**Materials Seminar**

Department of Materials Science & Engineering

# Tuesday February 6, 2018

2:15 – 3:15 ~ SERF 307

**Please join us for refreshments at 2:10**

"Development of Carbon Materials from Lignin"

**Speaker:**



**Dr. David P. Harper, Associate Professor**   
Center for Renewable Carbon

The University of Tennessee-Knoxville

Abstract:

Lignin’s carbon dense aromatic structure and abundance holds promise to be a replacement for carbon derived from fossil or mined sources. However, lignin’s heterogeneous, amorphous structure and difficulty isolating it in high purity from woody feedstocks makes predicting processing performance and carbon structure difficult. In this presentation, strategies for melt processing multiple lignin feedstocks from organosolv, kraft, and other fractionation technologies into carbon fibers will be discussed along with the relative advantages/disadvantages compared to PAN based fibers. Further, the influence on processing and lignin source on the development of carbon structure will be address. Preliminary models for lignin carbon materials will be presented along with potential applications in filtration, energy storage, and composites.

Biography:

Dr. Harper received a BA in Physics from West Virginia University and PhD in Civil Engineering from Washington State University in 2003 with a focus on structural composite materials. He was Post-Doctoral Fellow at the USDA Forest Products Laboratory in Madison, WI. Dr. Harper joined the Department of Forestry, Wildlife, and Fisheries in 2004 on at the University of Tennessee located within UT’s Institute of Agriculture. Since then, his research has focused on making new, high value materials from renewable, plant-based sources.

Please DO NOT REMOVE UNTIL FEBRUARY 6 AT 5PM