

Department of Physics and IEEE NBC subsection

From NMR to Terahertz Probing Wood-Water Interactions

Speaker: Dr. Ian Hartley, ESM/Physics, UNBC

Abstract:

The structure of wood is one of the most complex natural biomaterials to study. Many physical properties are modified with the presence of water at the anatomical level that influences its behavior as a building material or as a musical instrument component. Most wood products are in environments of low and/or high humidities, and, therefore, to completely understand the role water plays, it is important to investigate the interaction of water with the wood material at the molecular level. This can be accomplished with several experimental techniques, including proton nuclear magnetic resonance (NMR) and terahertz (THz) spectroscopy among others. In this talk, results will be presented of experiments that use those techniques that help to tell the story of the mechanisms of wood-water interaction, namely of the different types of water present in wood.

+ Date

Friday
February 28, 2014

+ Time

2:30 P.M.

+ Location

Library Building
5-174

+ Contact

Name: Dr. Matthew Reid
Phone: 250-960-6622
Email: matthew.reid@unbc.ca



Dr. Ian Hartley

Bio: Dr. Ian Hartley is Professor in the Ecosystem and Science Program, with joint appointment in the Department of Physics. He holds a BSc in Physics and MScF in Wood Science from the University of New Brunswick and a PhD in Wood Physics from the University of British Columbia. Prior to coming to UNBC, he was an Assistant Professor of Forest Products at Mississippi State University. He is a Fellow of the Institute of Materials, Metals and Mining (Britain) and held Adjunct Professor appointment in the Department of Physics at the University of Waterloo. At UNBC, Dr. Hartley teaches forest products and wood science courses, and supervises graduate students in the of wood-water interaction at a molecular level for solid wood and composite materials. Dr. Hartley has published over 50 journal and technical articles and has made over 50 presentations at conferences and other technical sessions. He has research collaborations with UBC, FPInnovations (CT Imaging Centre; Evalutree), University of Waterloo, University of Tennessee, Auburn State University and Louisiana State University. At the UNBC 2007 Convocation, Dr. Hartley was awarded the Excellence in Teaching Award.