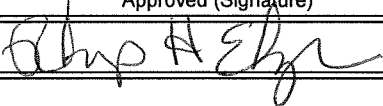


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U.S. Department of Agriculture Accomplishments Report AD-421 U.S. Dept. of Agriculture, State Agricultural Experiment Stations and Other Institutions			Date (Month, Day, Year) 03/22/2012
1. Accession 0224770	Agency Identification No. 2. NIFA 3. LA.B	5. Work Unit/Project No. LAB94091	6. Status Annual Report
7. Title Recycling of Decommissioned CCA-Treated Wood Into Value-Added Products			
12. Investigator Name(s) (Last Name and Initials) Shupe, T. F.			
20. Termination Date 12/31/2015		40. Period Covered (mo/da/year): 01/01/2011 TO 12/31/2011	
Outputs: The findings from this project have been disclosed to numerous stakeholder groups in the form of refereed papers, non-technical publications, and academic presentations. Moreover, technology has been developed to improve a US Patent awarded to the PIs group in 2006. The current disclosure has been submitted to the US Patent Office by the LSU AgCenter Office of Intellectual Property. Six refereed papers, two poster presentations, and one oral presentation featuring technology from the project were disseminated in 2011. The project has made strides in reclaiming heavy metals from CCA-treated wood. The process uses relative low temperature, short reaction time, and a relatively small amount of organic reagents. The technology is an effective and economically feasible technique for recycling of spent CCA treated wood. Current efforts are exploring the effect of particle size and other wood preservatives.			
Graduate Student Years: 1.0			
Outcomes/Impacts: The goal of this work is to develop an environmentally friendly and economically viable method for recycling decommissioned preservative treated wood. The wood preservation industry contributed over 4 billion dollars to the US economy. Moreover, the demand for CCA treated wood products has increased since the early 1970s, as a result of high demand of treated wood products for residential application such as decks and fences, and industrial products such as utility poles, timbers and marine pilings. Approximately 150 million pounds of CCA preservatives were used in the production of preservative-treated wood in 2010, enough wood to build 435,000 houses. About 28.8 million pounds of CCA was consumed by the US treating industry in 2004. Large volumes of this material will be coming out of service for decades to come. With an expected average service life between 20 to 40 years, the amount of spent CCA treated wood will expand greatly from current amounts of 3 to 4 million cubic meters per year to near 12 cubic meters per year in the US and Canada within the next 15 years. This project will continue to develop outputs that help maintain the long term viability of the US wood preservation industry.			
Publications: Hse, C.Y., T.F. Shupe, B. Yu, H. Pan, and Z. Zheng. 2011. Process for rapid microwave enhanced detoxification of CCA treated wood. US Patent 8043399. Du, T., T.F. Shupe, and C.Y. Hse. 2011. Antifungal activities of three supercritical fluid extracted cedar oils. Holzforschung 65 277 284. Sun, Q.N., C.Y. Hse, and T.F. Shupe. 2011. Characterization and performance of melamine enhanced urea formaldehyde resin for bonding southern pine particleboard. Journal of Applied Polymer Science. 119 3538 3543. Shupe, T.F., C. Piao, C. Lucas. 2011. The termiticidal Properties of superhydrophobic wood surfaces treated with ZnO nano rods. Eur J Wood Prod. DOI 10.1007/s00107-011-0563.			
Participants: T.F. Shupe (PI), LSU AgCenter.			
Target Audiences: wood preservation industry			

Nothing significant to report during this reporting period.

Approved (Signature)	Title	Date
		3/23/12