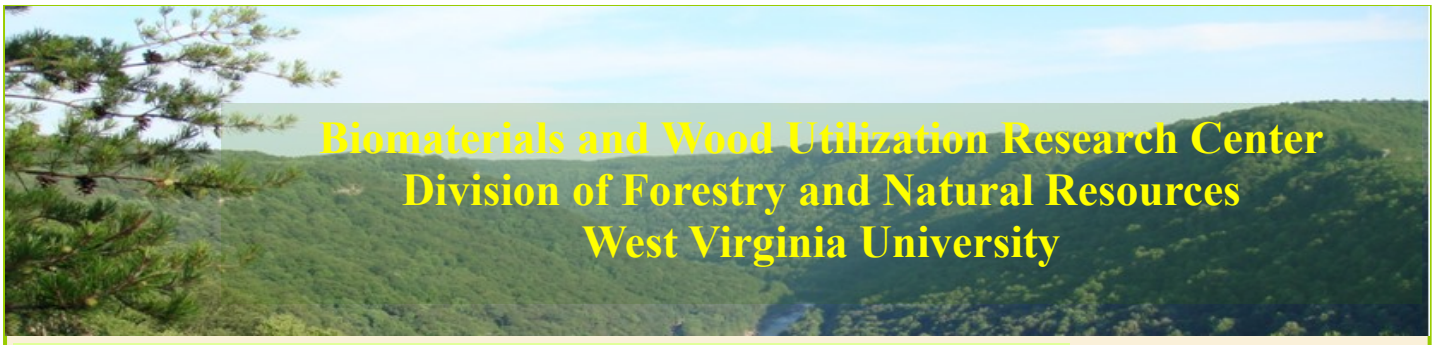
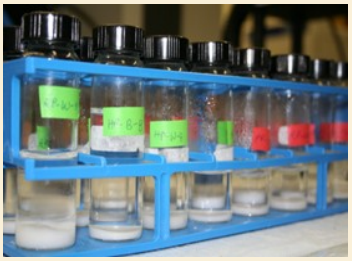


Biomaterials and Wood Utilization Research Center
Division of Forestry and Natural Resources
West Virginia University

***Biomass and Bioenergy*:** This Center focuses on efforts to identify bioenergy related economic opportunities in the state and provide scientifically proven methodologies and tools to convert woody biomass into biofuels and bioproducts through basic and applied research. The missions of the center are as follows: (1) create a multi-disciplinary research network with universities, state and federal agencies, and industries to facilitate research and pilot project demonstrations, (2) identify bio-based material resources and research needs to develop marketing strategies for biofuels and bioproducts, and (3) enhance biomaterial and bioenergy production technology transfer to promote economic and rural community development opportunities in West Virginia. Ongoing research activities include:

- Woody biomass utilization economics
- Coal/biomass to liquid fuels
- Pretreatment of cellulose biomass
- Biomass conversion to biofuels

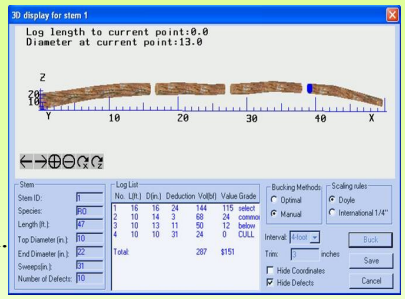


***Wood Utilization Research*:** The Center is fortunate to be one of the thirteen Wood Utilization Research Centers in the nation. Wood utilization research is an ongoing effort to produce high quality products from our forests and our wood residues. By continuing to explore new possibilities in wood and biomass utilization, West Virginia can remain on the forefront of a new economy fueled by bio-based materials and biofuels, and continue to manage our forests sustainably for the future. Following the national Wood Utilization Research Strategic Plan, the WVU Wood Utilization Research Program has planned to accomplish its objectives through the following actions:

- Assess the fundamental principles of Appalachian hardwoods to improve utilization and manufacturing efficiency,
- Explore research and development opportunities for utilizing low-quality, underutilized materials for value-added products and woody biomass for bioproducts or biofuels, and
- Enhance the global competitiveness of Appalachian hardwood industries through efficient use and marketing strategies.

For more information, please visit our websites at www.wdsc.caf.wvu.edu/BioMatCtr, www.wdsc.caf.wvu.edu/WVUWUR/, or contact Dr. Jingxin Wang at (304) 293 7601, jxwang@wvu.edu, Dr. Joseph McNeel at (304) 293 4412, jmcneel@wvu.edu

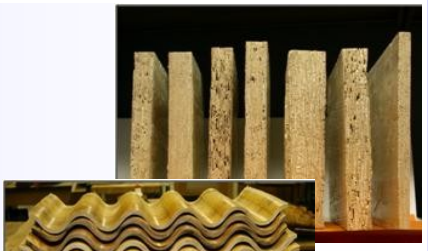
***Accomplishments*:** Over the last four years, the Program has used the Special Grant for Wood Utilization Research (WUR) to initiate 12 projects focused on developing new products and techniques that make better use of upland hardwoods in the Appalachian region. wide in terms of their potential impact, and

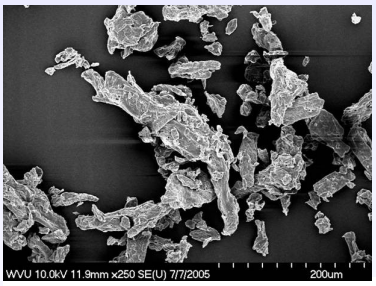


have involved industry representatives from across the state as cooperators. Research and extension activities through the WUR Program will help West Virginia forest product manufactures develop the extraction, production, manufacturing, and marketing breakthroughs needed to keep the Appalachian wood products industry globally competitive into the future. WUR research at West Virginia University has generated 14 publications, 5 graduate student theses, and 19 technical presentations. Three patents based on the research are in process. Technology transfer continued at a high level through seminars, workshops, on-site demonstrations, and industry collaborations. This WUR Special Grant has enabled WVU WUR researchers to leverage funding from other sources and enhance their intellectual capacity.

***Projects*:** Some examples of completed projects:

- Value recovery through merchandizing hardwood log products
- Increase use of low-quality wood in the upland hardwood region
- Oak logging residue in the upland hardwood region
- Dynamic business analysis model for woody biomass to biofuels
- Enhancement of commercial competitiveness: application of advanced technologies
- A regional log and lumber yield initiative
- Transforming veneer-mill residue into value-added composites





Some ongoing projects:

- Assessment of coal/biomass to liquid fuels
- Feasibility study for the development of an automated log to lumber tracking system for hardwood sawmills
- Hybrid structural wood composites engineered from underutilized hardwood species combined with reformulated waste materials
- From woody biomass to biofuels: a research demonstration project to promote wood residue utilization in West Virginia
- Design of a ground penetrating radar (GPR) based log scanning set up for improving the quality of wood products from saw mills
- New processes and products from lignocelluloses biomass: potential opportunities for economic

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Division of FORESTRY and NATURAL RESOURCES

WUR Wood Utilization Research Centers www.woodutilization.org

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