CEA TECH SERVICES FOR THE FOREST PRODUCTS INDUSTRY

Technology for the challenges facing the forest products industry:

CHALLENGES FOR THE FOREST PRODUCTS INDUSTRY

CEA Tech technology

- Biomass
- Materials
- Vision systems
- Characterization
- Sensor systems and integration
- Robotics and cobotics
- Thermal science
- Data analysis
- Software

Forestry
Monitoring and improvement of wood quality; sustainable forest resource management; planting/cutting management; disease detection; environmental testing; regulatory issues

Industrial processes
Energy efficiency; process control; occupational safety; modernizing production lines (maintenance, reliability of cutting tools, etc.)

Lumber quality
Monitoring and modelling of constraints and warping; using wood quality to determine best end-use; characterization; wood treatment; traceability

Logistics and storage
Management and tracking of stored wood; optimized drying, packaging, and traceability processes

NEW

New capabilities for innovative applications
Green chemistry; wood-to-energy (heat, gas, biofuels); new uses for environmentally-friendly forest products and byproducts; smart paper; fast assembly systems

CEA Tech can help the following businesses:

- Forest management organizations; logging and forestry companies

- Forestry, logging, and wood-processing equipment manufacturers

- Manufacturers in the wood, pulp and paper, furniture, lumber, wood-to-energy, biorefinery, and biofuel industries

Here are some of the ways CEA Tech can support your development:

CEA TECH KNOW-HOW

APPLICATIONS FOR THE FOREST PRODUCTS INDUSTRY

BIOMASS

Resource preparation (grinding, drying, torrefaction)	Optimizing energy consumption of grinding and drying processes; bio-coal; etc.
Gasification (fluidized-bed reactors; entrained-flow gasifiers)	Reactor sizing; process control and optimization; super-critical black-liquor gasification
Gas treatment and recycling	Treatment and purification for heat production, fuel synthesis, and natural gas synthesis; capture and filtration systems
Technical and financial feasibility studies	CapEx and OpEx estimates; ROI calculations

Materials	Improving the durability of cutting tools
Robotics and cobotics	Operations and handling assistance; solutions to reduce repetitive stress injuries
Sensor systems and integration	Traceability; environmental testing (water, soil); industrial control (process, quality, pollution); wood inventory tracking and management; structural deformation monitoring; controlling moisture content in wood
Characterization and non-destructive testing	Identifying the physical, chemical, and morphological properties of wood; detecting defects
Vision systems	Occupational safety; shape and color recognition for quality control applications
Construction	Performance assessments of various construction techniques; lifecycle analyses; optimization of wood-based building envelopes and insulation
HMI	Interactive furnishings and fixtures; lighting integrated into wood
Antennas and communicating systems	Information capture and transmission systems for forestry; production system monitoring
Energy efficiency	Energy optimization through waste heat recovery; integration of renewable energy into plants

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