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	 3.2. Effects of refrigerated air3.2.1. Preliminary considerations; 3.2.2. Tool wear; 3.2.3. Elemental analysis and tool microstructure; 3.2.4. Electrical current and power consumption; 3.2.5. Edge quality of MDF; 3.2.6. Conclusions; 3.3. Effects of cryogenic treatment and refrigerated air; 3.3.1. Preliminary Considerations; 3.3.2. Tool wear; 3.3.3. Elemental analysis and tool microstructure; 3.3.4. Current and power draw; 3.3.5. Sound level; 3.3.6. Edge quality of MDF; 3.3.7. Conclusions; 3.4. Acknowledgements; 3.5. Bibliography Chapter 4. Wearing Mechanisms Contributing to Reduced Tool Life after Wood and Secondary Wood Products Machining4.1. Introduction; 4.2. Cutting edge-material cut interface; 4.3. TGA indirect evidence of HTTR; 4.4. Theoretical QC analysis of HTTR; 4.5. Investigations of direct evidence of HTTR; 4.6. Cutting edge SEM image examinations; 4.7. Synergistic effect of high temperature reactions and mechanical wear; 4.8. Final remarks; 4.9. Conclusions; 4.10. Acknowledgements; 4.11. Bibliography; Chapter 5. Monitoring Surface Quality on Molding and Sawing Processes for Solid Wood and Wood Panels 5.1. Introduction5.2. General concepts; 5.2.1. Raw material: solid wood and panels; 5.2.2. The cutting process; 5.3.3. Cutting process; 5.3.1. Cutting forces; 5.3.2. Sound emission; 5.3.3. Cutting power; 5.4. Surface roughness and quality for solid wood and panels; 5.4.1. Surface roughness of Sanded Wood Surfaces; 6.1. Introduction; 6.1.1. Sanded surface quality and its evaluation; 6.1.2. Metrology of sanded wood surfaces and associated problems 6.2. Profile filtering applied to wood surfaces
Sommario/riassunto	Wood as an engineering material can be technically defined "as a hygroscopic, orthotropic, biological, and permeable material having extreme chemical diversity and physical complexity with structures, that vary extensively in their shape, size, properties and function". Therefore, using wood to its best advantage and most efficiency in engineering applications, specific characteristics or chemical, physical and mechanical properties must be considered. The products are divided into two classes, solid wood and composite wood products. Solid wood includes shipbuilding, bridges, flooring, mine