

# Research progress of microwave technology in wood drying

Abstract: [Microwave drying equipment](#) with its unique heating mechanism and characteristics provides a new way for wood rapid and efficient drying. In this paper, some important research progresses in wood microwave drying technology at home and abroad in recent years are reviewed, mainly focusing on the optimization of basic drying parameters such as microwave power, moisture content and temperature, and the application of advanced detection technology such as infrared camera technology. At the same time, it is pointed out that there is no systematic study on the basic theory of wood microwave drying, drying technology, wood structural characteristics and non-uniformity of microwave heating. It is suggested that basic theoretical research should be strengthened in the future and systematic research should be

combined with modern measurement and control technology.

Key words: wood drying; microwave technology; research;

In recent years, the demand for wood is increasing, but there are still many outstanding problems to be solved urgently in the conventional wood drying process. In this paper, due to the long drying time, energy consumption and serious pollution, the author has been unable to put forward some of his own views to meet the market demand. Therefore, people began to seek and study new wood drying technology.

Microwave technology originated in the 1930s and became a research hotspot all over the world because of the discovery of the principle and characteristics of wood emblem drying and its thermal effect. Then in the 1960s and 1970s, wood with certain moisture content was placed in

the microwave electric field. Many countries began to apply this technology to wood dry magnetic field, microwave and wood. Electromagnetic drying caused by the interaction of water and water in wood provides a new way for the rapid and high energy consumption of wood to be converted into heat energy and the overall heating of wood drying.

In recent years, in the process of [wood microwave drying](#), the absorption of microwave drying technology to the basic drying characteristics, drying technology and detection technology has been gradually reduced from inside to outside due to the high and low moisture content of wood inside and outside. As a result, some important progress has been made in the research of the same temperature trapezoidal surface, but the excessive water content in the applied research has been achieved. Rate gradient, in addition, higher vapor pressure accelerates the rapid diffusion of moisture from the wood interior to the outside and evaporates from the surface. This heating method forms a unique mechanism of wood microwave drying, and therefore has advantages over conventional drying, namely, fast drying speed, good drying quality, high utilization rate of wood, environmental safety and killing. Bacteria ability and so on