

## USE OF ELECTROMAGNETIC ENERGY FOR DRYING OF WOOL

A. Smej

Scientific advisor – Dr. Techn. Sc., Prof. A. Cherenkov  
Kharkiv Vasylenko National Technical University of Agriculture  
(Department of Biomedical Engineering and Theoretical Electrical Engineering,  
19, Rizdvyana street, Kharkiv, 61052, tel. (057) 712-42-32)  
E-mail: [tte\\_nniekt@ukr.net](mailto:tte_nniekt@ukr.net)

The technical level of the equipment installed in the factories for the primary processing of wool (PPW) does not meet modern requirements, and machine building in Ukraine does not produce machinery and equipment for this industry. In Russia, Poland, Belgium and other countries that are the main suppliers of equipment for factories for the primary processing of wool, the scientific and technical potential is focused mainly on the creation of equipment for traditional technologies that distinguish them.

Considering the physicochemical properties of wool, we can assume that in the field of primary processing of wool, reducing the cost of production and obtaining high profits is possible only on the basis of new technologies and equipment using elastic vibrations and electromagnetic fields.

The new technological concept of the primary processing of wool is based on a conclusion on the information and energy effect of physical fields of electromagnetic and acoustic nature on the physicochemical properties of wool, its contamination, grease and washed water.

The use of energy of extremely high frequency (EHF) electromagnetic field (EMF) for drying washed wool and processing dirty is associated with unique features of microwave energy.

The washing efficiency, the quantity and quality of wool fat, the strength properties of the wool, the repeated use of washing water depend on the choice of frequency, power value and exposure of the electromagnetic field.

The development and implementation of a fundamentally new technology and equipment for the primary processing of wool will significantly reduce the cost of washing and drying 1 kg of wool and ensure the competitiveness of wool fiber products in the domestic and world markets.

However, the use of microwave energy for drying and processing wool is associated with significant difficulties of both a theoretical and a constructive nature and requires a concentration of high scientific potential and specialized production.