The thermal nondestructive testing (TNDT) method is widely used for inspection of industrial parts and components. The method involves heating the object and subsequently measuring the temperature of its surface. This change in temperature provides information about the test object's structure. The surface temperature changes if the discontinuity exists inside the object. The laboratory training allows students to understand the fundamental processes, which take place during the TNDT procedure. Students are able to simulate this procedure use FEMLAB software package. This interactive software package is based on application of partial differential equations for simulation of scientific and technical problems related to TNDT. Applied modes of this software allow the development of models with desired properties of a test object and heat flow. FEMLAB package generates the system of partial differential equations, which represent a complete model of TNDT processes. The finite element analysis method is used for solving partial differential equations.

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