Miroshnichenko I.P.

Scientific and Methodological Apparatus and Software for Modeling Processes of Diagnosing the State of Layered Composite Materials

Abstract: A new scientific and methodological apparatus and software have been proposed for modeling the processes of diagnosing the state of isotropic and transversely isotropic materials in plane-layered, layered cylindrical and layered elliptical structures using the acoustic active methods of non-destructive testing.

Nowadays, this scientific and methodological apparatus is already being successfully applied to creation of the future- oriented structures made of the new types of composite materials in mechanical and aircraft engineering.

The above described software is protected by the certificates of state registration of computer software and is intended to be used as a part of both stationary and mobile diagnostic stations in instrument engineering, mechanical engineering, shipbuilding, aircraft engineering, the fuel and energy complex, etc.

The results obtained are most appropriate for creating the future-oriented structures from the new types of composite materials, quality control of their manufacture and diagnosing the state of material at various stages of the life cycle.