# NEW DEVICES AND MEANS FOR NONDESTRUCTIVE TESTING OF MATERIALS AND DIAGNOSTICS OF FACILITIES ARE OPERATING IN INDUSTRY

GEORGI VELEV*, ASPARUH MARKOVSKI**, ANDREI ANDREEV**, BORIS VELEV**
* INSTITUTE OF MECHANICS – BAS, SOFIA, BULGARIA
** "UNITEST 07" LTD, SOFIA, BULGARIA

We presented development of modern modular devices for automated non-destructive control and diagnostics of structural condition, composition and physico-mechanical properties of materials and equipment in laboratory and production conditions. They can be used alone or in integrated system for nondestructive control, which is based on the integrated use of several physical methods (magnetic, acoustic, electric, etc..), Each of these methods can be used alone. Are presented and devices - test clip, rechargeable semiconductor ultraviolet light and ultrasonic transducers for precision and non-destructive fluorescent corrosion control, structural cracks and surface condition of existing facilities in the energy, construction and engineering. Modular devices for integrated magneto-noise, magneto-acoustic and ultrasonic nondestructive control "Multitest-MS04 and SD05-Multitest" and CD100 testing pliers are approbated for nondestructive quality control of heat treatment (hardness) of details and examples from a wide range of steel - 40X, 20x .. degree of tensile strength and hardness responsible for cast iron and quality of caking of products powder metallurgy. Studies were conducted of the extent of corrosion in equipment operating under pressure (pipes, boilers, receivers, etc..), The existence and development of surface defects (cracks) in the blades of turbines operating as through nondestructive ultrasonic and fluorescent control was assessed residual resource facilities. There have been studies and conclusions about the applicability of the chosen instrument for a comprehensive non-destructive control of the properties of steel, cast iron, sintered and composite materials, and diagnostic facilities in the acting industry.