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UTILIZATION OF AFM MAPPING OF SURFACE'S MECHANICAL PROPERTIES IN DIAGNOSTICS OF THE MATERIALS FOR ELECTROTECHNICS

ABSTRACT *Atomic force microscopy (AFM) is one of the most powerful diagnostic methods used in micro- and nanoscale imaging of the topography and various physical properties of the surface. As this method involves the scanning tip/sample interaction, it is possible to observe the response of the surface on periodically changing load causing by the scanning tip. By utilizing so called time-resolved tapping mode, we could perform the mapping of the surface's mechanical properties: stiffness, adhesion, energy dissipation and others. In this paper we present the idea of the NanoSwing imaging technique developed at Electrotechnical Institute, Division of Electrotechnology and Materials Science in Wrocław as well as the examples of the measurement results.*

Keywords: *atomic force microscopy, time-resolved tapping mode, mechanical properties mapping, nanomaterials, material science.*