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Advanced integrated solutions based on atomic-force microscopy

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Atomic force microscopy (AFM) with modern techniques and combination with advanced optical methods continue to be one of the most powerful tools for advanced materials analysis at nano-scale. The NT-MDT Group (NT-MDT BV – The Netherlands; NT-MDT LLC and MTEON LLC – Russian Federation) produce Atomic-Force Microscopes and AFM based multi-method tools which are used to obtain comprehensive information about sample surface characteristics including topography, rigidity, adhesion forces mapping, spreading resistance, surface potential, magnetic domain structure etc.

New generation of digital AFM controller	Implementation of all existing and perspective AFM techniques Improved fast scanning algorithms Raster Nanomechanics Analysis (RNMA mode) Direct access to more than 12 AFM signals (with no additional hardware)
Full automation of AFM head alignment	Automation measurement processes for routine research Possibility to adjust measuring head via software (including operation in vacuum)
New generation of AFM optical head	Outstanding level of AFM and optical methods combination in all new design with possibility of high efficiency laser illumination in “side”, “bottom” and “top” scheme.
Powerful Raman spectrometer	Spectrometer with automated switch between up to 5 lasers and cover whole optical range from UV to near IR Fast laser scanning using galvano-mirrors Coherent spectroscopy of combination anti-Stokes light scattering (CARS)
High resolution magneto-optical microscopy	Novel design of Si aperture probe helps to achieve efficient illumination, focusing. Light collection with possibility of independed detecting XY polarization direction
LTEM	Combination of AFM and laser terahertz emission microscopy

The team has more than 20 years’ experience in the development and production of atomic force microscopes. The NT-MDT group provide maintenance, service support and upgrade of all AFM based devices which were produced under the NT-MDT brand name - installed in Russia and world-wide.