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Nota di contenuto	Part I Nanomaterials -- 1. Spin Control in Quantum Dots for Quantum Information -- 2. The Mixed State of Thin Films in Parallel Fields -- 3. Graphene: Beyond the Massless Dirac's Fermion Approach -- 4. Magnetic Resonance Study of Nickel and Nitrogen Co-Modified Titanium Dioxide Nano composites -- 5. Investigation of Dependency of Microstructure Quality on Vibration Mode -- 6. On the Energy Spectrum of Two-Electron Quantum Dot in External Magnetic Field -- 7. Radiation Technologies of Polymer Composites Properties Modification -- 8. Energy Current and Energy Fluctuations in Driven Quantum Wires -- 9. Magnetic Properties of Fe2O3/ZnO Nano composites -- 10. Low-Frequency Quantum Oscillations due to Strong Electron Correlations -- 11. The Heat Capacity of Nano tube Bundles with 1D Chains of Gas Adsorbates -- 12. Nano scale Aspects of Phase

Transitions in Copper Based Shape Memory Alloys -- Part II Nano sensors -- 13. Highly Selective and Sensitive Biochemical Detector -- 14. On Question of Possibilities of NMR in Weak Magnetic Fields for Detection of Illicit Liquids -- 15. Screening of Liquids with Quasioptical High-Tc Josephson Detectors -- 16. Multi analytes Gas Sensors by Soft Lithography Induced Gratings with Sol-Gel and Copolymers Nano composites -- 17. Applicability of Time-Averaged Holography for Reliability Assessment of Chemical Sensors -- 18. Metal-Insulator Transition Mechanism and Sensors Using Mott Insulator VO2 -- 19. Nano ecological Security of Foodstuffs and Human -- 20. Nano sensors in Systems of Ecological Security -- 21. Smart Polymers as Basic for Bio-, Chemical and Physical Sensors -- 22. Mechanism of Influence of Aminoacid Adsorption on Photoluminescence of Nanoporous Silicon -- 23. Transmission of Measuring Signals and Power Supply of Remote Sensors.

Sommario/riassunto

The topics discussed at the NATO Advanced Research Workshop "Nanotechnology in the Security Systems" included nanophysics, nanotechnology, nanomaterials, sensors, biosensors security systems, explosive detection . There have been many significant advances in the past two years and some entirely new directions of research are just opening up. Recent advances in nanoscience have demonstrated that fundamentally new physical phenomena are found when systems are reduced in size with dimensions, comparable to the fundamental microscopic length scales of the investigated material. Recent developments in nanotechnology and measurement techniques now allow experimental investigation of transport properties of nanodevices. This work will be of interest to researchers working in spintronics, molecular electronics and quantum information processing.