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Nota di contenuto	Diagnostic studies of YBa2Cu3O7?? laser ablation -- Pulsed laser deposition of high temperature superconducting thin films and hetero- structure -- In-Situ monitoring of laser ablation of superconductors -- Spectroscopic and ion probe characterization of laser produced plasmas used for thin film growth -- Synthesis of SiO2 thin films by reactive excimer laser ablation -- Characteristics of laser—material interactions monitored by inductively coupled plasma—atomic emission spectroscopy -- Trace surface analysis using ion and photon desorption with resonance ionization detection -- Pulse rate dependence of laser desorption and ionization of molecules on thin metal films: Mathematics of laser heating and pulse rate dependence -- Photodesorption of metal atoms by collective electron excitation -- Desorption of Al, Au, and Ag using surface plasmon excitation -- Threshold fluence UV laser excitation of W(100) and O2,H2,F/W(100): Photoejected ion KE distributions -- Excimer laser ablation of CdTe -- IR-laser ablation in medicine: Mechanisms and applications -- Pulsed laser ablation of biological tissue: Review of the mechanisms -- Etching

polymer films with continuous wave ultraviolet lasers — The photokinetic effect -- Mechanistic insight in the laser-pulse sputtering of polymers by combined photography and gas-dynamic analysis -- Laser desorption and multiphoton ionization of some smaller biomolecules: Recent results and prospects -- Matrix-assisted laser desorption and ionization of biomolecules -- Laser ablation of intact massive biomolecules -- Applications of matrix-assisted laser desorption fourier transform mass spectrometry for biomolecules -- Comparison of atomization processes: Trace element analysis using Ris of laserirradiated and ion-bombarded biological and metal surfaces -- Laser desorption of peptide molecules and ions using 193 nm radiation -- Ablation of material by front surface spallation -- Laser ablation and optical surface damage -- Laser induced photodissociation, desorption and surface reaction dynamics -- Mechanisms of laser ablation of monolayers as determined by laser-induced fluorescence measurements -- Laser-induced particle emission from surfaces of non-metallic solids: A search for primary processes of laser ablation -- Charged particle emission by laser irradiated surfaces -- Laser ejection of Ag<sup>+</sup> ions from a roughened silver surface: Role of the surface plasmon -- A surface plasmon model for laser ablation of Ag<sup>+</sup> ions from a roughened Ag surface -- UV laser ablation from ionic solids -- Physics of pulsed laser ablation at 248 nm: Plasma energetics and Lorentz interactions -- Excimer laser ablation of ferrite ceramics -- Charge emission from silicon and germanium surfaces irradiated with KRF excimer laser pulses -- Pulsed laser deposition of tribological materials -- Ion-molecule reactions of carbon cluster anions -- Doubly charged negative ions of bucky ball — C<sub>60</sub><sup>2-</sup> -- Evaporation as a diagnostic test for hydrodynamic cooling of laser-ablated clusters -- Desorption of large organic molecules by laser-induced plasmon excitation -- Simultaneous bombardment of wide bandgap materials with UV excimer irradiation and keV electrons -- Superconducting transport properties and surface microstructure for YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-?</sub>-based superlattices grown by pulsed laser deposition -- Monitoring Laser Heating of Materials with photothermal Deflection Techniques -- Studies of laser ablation of graphite: C<sub>n</sub><sup>+/?</sup> Ion Kinetic energy distributions -- Infrared laser induced ablation and melting in model polymer crystals -- Chemical characterization of microparticles by laser ablation in an ion trap mass spectrometer -- Photophysical processes in uv laser photodecomposition of Bi<sub>2</sub>Sr<sub>2</sub>Ca<sub>1</sub>CU<sub>2</sub>O<sub>8</sub> and YBa<sub>2</sub>Cu<sub>3</sub>O<sub>x+6</sub> -- Influence of liquefaction on laser ablation: drilling depth and target recoil.

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### Sommario/riassunto

Lasers can readily remove very thin layers from small areas of a material and can thus be used both to control the structure of the surface and to determine its composition. Laser ablation thus has a wide variety of applications - from re-shaping the cornea of the eye to correct vision and micro-machining electronic devices, to detection of minute contaminants on catalysts. This book is the proceedings of one of the first workshops held on this topic.

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