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Nota di contenuto	Advancing X-Ray Lasers and Intense X-Ray Generation with Ultrashort-Pulse, High-Power Lasers -- Advanced Analytical Technologies for a Terawatt Laser Facility -- Laboratory Based Sources, Optics and Detectors for Ultrafast Soft X-Ray Spectroscopy in the Water Window and at Transition Metal L-edges -- To the Centenary of the Nobel Prize Winner's Birth: N.G. Basov as a Scientist and a Leader -- The University Compton Source: Concept and Application -- Model of a Femtosecond X-Ray Laser at 32.8 nm and 44.4 nm in Ni-like Krypton -- Ionization Energies of Ni-like Ions: Applications to X-Ray Laser Modeling II -- Diamond Based X-Ray lens Theory and Processing Technology -- Energy Resolved X-Ray Ghost Imaging with Different Materials -- Divergence Angle Consideration in Energy Spread Measurement for

High-Quality Relativistic Electron Beam in LWFA -- Generalized Variation Minimization Based Algorithm for Image Reconstruction from Few-views of Limited Angular in Computed Tomography -- Light Field Manipulation and Applications of Capillary Discharge Extreme Ultraviolet Laser -- Development of High Efficiency and High Precision X-Ray Reflective Optics for Advanced Light Sources at IPOE -- Review of Laser Plasma Accelerated Ultra-intense Electron Beam for Nuclear Applications -- Analytical Study of X-Ray Talbot Interferometry on Over-dense Plasma -- Dual-beam Experiment Platform for All-optical Thomson/ Compton Scattering at SJTU.

Sommario/riassunto

These proceedings present a selection of invited and contributed papers presented during the 18th International Conference on X-Ray Lasers (the 18th ICXRL), held in Shanghai, China, from 17 to 21 July 2023. The conference is part of an ongoing series dedicated to recent developments in the science and technology of X-ray lasers and other coherent X-ray sources, with an additional focus on supporting technologies, instrumentation and applications. The book highlights advances in a wide range of fields including laser and discharge-pumped plasma X-ray lasers, the injection and seeding of X-ray amplifiers, high-order harmonic generation and ultrafast phenomena, X-ray free electron lasers, X-ray and gamma-ray generation, X-ray ghost imaging, optics and metrology, X-rays and -rays for fundamental science, the practical implementation of X-ray lasers, XFELs and super-intense lasers, and the applications and industrial uses of X-ray lasers.
