

ABSTRACTS OF PUBLISHED PAPERS

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OPTICS AND RADIATION

Applications of Laser Plasma X-ray Source

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A laser-produced plasma x-ray source (LPX) is expected to develop new x-ray applications. Studies on reduction of debris from LPX, applications of LPX to x-ray microscopy of living cells, and x-ray photoelectron spectroscopy are described. Future applications to reduction lithography, x-ray interference measurements, and production of novel materials are discussed.

results obtained so far are presented and advantages of our method and future prospects are discussed.

Photoelectron Micro-Spectroscopy with a Laser-Plasma X-ray Source

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A photoelectron micro-spectroscopy system with a laser-plasma x-ray source is being developed to realize a sub-micron spatial resolution in an in-house system. Although a laser-plasma source has a ultra-high peak brilliance, time-averaged power is relatively low because its emitting duration is very short and the duty factor is low even at a high-rep rate operation. However, two spectroscopical ideas in our system are making the "source brilliance limited" spatial resolution of the system very high. One idea is use of a filter to select a single line from the x-ray source, and the other is the time-of-flight method for the electron energy analysis. Experimental