

Accelerator Based EUV Sources

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Generally, accelerator based radiation sources are well suited for generation of short-wavelength small-bandwidth radiation of high intensity. Providing extremely stable and reproducible radiation, they have already been utilized in a wide range of scientific applications in the fields of VUV and Soft-X-ray imaging and diffraction as well as non-linear optical phenomena. Furthermore due to their capability to provide radiation with extremely high power, free-electron lasers among the accelerator based sources, have received a considerable attention lately. They are viewed as promising candidates for the next generation EUV lithography sources in industry application. Besides the special requirements imposed by driving an industrial lithography tool also the needs of the next generation scientific imaging experiments, or future metrology applications with highest spatial and temporal resolution set challenging demands on accelerator design. The talk identifies the main challenges for the future accelerator based EUV sources and discusses possible countermeasures and mitigation strategies.