

The Potential of X-ray Free-electron Lasers Based on Superconducting Linear Accelerators

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Based on the parameter list of the x-ray free-electron laser (FEL) planned for the TESLA project at DESY, the potential for such facilities to provide coherent radiation with wavelengths down to 1 Å for biology and biophysics will be presented, emphasizing brilliance and time structure. At present, a VUV FEL based on the same SASE principle and the same technology is under construction at DESY, which will offer new opportunities in spectroscopy and imaging.