

Is the High Gain FEL the 4th Generation Light-Source?*, C. PELLEGRINI, UCLA - The theoretical and experimental advances in high gain SASE FELs, has made possible to design X-ray FELs in the wavelength region of a few to 0.1 nm, with diffraction limited radiation, subpicosecond pulse length, peak and average brightness exceeding that of existing synchrotron radiation sources by 10 and 2-5 orders of magnitude respectively. These characteristics are unique to the X-ray FELs, and define a "4th Generation Light-Source". We will review the present status of the physics and technology of FELs, and the existing X-ray FEL projects.

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