

VISIONS OF SCIENCE WITH THE BESSY FEL

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BESSY recently proposed the construction of a SASE-type Free Electron Laser (FEL) as a revolutionary new source for the spectral range covering VUV radiation to soft x-rays (20 eV to 1 keV). This new source promises fs pulses which have orders of magnitude higher output power as compared to present day VUV and soft x-ray synchrotron sources. Seeding of the FEL permits a substantial reduction of the pulse length reaching values down to 20 fs or below. This SASE-FEL is expected to provide a foundation of a completely new field of scientific research as will be described in this talk through selected examples.