

# The VUV-FEL at DESY: Status, Results and Perspectives

*T. Möller*

Hamburger Synchrotronstrahlungslabor HASYLAB am Deutschen Elektronen-Synchrotron  
DESY, Notkestr. 85, 22603 Hamburg, Germany

Free Electron Lasers (FEL) based on self-amplification of spontaneous emission (SASE) are radiation sources which can combine the unique characteristics of lasers (high peak brilliance, coherence and short pulse length) and synchrotron radiation (e.g. short wavelength, tunability). The VUV-FEL<sup>1,2</sup> at DESY<sup>3</sup> presently operates between 95 and 110 nm. Very recently so-called saturation has been achieved.<sup>4</sup> The talk will give an overview of the present status and will report on first experiments on solids and clusters making use of extremely intense VUV-radiation from the FEL. In addition, the development of a user facility for the wavelength range 6- 60 nm will be addressed.

<sup>1</sup> J. Rossbach, *Nucl. Instr. Meth. A* **375**, 269-273 (1996).

<sup>2</sup> J. Feldhaus and B. Sonntag, *Synchr. Rad. News* **11**, 14-21 (1998).

<sup>3</sup> J. Andruszkow et al, *Phys. Rev. Lett.* **85**, 3825-3828 (2000).

<sup>4</sup> J. Rossbach et al, to be published.