

OPTICAL SPECTROSCOPY OF LUMINESCENT MATERIALS USING SYNCHROTRON RADIATION

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Luminescent materials emitting light in the visible and UV region are used in a wide range of technical applications, such as radiation detectors for industrial and medical use, plasma TVs, fluorescence lamps, lasers and many others. The materials are usually characterized by a large band gap, requiring a wide range of excitation energies in the UV, VUV and XUV range to study the different excitation, luminescence, and energy transfer mechanisms.

Focusing on the Superlumi experiment at the DORIS storage ring of HASYLAB in Hamburg, experimental techniques related to UV and VUV spectroscopy are discussed [1,2]. Some highlights on the research of energy transfer mechanisms in wide band gap materials using synchrotron and FEL excitation will be presented as well.

References

- [1] G. Zimmerer, Nucl. Instr. Methods. in Phys. Res. A 219 (1991) 178.
- [2] G. Zimmerer, Radiation Measurements 42 (2007) 859.

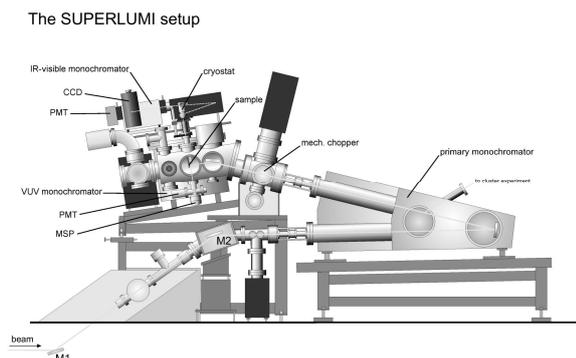


Fig.1 The Superlumi setup at the DORIS storage ring in Hamburg, Germany.