

## A comparative Study of VUV Phosphors for Plasma Display Panels and Xe Discharge Lamps

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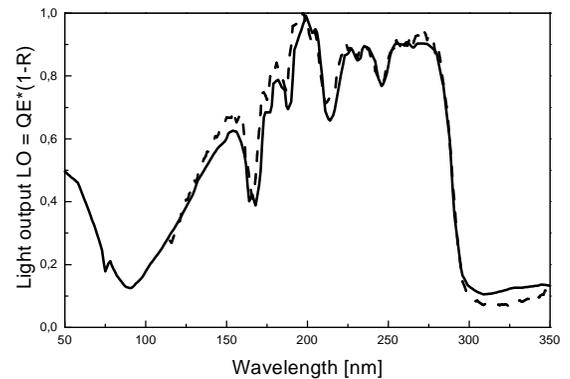
Plasma display panels (PDPs) and Xe discharge lamps require phosphors with a high quantum efficiency and light output under vacuum ultraviolet (VUV) excitation. Most of the presently applied luminescent materials were selected on the basis of excitation spectra in the VUV range, which were measured in a relative way [1,2]. The determination of spectrally resolved quantum efficiencies were performed only for few materials [3,4].

We have recorded the spectrally resolved quantum efficiencies, reflection, and light output data of commercially relevant phosphors in the VUV range by using a commercial spectro-fluorimeter extended by a VUV excitation branch [5]. The obtained results are in good agreement with those from synchrotron measurements (fig. 1).

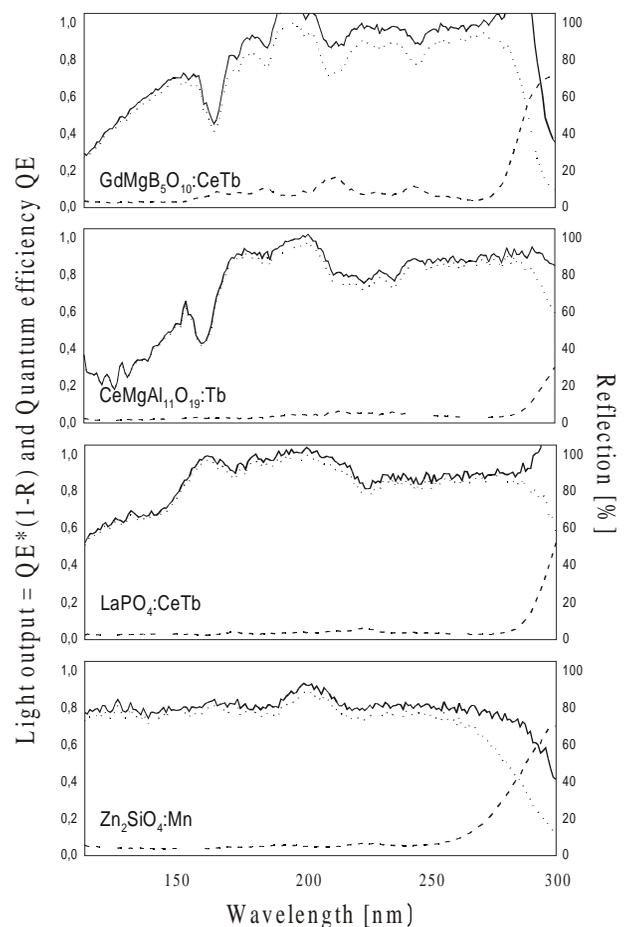
The gained results (fig. 2) will be discussed in terms of the potential of these materials for the application in PDPs and Xe discharge lamps.

### References

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**Fig. 1:** Light output spectrum of  $\text{GdMgB}_5\text{O}_{10}:\text{CeTb}$  recorded by a synchrotron (solid line) and by a VUV spectrometer (dashed line).



**Fig. 2:** Reflection spectra (dashed line), spectral light output LO (dotted line), and quantum efficiency QE (solid line) of green-emitting VUV phosphors.