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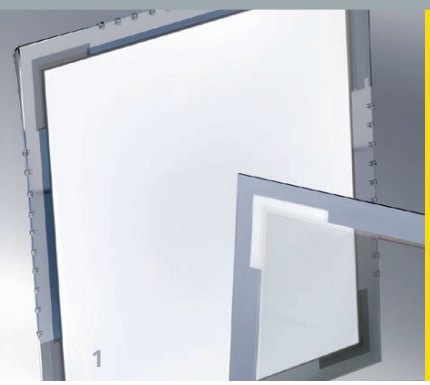

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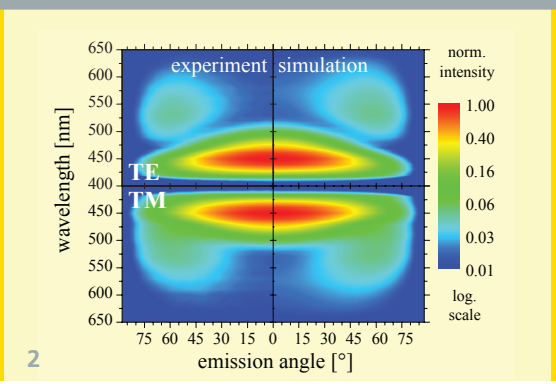

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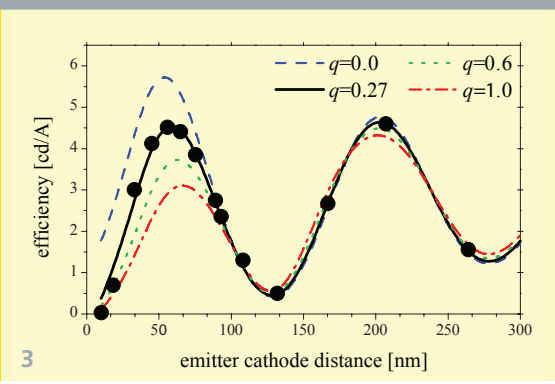

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1 *Transparent, white OLED (OSRAM Opto Semiconductors).*
2 *Measured and simulated emission pattern of a blue OLED.*
3 *Thickness dependent efficiencies of a blue emitting OLED series.*

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OPTICAL CHARACTERIZATION AND OPTIMIZATION OF OLEDS

Optics of Organic LEDs

The quantitative optical description and general technical optimization of the upcoming, commercial light source Organic LED require a profound knowledge of the active & passive optical properties of the system „OLED".

Optical Characterization

- Model free determination of thin film material dispersions n(λ)+ik(λ)
- Measurement of layer thicknesses inside final OLED stacks
- Measurement of polarized, angular & spectrally resolved emission pattern in air and substrate glass, respectively
- Detailed optical modelling using in-house software („Radiating Slabs")
- Conclusion to properties of electrically pumped OLED emitting material

Emitter Properties

OLEDs comprising an adapted thin film stack (e.g. emitter – cathode – distance) enable to determine

- internal electroluminescence spectrum,
- emitter orientation distribution,
- profile of the emission zone, and
- quantum efficiency of excited state luminescence

by far-field radiation pattern measurement in conventional, electrically pumped operation and subsequent optical analysis.

References

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