

MULTI-DIMENSION SIMULATOR for OLED with Real Manufacturing Process Implemented

Designing the Optimal Device from Multivariable Thickness Analysis

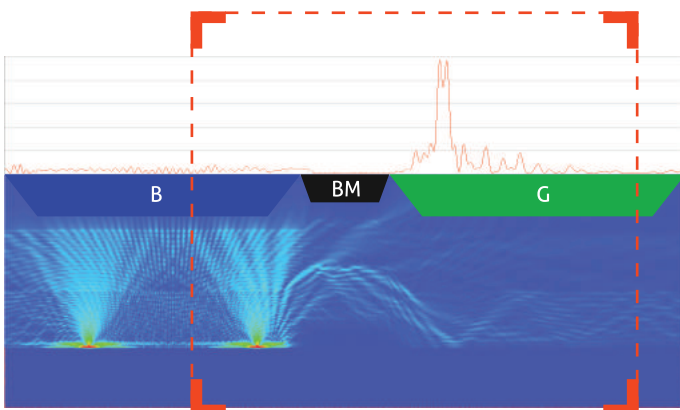
In designing a OLED, the thicknesses of layers of materials take up important factor for light efficiency. So the impact simulation of the relationship between the thickness and the light efficiency has been always an important part of the OLED designing process.

Previously, the prediction process has taken a wasteful bundle of time with tedious calculation and repeated labors.

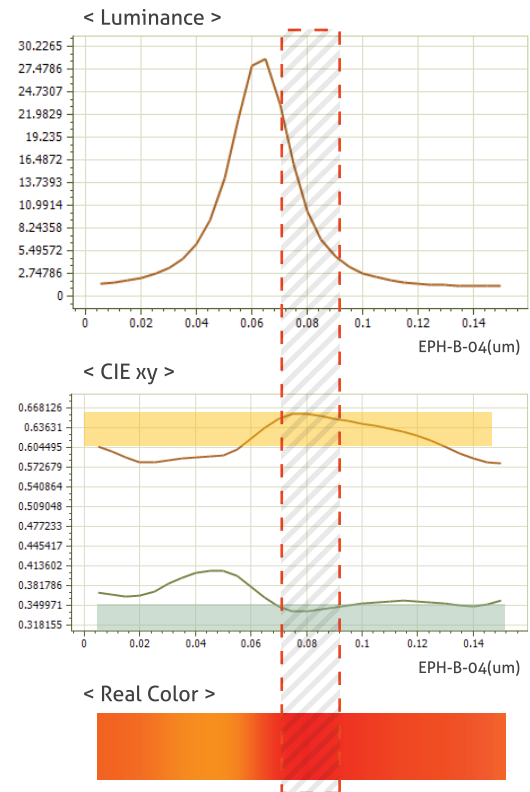
Expert OLED shortens the repeated and tedious process into just one simulation to show how changes variation of thickness of each layers.

Light Leakage Prediction & Analysis Solution

In WOLED, the light leakage between pixels is serious problem. ExpertOLED shows light propagation path internally and calculates the amount of power of light leakage. With these information, user can find the optimized design for solving this failure.

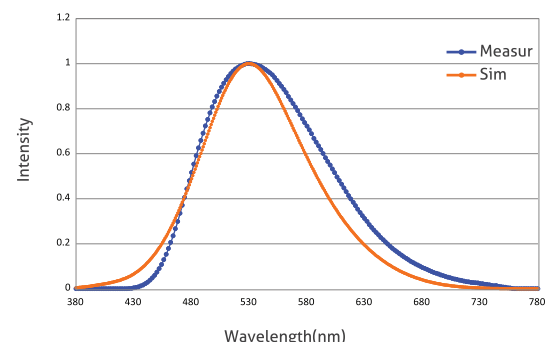


Blue to Green



Electro Luminescence

Estimating the emitting power, current profile, electron and hole concentration, and band bending according to applying current or voltage to OLED device.



Spectrum

WORK PROCESS

STRUCTURE

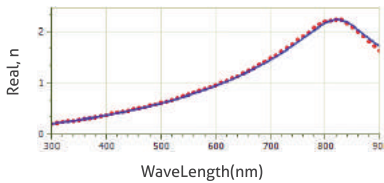


MATERIAL

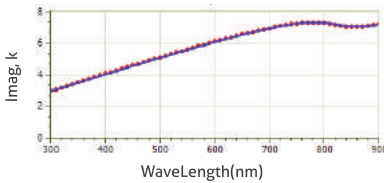


Fitting

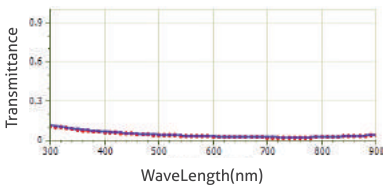
For reducing run time and increase accuracy, a Drude-Lorentz Model in Engine is applied. Users can get accurate result fast.



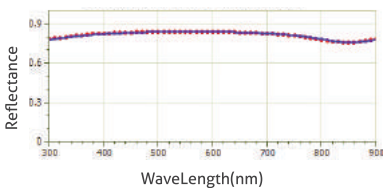
n Graph



k Graph



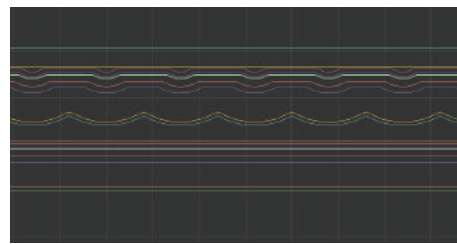
Compare NK vs MPE Transmittance



Compare NK vs MPE Reflectance

Flexible structure generation

Intuitive drawing of various patterns such as lens, grating or diffusion film.



Structure Editor

Easy structure generation based on an actual manufacturing process.

An easy structure generation with the user-friendly interface emulating a real process.



Grating



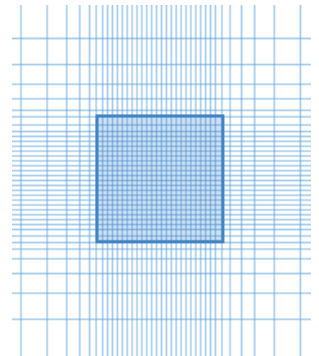
Leakage

MESH



Adaptive grid generator

The adaptive grid in specific region with the big physical parameter reduces run time and memory.



Mesh

OPTIC SOLVER



VIEWER



Realization of White OLED simulation

User can design WOLED with tandem structure and Color Filter. With these functions, user can do color analysis easily about WOLED.

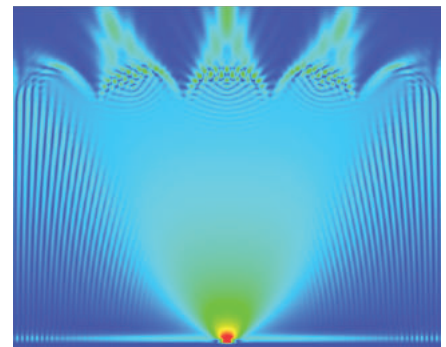
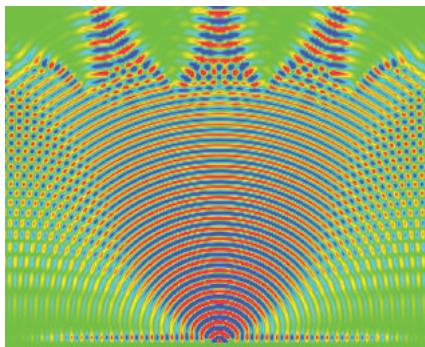
FDTD & Ray Tracing

For panel simulation, the micro and macro optic are necessary in OLED simulation together. To cover the macro optic instead of FDTD, the ray tracing function is added. With mixing Ray Tracing to FDTD, the panel style simulation is possible.

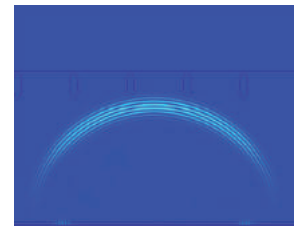
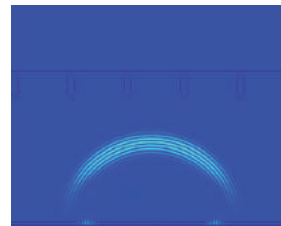
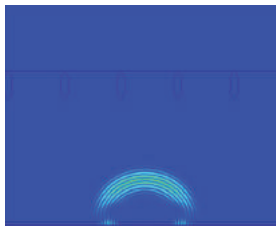
Absorption

The power that is absorbed or confined in each layer is estimated.

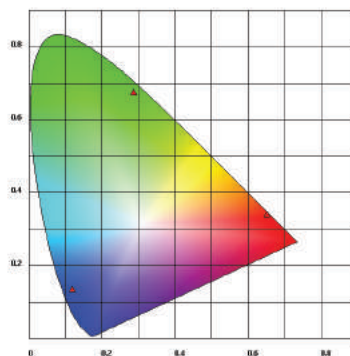
Various outputs and analysis tools are available in Viewer.



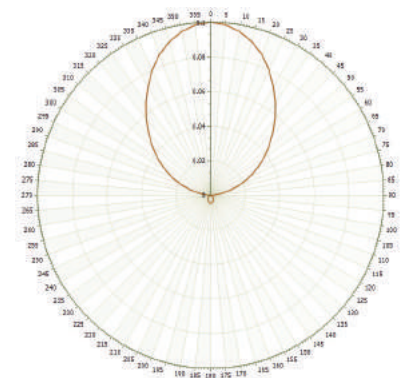
Wave Form, Amplitude



Movie



CIE

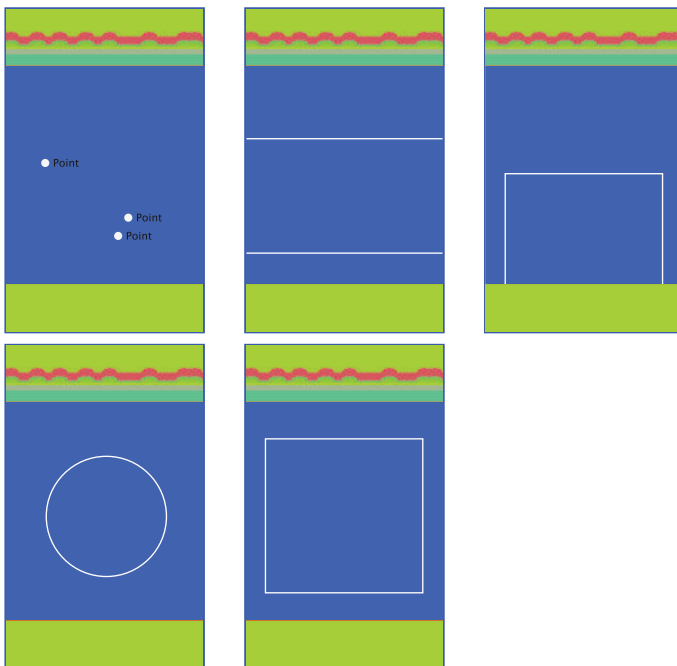


Polar

Our solution analyzes the optic and electric characteristics of OLED. Competitive speed, high accuracy, and controlling big memory are possible in desktop environment.

Various Detector

Providing the various shape of detectors such as point, line, cup, circle and square. User can measure the power of light at any location in the design.



Point, Line, Cap, Cir, Square

Parallell Process

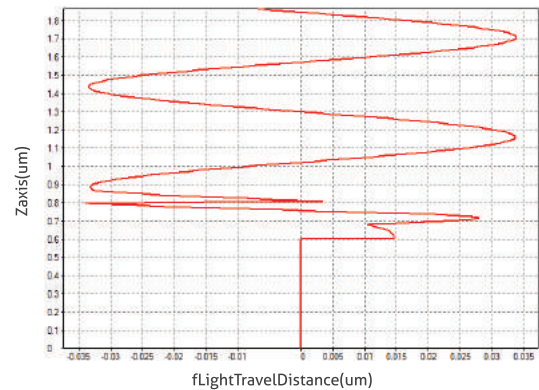
Parallel Process increases the speed of a simulation. In this mode, user can control the number of CPU.

Several Boundary Condition

For matching simulation to real situation, the more effective boundary condition is provided such as PML, PBC, ABC, and SBC.

EOLED 1D

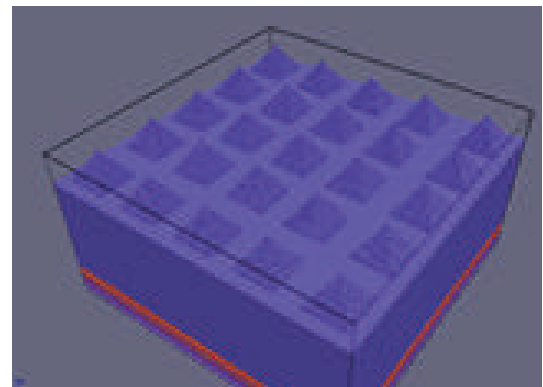
User-Friendly interface, Quick simulation, and various outputs are available.



Hx

EOLED 3D

Our virtualization of various patterns in CAD reproduces the actual panels in Desktop environment.



3D View

Contact Us

TEL : +82-70-8707-2500
 FAX : +82-31-889-3455
 E-mail : display@daouincube.com
 URL : www.daouincube.com
 Address : 2F, Daou Digital Square, Digital Valley-ro, Suji-gu,
 Yongin-si, Gyeonggi-do, Korea 448-547

Specification

PLATFORM : IBM – Compatible
 PCS : Windows 7
 CPU : 4.0GHZ or Better
 MEMORY : Minimum 2GB Recommended 4GB
 or Better
 GRAPHIC CARD : OpenGL supported