

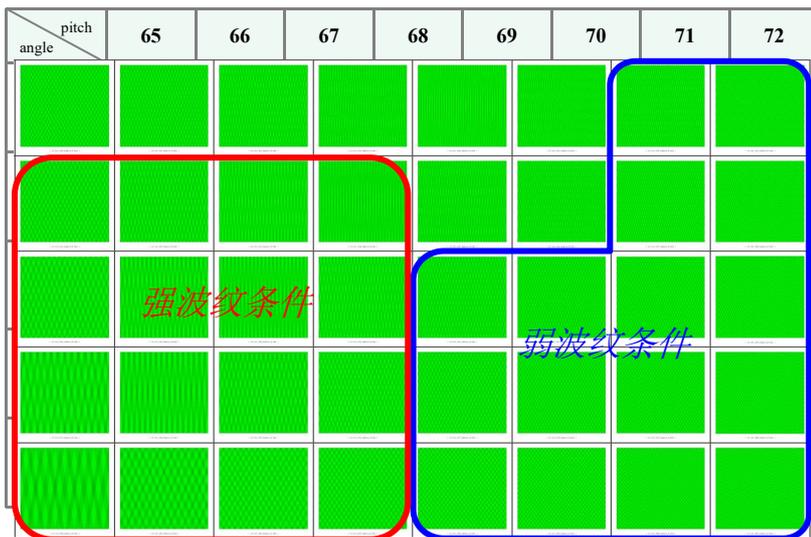
# 基于人眼的摩尔纹分析

用于通过网线角度、像素形状和尺寸检查摩尔纹图案

使用光线追踪 + FFT (快速傅立叶变换) 方法分析摩尔纹现象

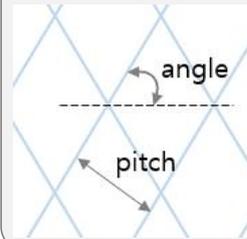
- 生成肉眼可见的摩尔纹图案。
- 考虑触控屏的实际结构。

[云纹图像结果]



[网线分割条件]

- 仿真区域 : 1cm x 1cm
- 间距 (Pitch) : 100~105 [um]
- 角度 (Angle) : 55 ~ 65 [°]



[CSF 值地图]



	65	66	67	68	69	70	71	72
40	0.0018	0.0029	0.0026	0.0026	0.0035	0.0034	0.0028	0.0023
41	0.0037	0.0044	0.0033	0.0030	0.0035	0.0031	0.0020	0.0017
42	0.0088	0.0078	0.0049	0.0044	0.0022	0.0017	0.0017	0.0011
43	0.0225	0.0142	0.0085	0.0055	0.0024	0.0015	0.0010	0.0010
44	0.0407	0.0231	0.0111	0.0055	0.0026	0.0016	0.0011	0.0009

用户可以通过分析CSF值和地图中的结果选择网线，

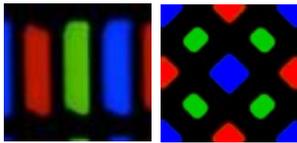
\* 可见度低的摩尔纹图案，CSF值也低

# WORK PROCESS

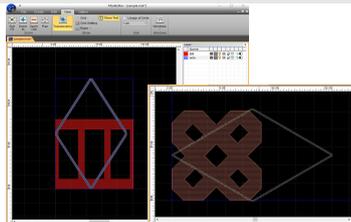
GDS II 导入和  
结构生成



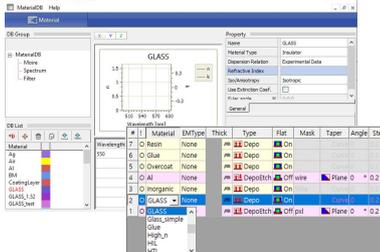
导入 GDS II  
& 建立Mask文件  
结构生成  
光线追踪



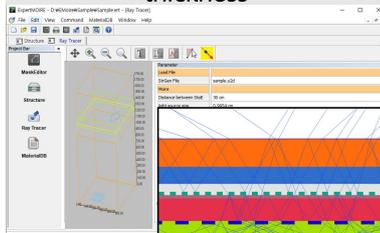
Import .gds file



Make Mask file



Set Material & Layer  
thickness

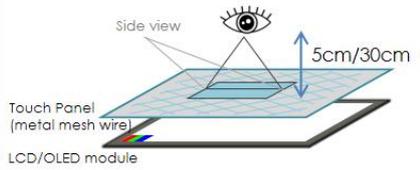


Set Ray tracer

查看器



检查摩尔纹图案



Distance condition [mm]	5cm	30cm
A		
B		
C		

material	RI	thickness
Glass	1.5	1.0mm
Resin	1.4	0.5mm
Film	1.6	0.1mm

	Glass	Glass+Resin	film

Viewing Location  
(Front/Side)

Layer  
Thickness/R

PXL Type condition	Wire condition	Sim. Result
	Change of Angle, Pitch 	
	Wire Rotation 	
- Other types are also sim. available		- Input in .gds file format : sim. available

PXL / Wire Split

	LCD pattern mode	Wire condition	Actual Result	Sim. Result
White 0deg				
Green 5deg				

White / Green pattern

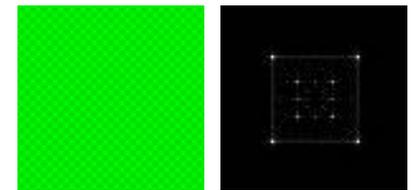
FFT 分析



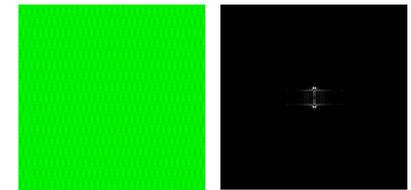
分析摩尔纹图案  
(光线追踪 & FFT &  
对比值)



Contrast Value : 0.029



Contrast Value : 0.002



Contrast Value : 0.0016

RayTracing + FFT

Moiré Pattern Result

Expert Moire 主要优势

优势

- ✓ 生成肉眼可见的摩尔纹图案
- ✓ 高速优化的引擎。
- ✓ 生成任意图案的真实结构。

Expert Moire

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Specification

PLATFORM : IBM-COMPATIBLE  
OS : WINDOWS 8,10  
CPU : 2.0GHz or Better  
MEMORY : Minimum 4GB Recommended 8GB or Better