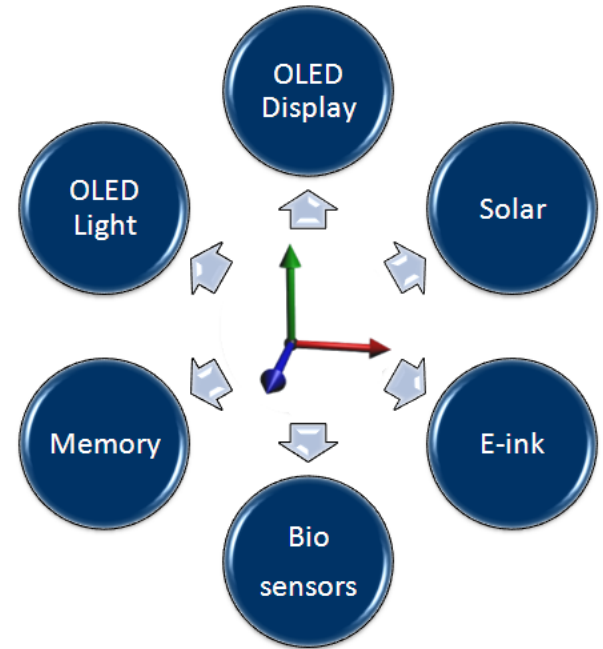




Tomorrow's Electronics on Today's Infrastructure

Investment Opportunity

- Problem - No cost-effective method to manufacture high-quality organic electronics
- Solution - Orthogonal's patent-pending photoresist system that leverages existing infrastructure



* Sony

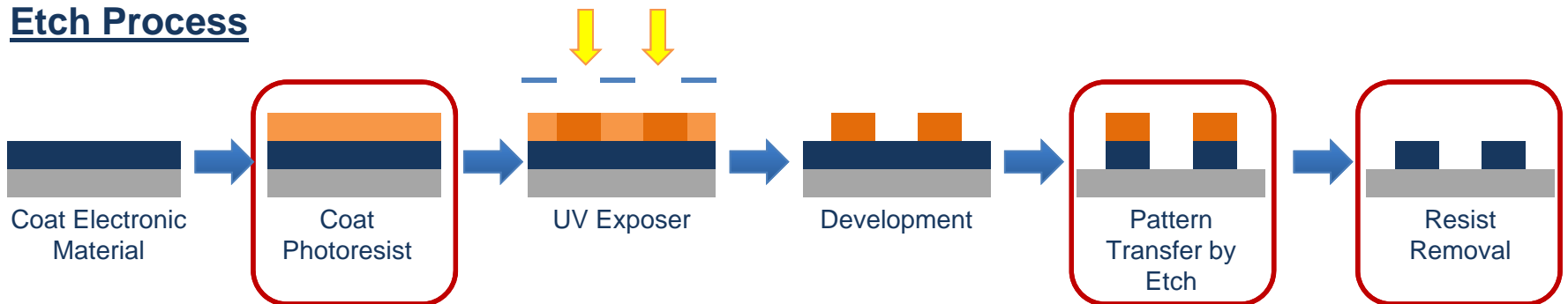
Leveraging the Current Infrastructure

- Photolithography
 - > 4 decades of electronics patterning
 - > \$20 Billion in equipment sales
- **But photolithography chemicals destroy organic materials**



OLED exposed to conventional photoresist

Etch Process



Orthogonal's Unique & Enabling Solution

- Non-toxic photoresist system compatible with organic materials & photolithography equipment
- Least amount of change required by our customers
 - Drop in



Non-interacting OLED and
fluorinated solvents

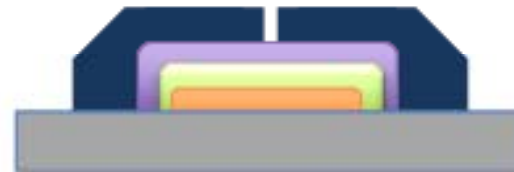


Example I - Organic TFT

- Better resolution increases the quality of device
- Tighter registration increases the yields
- Excellent film uniformity & minimized surface roughness
- Patterned using: lift off, wet etch or dry etch



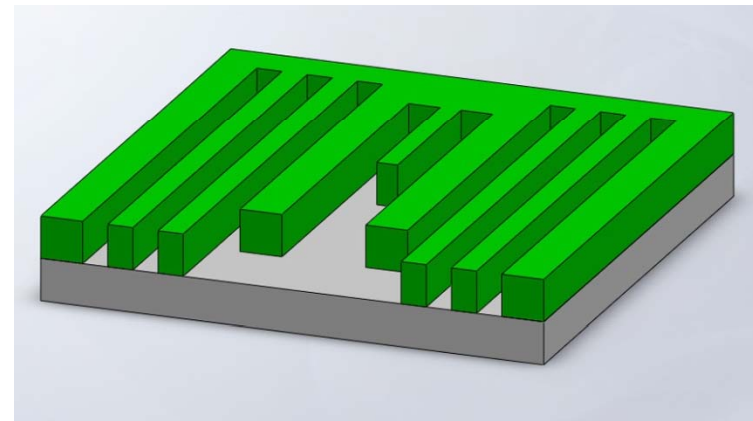
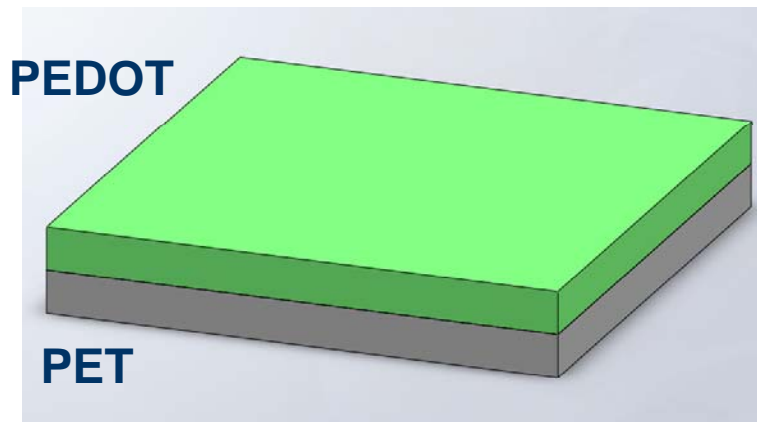
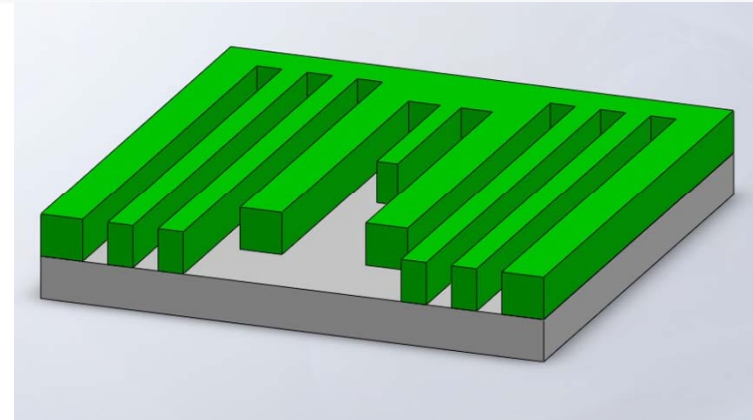
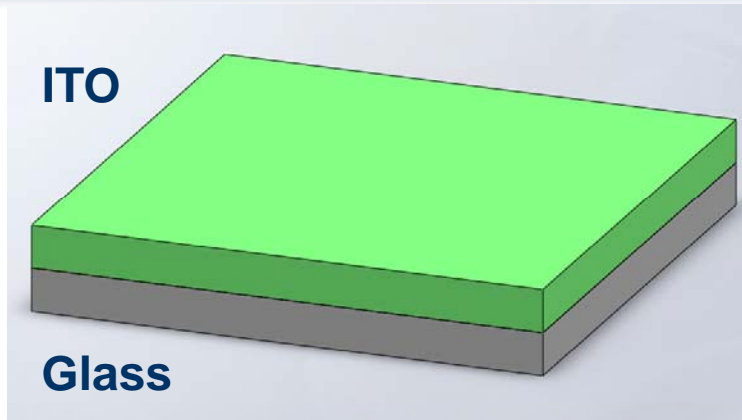
Bottom Contact



Top Contact



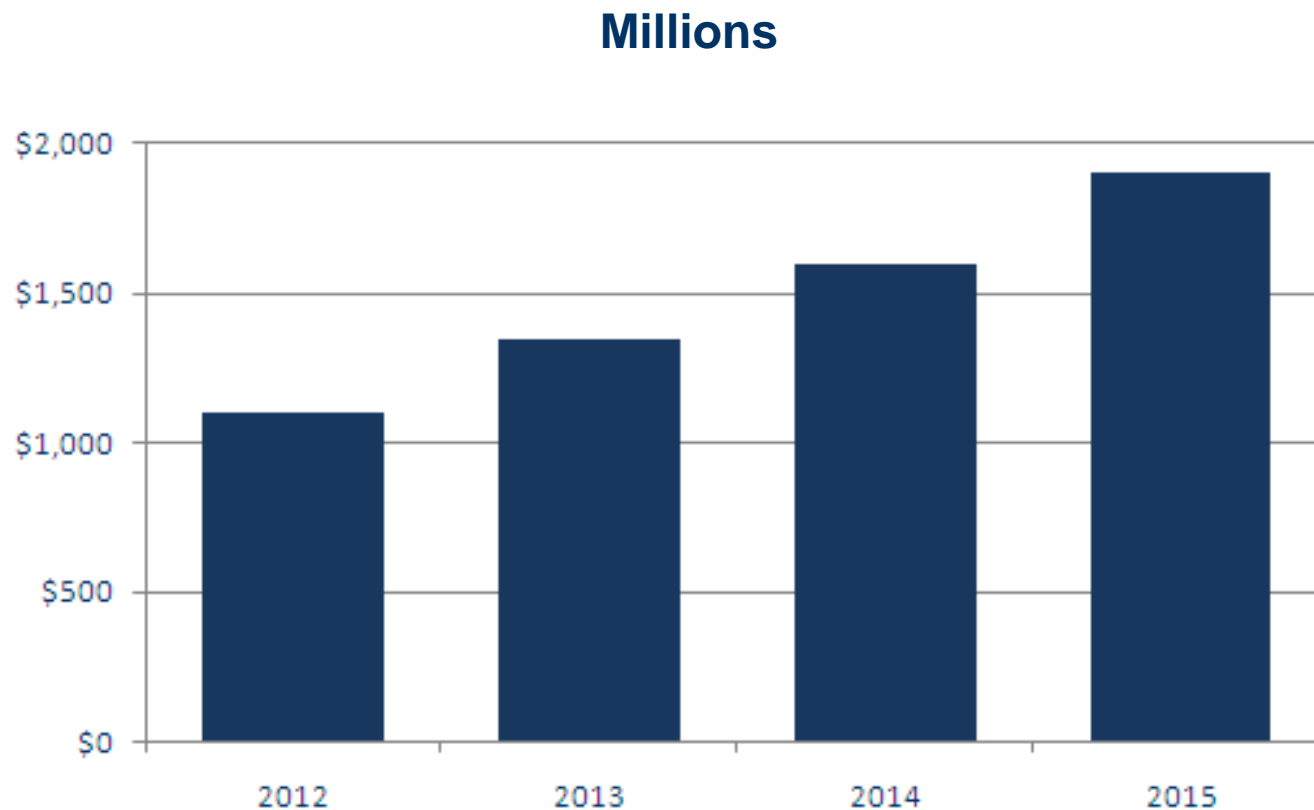
Example II – ITO Replacement



- No new equipment – wet or dry etch solutions



The (Organic Compatible) Photoresist Market



- LCD photoresist industry - 1.2 Billion in 2009

* Display Search, NanoMarkets & Fuji Chimera



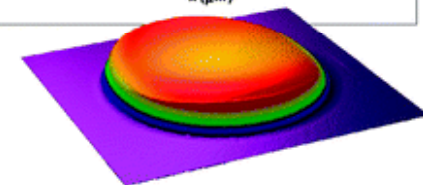
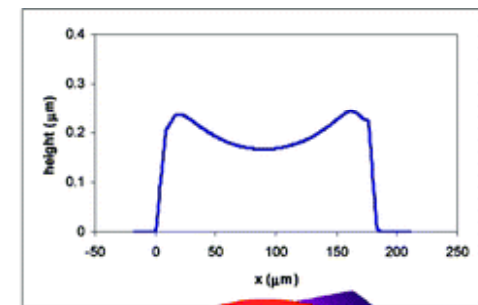
Competitive Process Landscape

	Orthogonal Photolithography	Solution Printing
Resolution	1 μm	10 μm
Registration	+/- 0.1 μm	+/- 5 μm
Current Infrastructure	Yes	No
Materials Compatibility	Small Molecule & Solution Processable	Solution Processable
Yields	High	Medium
Risk	Low	High
Film Uniformity	High	Coffee Ring

 - Excellent

 - Poor

- Higher quality – 10x
- Higher yields
- Fast time to market



Coffee Ring



Business Model – Specialty Chemicals



Manufacturers

AUO

SONY

Panasonic



Honeywell

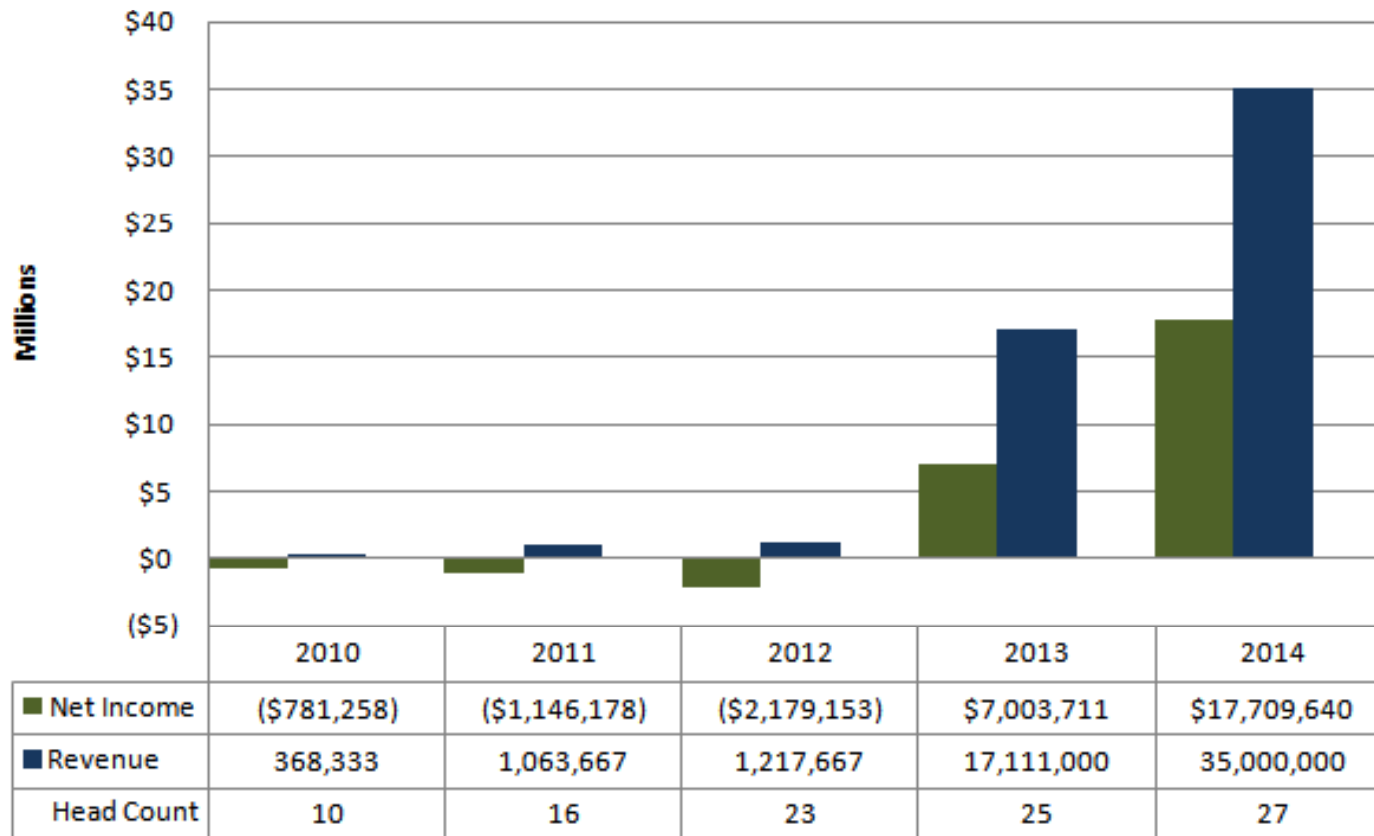


Organic Electronic
Materials



Financials

Sales, Profits & Head Count



* Includes grant revenues



Team



Fox Holt (CEO):
Serial Materials
Entrepreneur



Dr. John DeFranco (CTO):
7+ years of research on
Orthogonal technology



Dr. George Malliaras
(Founder): Pioneer of
organic electronics



Dr. Chris Ober (Founder):
world renown photoresist
chemist

