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Manager Announcements
Company Announcements Office
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Dear Sir/Madam

We have pleasure in attaching a paper that will be presented to key industry participants at a seminar in the UK this week, outlining the Company's magneto optical technology.

ABOUT PANORAMA SYNERGY LIMITED

Panorama Synergy Limited is listed on the Australian Securities Exchange (ASX:PSY) and is developing and commercialising its Magneto Photonic Crystal (MPC) technology. MPC is a breakthrough technology involving the integration of magneto-photonics and nanotechnology to produce a much better display technology than is currently available. The company currently has over 100 patents either issued or applied for in relation to the technology and has recently produced the first working prototype to showcase this unique display system.

Further information on Panorama Synergy Limited can be obtained from its web site at <http://www.panoramasynergy.com>

Media and Investor enquiries

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WINNING DISPLAY TECHNOLOGIES FOR THE NEW DECADE

A solid-state, bi-stable, nano-second switching light engine for 3D digital projection

Dr Neil Grice
Chief Scientist
Moller Centre, Cambridge
25th February 2010

- Overview and Introduction
- Demands of 3D Projection
- Limitations of current projector technologies
 - LCD
 - DLP
- What is Magneto Optics (MO)?
- Getting to RGB
- Ensuring a bi-stable structure
- Current status of development
- Summary



Overview and Introduction

- Panorama Synergy is a small Innovation company based in Perth, Australia
- Panorama Synergy (Europe) Ltd established to take advantage of the UK's strengths
- R&D for 4 years on digital projection and other applications



Overview and Introduction

- Consumers have ever increasing DEMANDS for higher quality and 3D projection.
- The QUEST is to provide a 3D (and 4K) capable technology, at a reasonable cost and the highest reliability.
- Current technologies struggle to meet the specifications laid down by the Digital Cinema Initiative (DCI), however...

Panorama Synergy may improve the offering

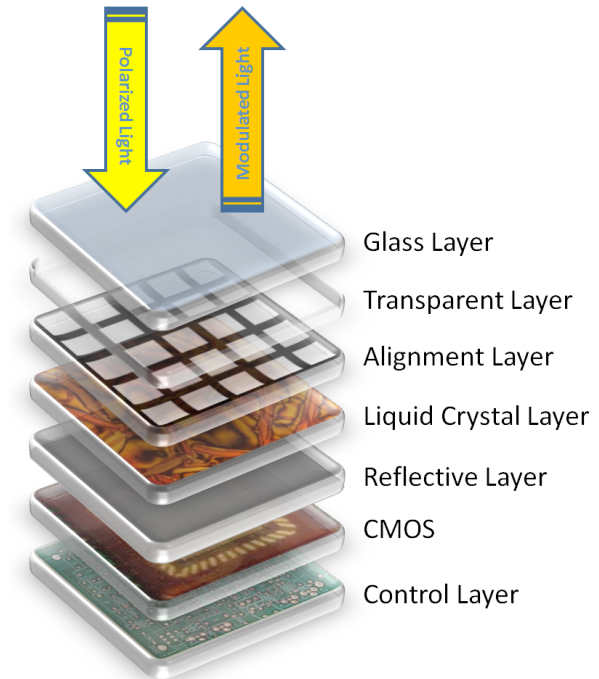
Demands for 3D Projection

- Polarised light - hence *low light efficiency*, leading to. . .
- need for effective thermal tolerance
- Low light engine power (bi-stable)
- High resolution (4K x 2?)
- High switching speed
- Acceptable processing complexity, leading to...
- ease of scalability.

Current Technologies 1

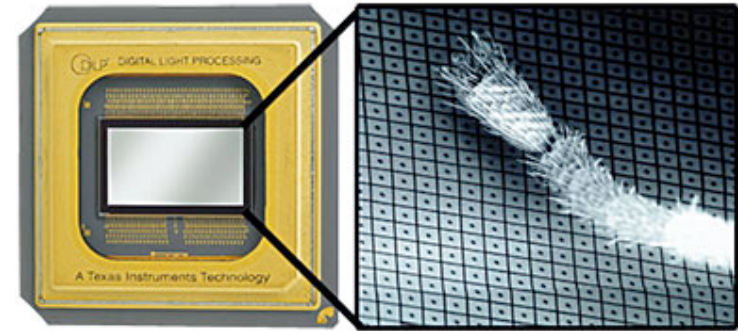
Sony SXRD:

- Full 4K system
- Based on LCoS
- Reflective
- Colours are thermally sensitive
- High heat output - hence high cooling requirements
- Switching speed in *milliseconds* (mSec)
- LCoS a complex system/process with significant investment



TI DLP:

- 2K system (4K due.)
- Based on MEMs (micro mirrors)
- Reflective
- Mirrors are thermally sensitive around 80°C
.... hence high cooling requirements
- Switching speed in *microseconds* (μ Sec)
- Very complex design and processing - hence projectors are now “4K ready”





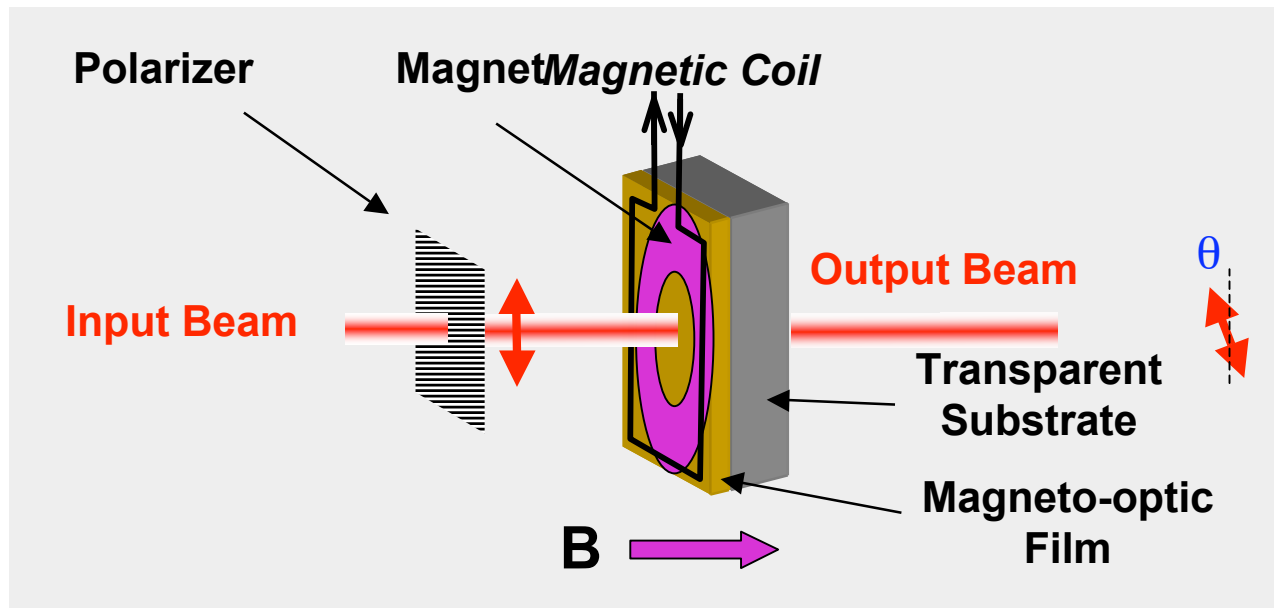
PSY MO:

- Potential for 4K and above (very scalable)
- Based on MO layers, no moving parts hence....
 - solid state
 - high thermal tolerance
- Reflective
- Switching speed in *nanoseconds* (nSec)
- Very simple design and processing
- RGB extremely tunable

Technology Comparison

Platform	LCoS	DLP	PSY-MO
Switching speed (s)	10^{-3}	10^{-6}	10^{-9}
Solid state?	No	No	Yes
Complexity	Medium	High	Low
Inherently Bi-Stable	No	No	Yes
Polarised light?	Yes	No	Yes
Thermal tolerance	Low/Med	Low/Med	High
Switching speed (s)	10^{-3}	10^{-6}	10^{-9}

What is Magneto Optics



$$\theta = V B l$$

V = material constant

B = magnetic field

l = Film thickness

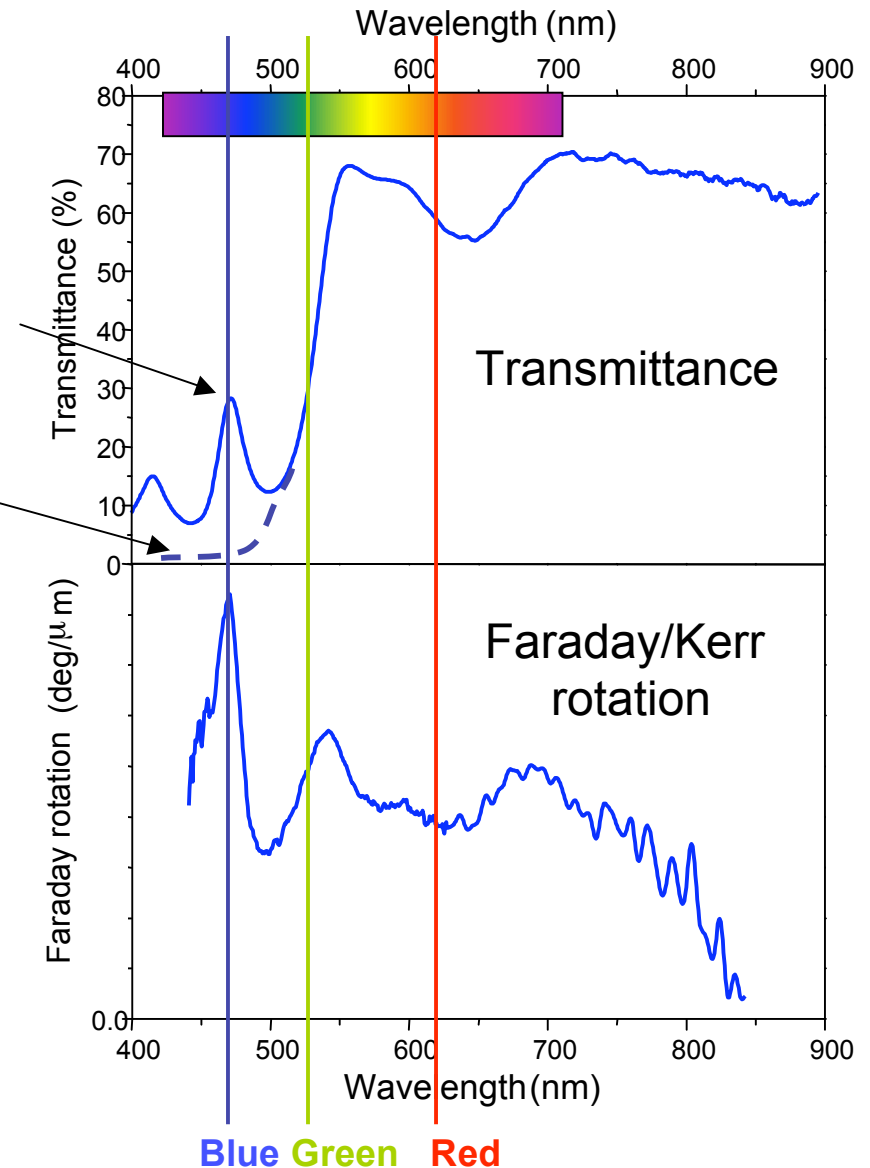
Background: Mature telecom application using infrared spectrum

Advantages:

- Fully integrating optical isolators on a single wafer
- Compact size
- Low cost
- Low magnetic field

Getting to RGB

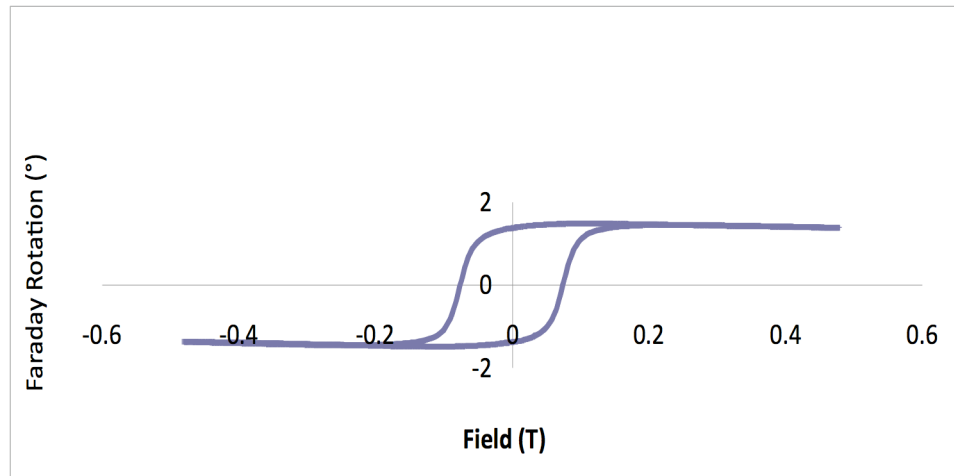
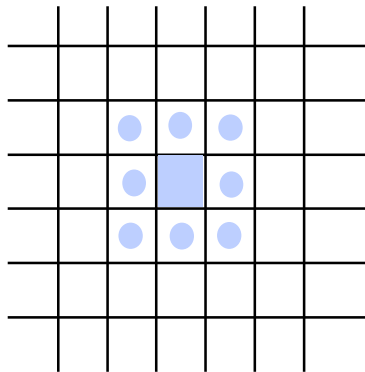
- MPC with 30% **blue** transmission
- Contemporary material performance
- First ever to achieve this !!



Ensuring a bi-stable structure

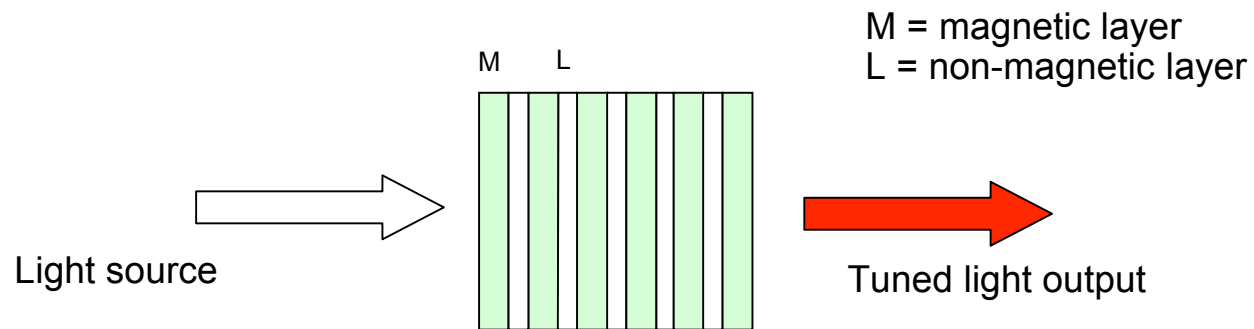
Zero cross-talk = clearer picture

Bistability = reduced power

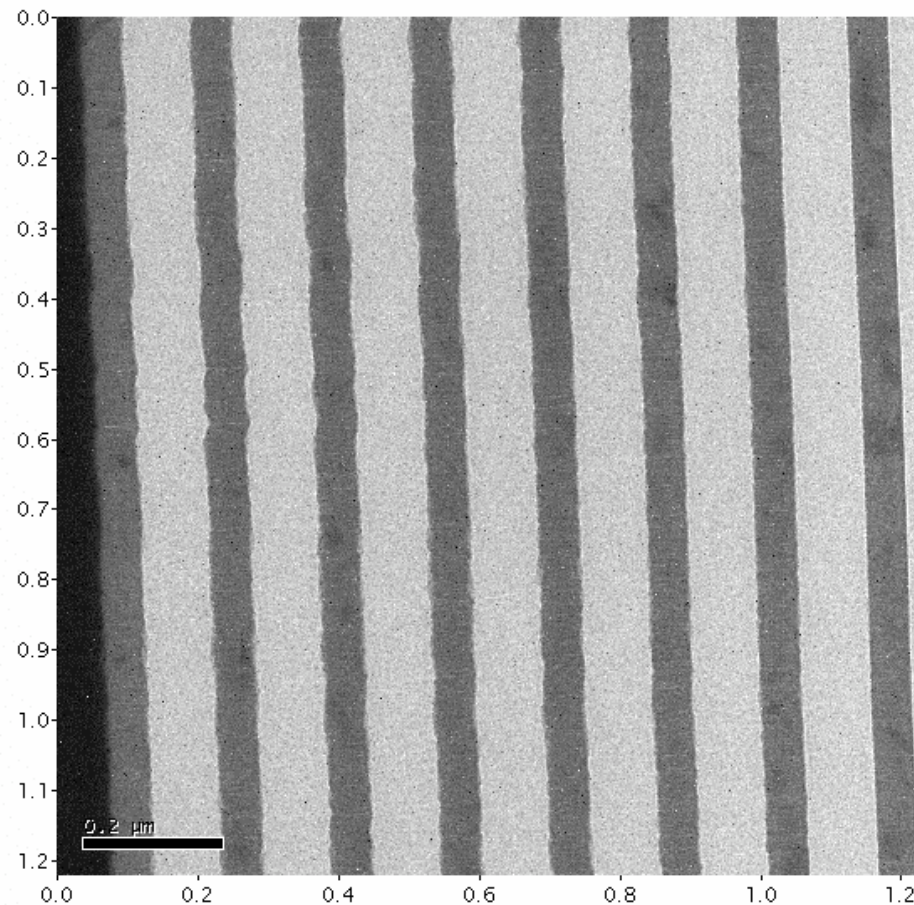


“Rectangular” hysteresis reduces cross-talk

- PSY has successfully produced and characterized the first ever visible range transmissive (Faraday) multilayer samples

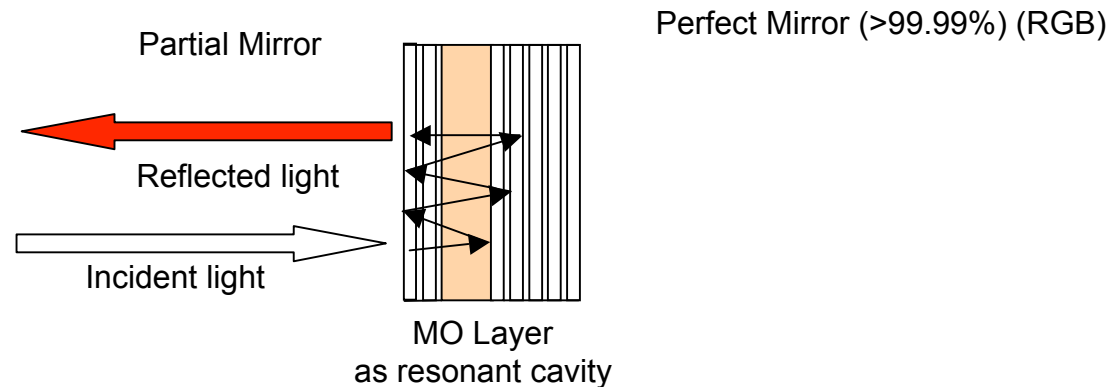


Transmissive Design



**Typical multi-layer structure demonstrating close thickness control and film integrity
(From PlasmaQuest)**

- PSY has successfully produced and characterised the first multilayer mirror samples to enhance rotation.



Reflective Design

The Next Steps

- ✓ Successfully complete TSB “Beacon Project”
- ✓ Continue development on thermal tolerance
- ✓ Produce Blue structure
- ✓ Develop small scale arrays for characterisation and assessment

Watch this space...



Summary

- 3D projection is fast becoming the standard
- Currently available technologies have limitations
- Panorama Synergy has developed an optical material structure which has the potential to significantly enhance performance and reduce the costs processing
- Further development is required to establish the level of compatibility with existing projection systems (to DCI specifications).



THANK YOU
Any questions?

Participants and thanks to:
University of Western Australia
Queen's University Belfast
PlasmaQuest