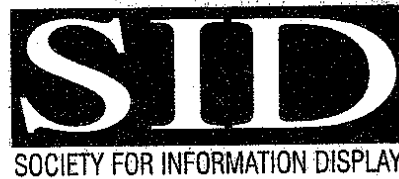


SOCIETY FOR INFORMATION DISPLAY



SHORT COURSE S-1:

Fundamentals of OLEDs

**Amal Ghosh
Eastman Kodak Co.
Rochester, NY**

**Michael Hack
Universal Display Corporation
Ewing, NJ**

**SUNDAY, MAY 23, 2004
WASHINGTON STATE CONVENTION
AND TRADE CENTER
SEATTLE, WASHINGTON**

IPR2023-00808

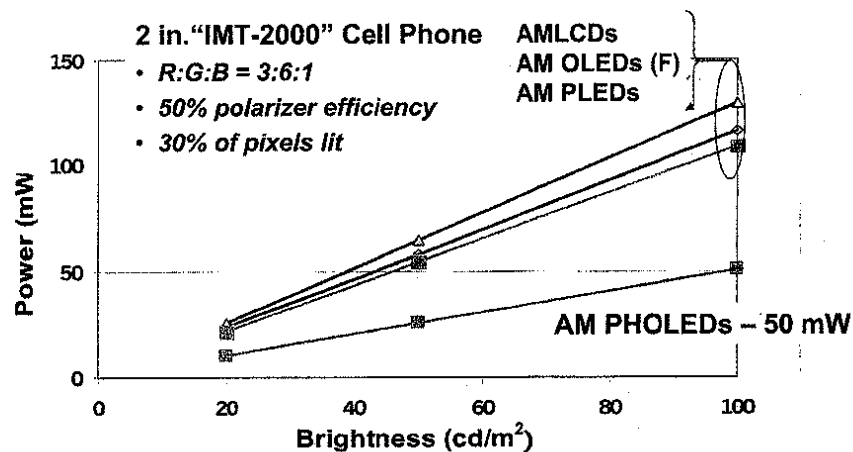
Introduction to Color Display Design

- Select 3 component CIE's to produce white:
 - Trade-off between color purity and power consumption
- Calculate sub-pixel currents based on optimizing OLEDs for luminous efficiency (cd/A) of “weakest” color at appropriate drive levels, accounting for;
 - aperture ratio,
 - color balance,
 - brightness,
 - polarizing filter,
 - multiplexing ratio ($=1/N$ for PM, usually 1 for AM), where N = # of scan lines
 - End of life characteristics
- Select voltage based on above considerations and TFT requirements
- Line resistances / widths:
 - For PM, row line voltage drop determined by total panel current
 - For AM, scan/select lines similar to AMLCD :Power and ground must support total pixel current of that line.

Fundamentals of OLEDs

SID May 04

AMOLED Display Power Consumption



Fundamentals of OLEDs

SID May 04