



# CNSE Smart System Technology & Commercialization Center

*“Nano Technology for a Smarter  
Economy”*

*Paul R Tolley CNSE VP Disruptive Technologies & Ex Dir. STC.*

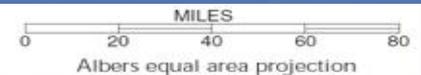


# What is CNSE?

- The **College of Nanoscale Science & Engineering**
- In the Past 10 years we helped drive almost \$20 B of investment in NY.
- The global epicenter of the Semiconductor industry.
- An umbrella organization that drives technology growth and commercialization through multiple Centers across NY State.



# NY Technology Corridor



## New York State Map



**Smart Systems Technology Center & Park**



7

**Marcy NanoCenter Campus (Utica)**



5

**Global Foundries Technology Campus (Saratoga Springs)**



4

**Watervliet Arsenal Technology Park**



3

**Albany NanoTech Complex Technology Hub**



1

**IBM East Fishkill Fab Campus**



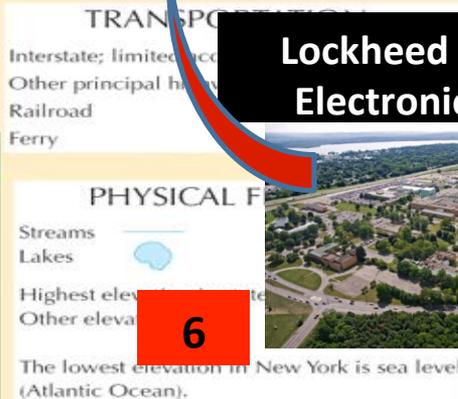
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**Lockheed Martin Electronics Park**



6

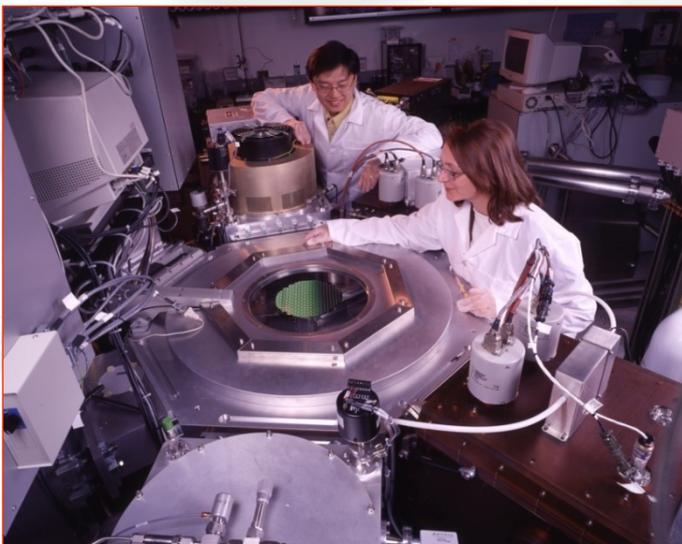
**Nanoscale Fabrication Requires Closer Coupling Between R&D and Manufacturing**





# Who is STC?

**Vision** Establish STC as a global resource for the development and deployment of innovative Nano-scale system technologies for emerging optical, optoelectronic, medical, and energy products and applications.



**Mission** Serve as a fiscally viable and technically creative asset to demonstrate, prototype, and deploy competitive system-on-a-chip products, leading to economic benefits and job creation opportunities in New York.



# How Do the Centers Work

Clusters of companies, including defense, aerospace, semiconductor, advanced manufacturing, medical device and energy companies will partner with us to “Crack the Code” by leveraging our Lab to Fab infrastructure to drive solutions across technology sectors.

New York becomes magnet for expansion and attraction for device/system manufacturing.

It's estimated, over \$35 billion will be spent in development of SMART infrastructure solutions alone next year – Will we be able to commercialize it?



Large Customers



TEXAS  
INSTRUMENTS



ITT

Federal Funding



STC



\$3.3mm Investment

~24 High Tech Jobs in 2011



\$17mm Investment

60 High Tech Jobs by 2012

Start-Up Customers



Projected 5-Year Economic Impact

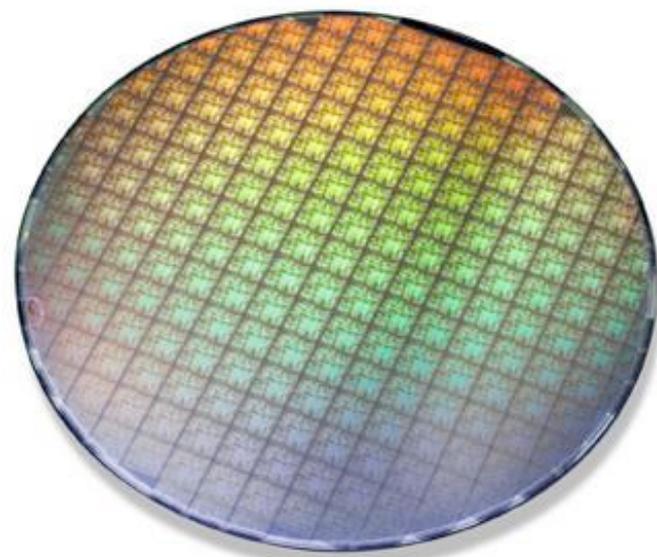
~280 Jobs Created

60 Jobs @ STC

>\$200M in Private Investment



# The Smart Wafer Platform



Leverage the Semiconductor and Micro Electronic partners of CNSE and STC to develop the world's first Smart Wafer common Platform.



# Smart Sensors: New High Growth Opportunities

## Smart Buildings



## Smart Infrastructure



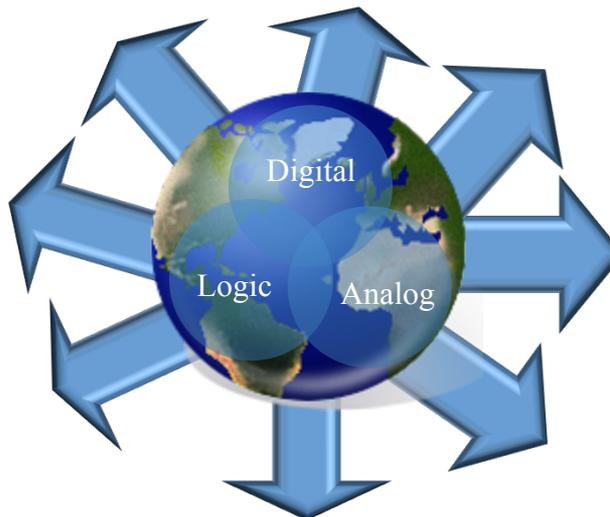
## Optical Sensing



## Healthcare



## Defense



## Location Based Services



## Consumer Electronics



## Augmented Reality

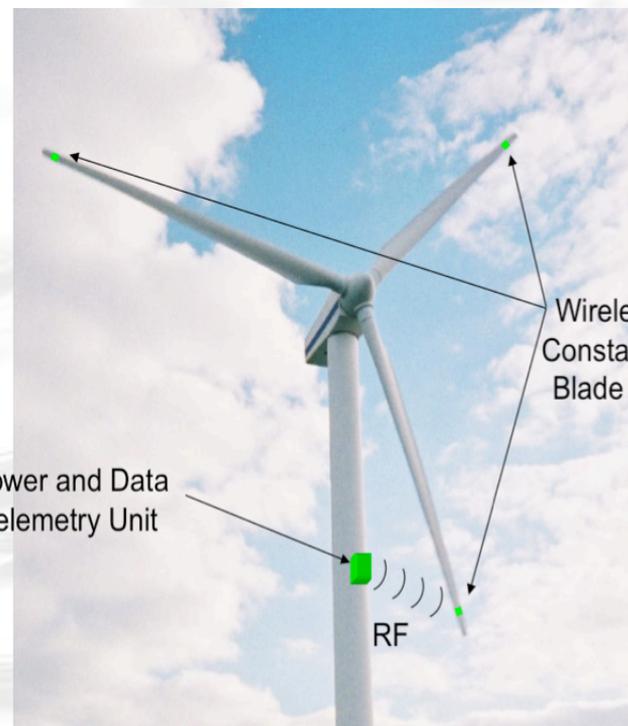
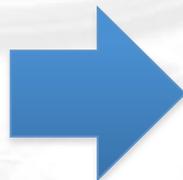


9/22/2011



# Why Is This Important?

## Fast Solutions to New Problems – Example: Wireless Turbine Blade Monitoring



Wind Turbine showing installed TBCM units attached to blades and telemetry unit for power and data



# Why Is This Important?

## Fast solutions to areas of “Critical National Need”

- SPRINT – \$1.4 MM Advanced Prosthetics Research program through Army Telemedicine Advanced Research Center.
- **\$1 million cost per soldier in Afghanistan.** Many injured soldiers seek return to duty.
- Serious lower extremity injuries – 47.8% (3900 over 5 year period) of all casualties.
- **26.3 million Americans have diabetes.** More than 60% of nontraumatic lower-limb amputations occur in people with diabetes.
- In 2004 alone, about **71,000 nontraumatic lower-limb amputations were performed** in people with diabetes.





# Example of Success Story

## Moser Baer Technologies

*“Lighting our future and keeping it bright”*



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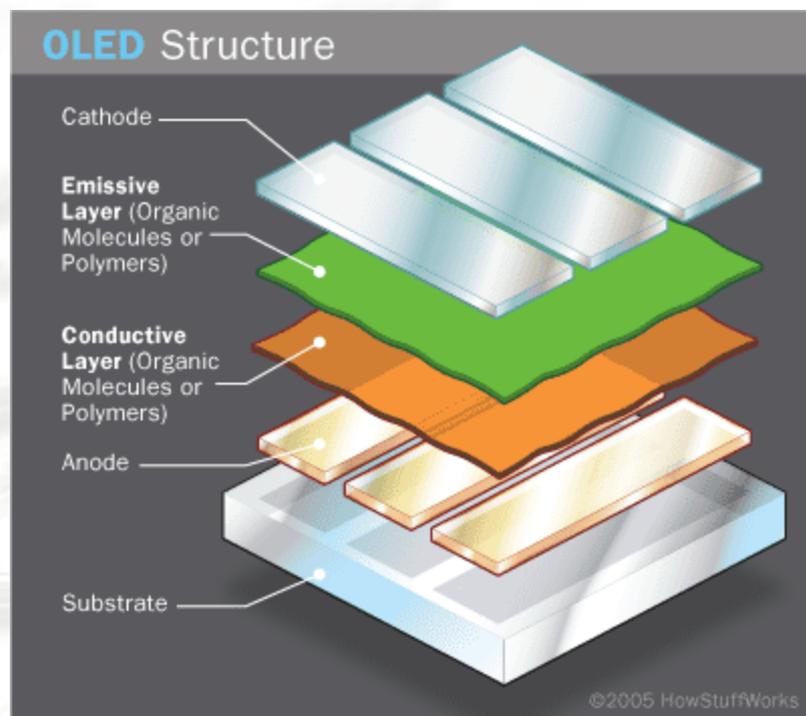


# Example of Success Story

- Who Are Moser Baer Technologies, Inc.?
- Moser Baer Technologies has committed to investing \$17 million in capital improvements and equipment to locate the world's first organic light emitting diode (OLED) lighting manufacturing line at CNSE's Smart System Technology & Commercialization Center of Excellence set to be ready in February 2012.
- Why are OLEDs Important to our future? What are SSL's and why are CFL bad?



# What Are OLEDs





# Example of Success Story

MBT Currently employs 13 individuals at the Center, and plans to have 60 full-time employees on site by the end of 2013.

Upon completion of this first manufacturing line, MBT plans to conduct two additional rounds of investment at the Center:

- I. The first is approximately \$10 million for the second round of equipment to refine the OLED manufacturing process and expand cleanroom facilities
- II. The second is to locate a full production facility on the campus, leading ultimately to the construction of a \$20 to \$30 million building with another \$150 million in capital equipment and up to 150 additional new jobs.



# Further Evidence of Success

- Investment in additional processing capital at STC .
- Multiple additional tenant partners looking to leverage CNSE in Albany, Utica-Rome, NICE in Syracuse, STC in Canandaigua.... **The Thruway Technology Corridor.**



# In Conclusion

- We cannot just Innovate & Export Manufacturing.
- We must continue to build infrastructure both University and Manufacturing to drive commercialization here.
- When people ask why would you do business in NY- because we have the **infrastructure** for the 21<sup>st</sup> century economy.