



Introduction  
Plextronics Overview  
Fabrication Lines  
Tech Needs  
Future Plans

Presentation for Micro Nano Tech  
Conference 1

May 2011

# Introduction

- John Krieg
- Manager of Device Manufacturing and Engineering
- I have been at Plextronics for 4+ years
- I manage the R&D fabrication line at Plextronics
- I went thru the NMT program in 2001
- I was a Teaching Assistant for the program from 2002 till 2003

# Plextronics Overview

## Key Facts:

- Founded in 2002
- Based in Pittsburgh, PA USA
- Approximately 70 employees
- 190+ individual & pending patents worldwide
- Strategic investors:



## Business Model:

Develop and manufacture high-performance inks & leading-edge device technology for printed electronics

## Core Capabilities:

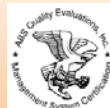
- Conductive polymer design and manufacturing
- Ink formulation, coating, and printing
- Printed device design & engineering

## Dedication to Quality

ISO 9001 certified  
ISO 14001 compliant



ISO 9001:2008 No. 43632



## Target Markets:



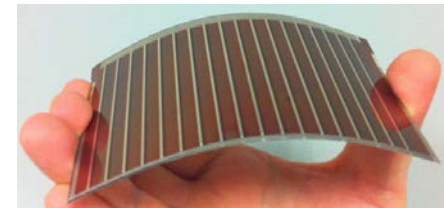
\*W-OLED = "White OLED" for lighting applications

## Existing Product Lines:

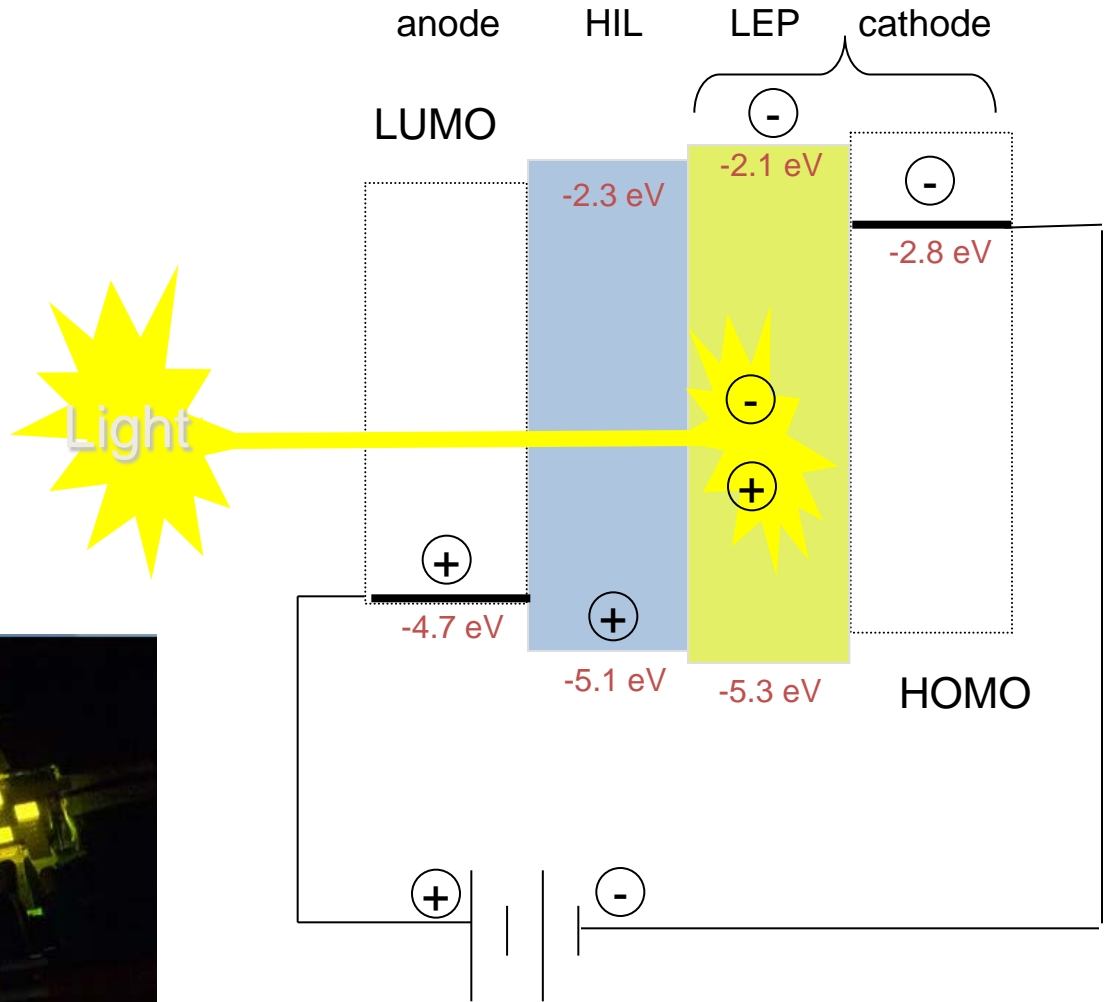
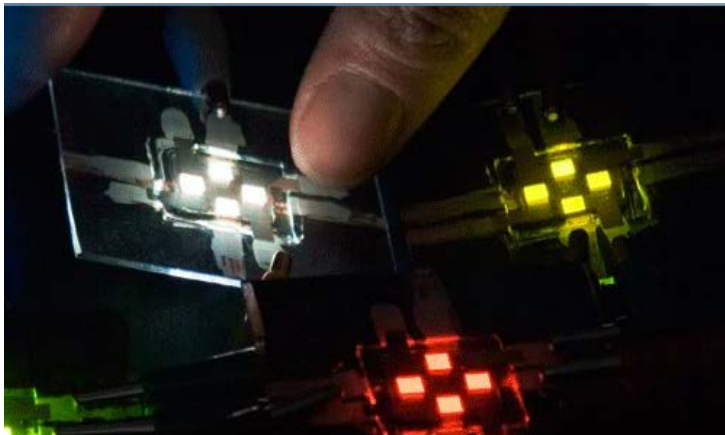
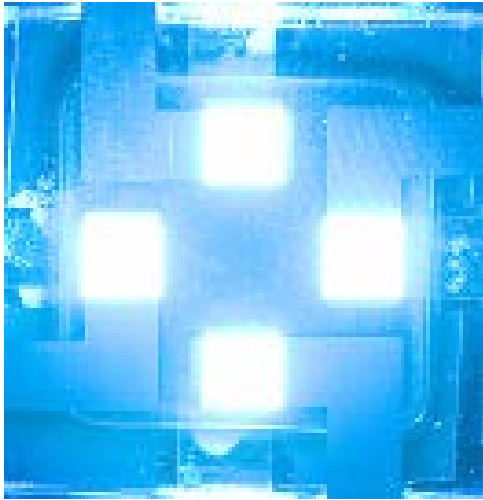
- Plexcore® OC: Conductive polymer inks for Hole Injection Layer (HIL) formation in OLED lighting and displays
- Plexcore® PV: OPV ink systems including matched Photoactive (p/n) and Hole Transport Layer (HTL) materials
- Plexcore® OS: P3HT polymer for OPV and OFETs

## New Product Lines:

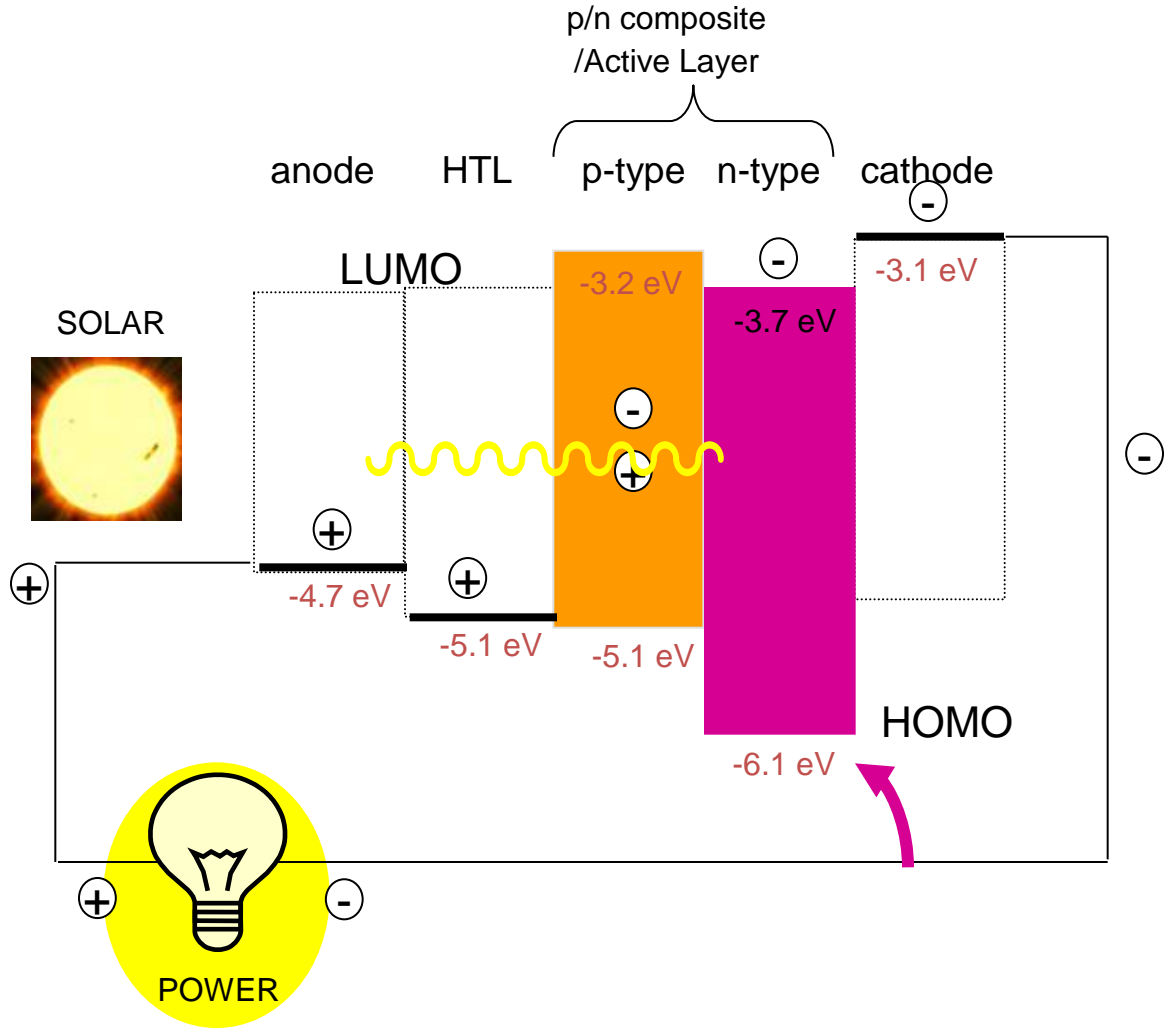
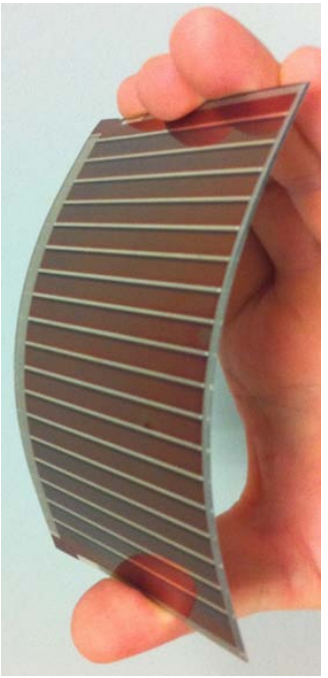
- Plexcore® HIL/HTL: Ink system for printed OLED lighting and displays
- OPV Device Licensing: Printed solar devices incorporating Plexcore® PV inks specially designed for use with indoor, artificial lighting



# OLED – Organic Light Emitting Diode

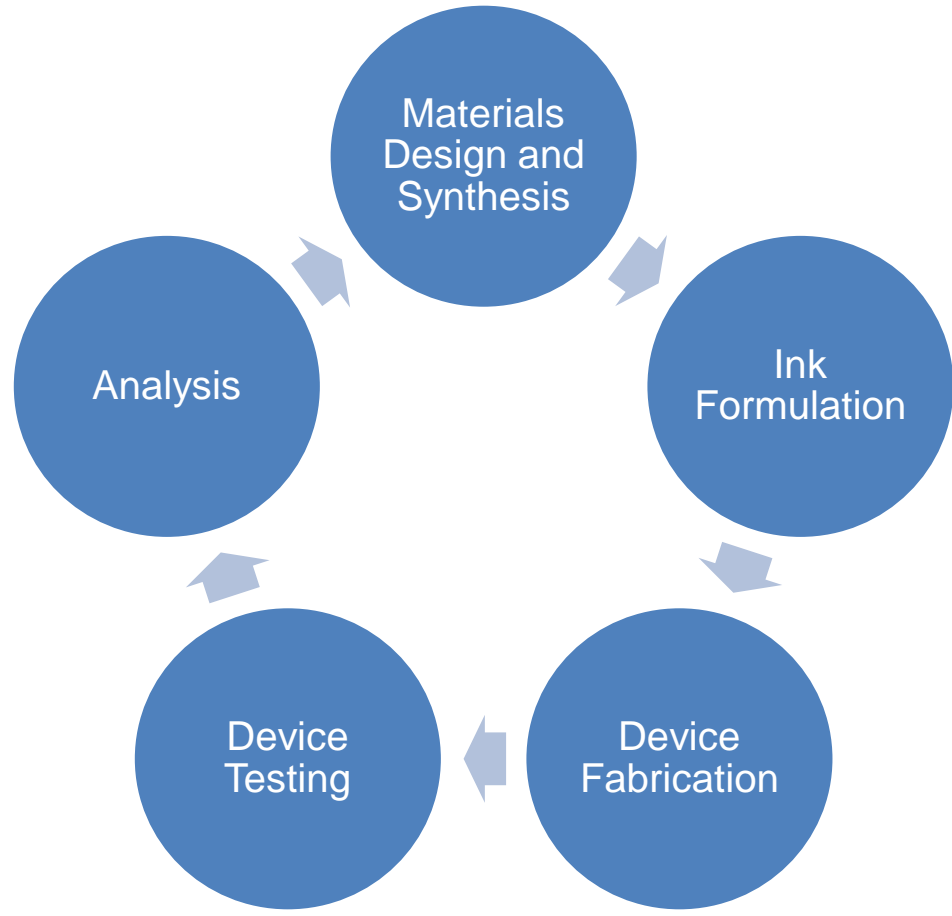


# OPV – Organic Photo Voltaic

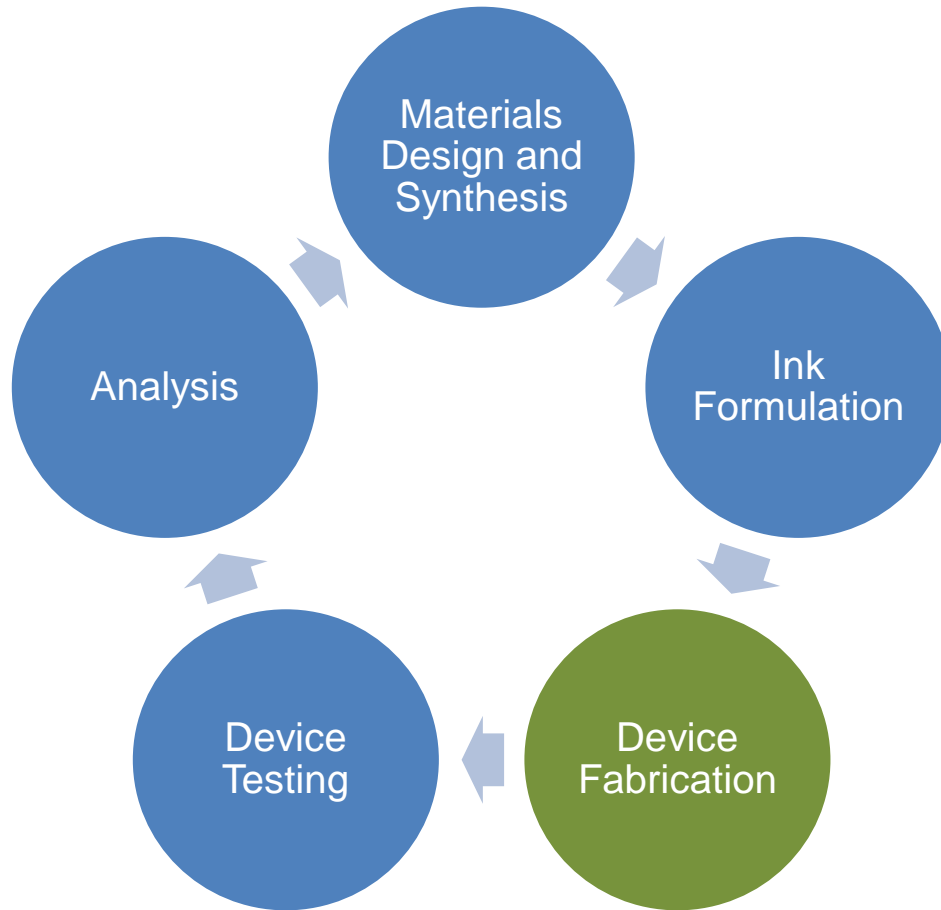


# Plextronics Work Flow

- Plextronics Research and Development process follows this basic flow



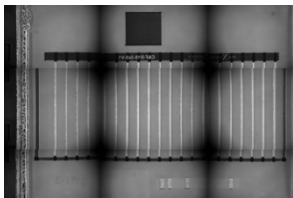
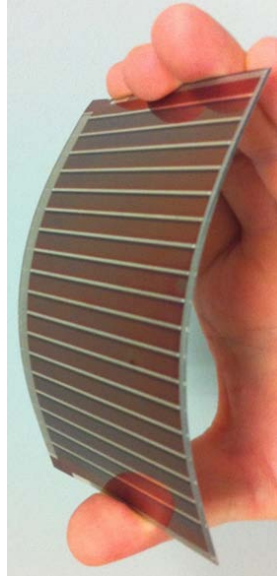
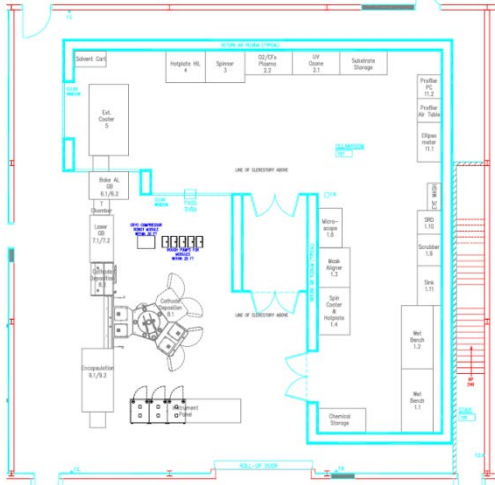
# Plextronics Work Flow



- Plextronics Research and Development process follows this basic flow
- I manage the Device Fabrication step
- We have 2 main fabrication lines that we make devices on

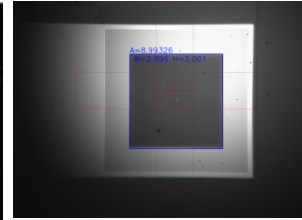
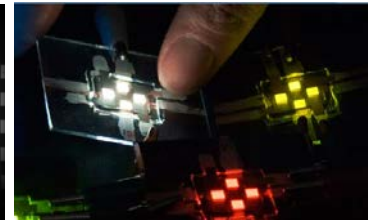
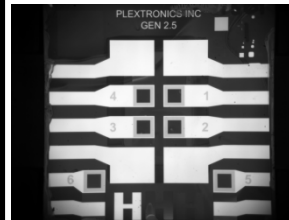
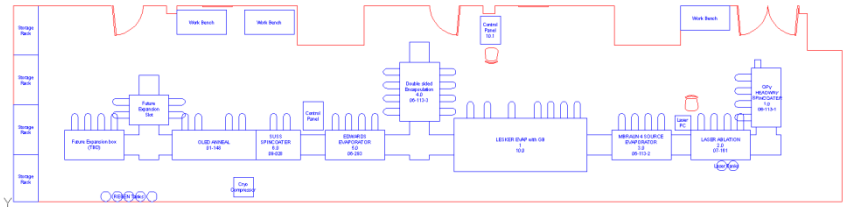
# Fabrication Lines

## D-Line



- 6" x 6" Rigid Process
  - BDB Flexible process
- Modules with multiple cells
- Process Development

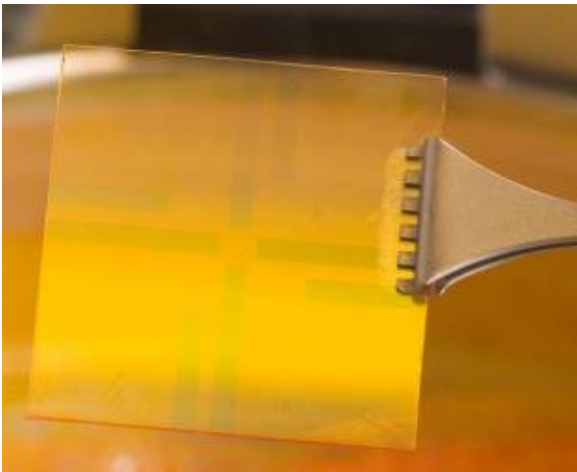
## R&D-Line



- 2" x 2" Rigid Process
- Single Cells
- Ink screening



# Technician skill set



- Clean room experience
- Thin film deposition
- Photolithography
- Spin Coating and other coating techniques
- Characterization and data analysis
- Communication and attention to detail
- Equipment maintenance and trouble shooting
- General hands on experience and Lab educate

# Future Hiring

- We have hired NMT students in the past and we plan too in the future
- We currently have 7 Technician in my group operating on one staggered shift
- Of the 7 Techs, 4 went thru the NMT program
- I foresee us adding in the next year a second shift on the R&D line to keep up with demand



John Krieg, Manager of Device  
Manufacturing and Engineering

[jkrieg@plextronics.com](mailto:jkrieg@plextronics.com)

[www.plextronics.com](http://www.plextronics.com)

University of  
Pittsburgh  
Applied  
Research  
Center





2180 William Pitt Way | Pittsburgh, PA 15238 | [www.plextronics.com](http://www.plextronics.com) | (412) 423-2030

Thank You

