

CEA-Liten develops organic, large area and high throughput technologies for **Printed electronic devices** and multi-functional **System On Foils**.

The **Sheet-to-Sheet** PICTIC is an open platform for the **scale up of technologies** from Laboratory demonstrators to products prototypes

Printed functionalities :

- Energy : printed Li batteries Photovoltaics
- Sensors : optical, chemical, temperature, pressure....
- Full printed organic CMOS Digital & Analog circuits
- PLED signage and lighting devices
- Passive devices : RF filters, antennas, sensors

Typical Design Rules :

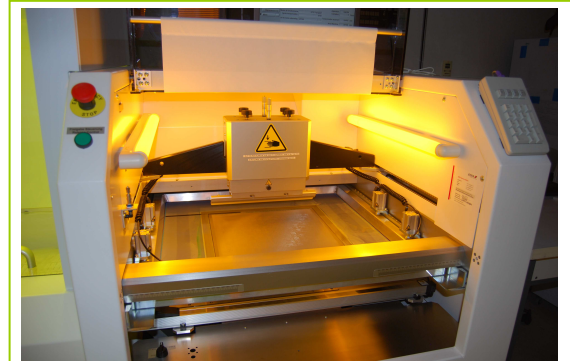
- Substrate standard : Foils or glass , 320mm x 380mm
- Multi-layer processes : 1 - 10 level
- Min feature size ~ 3-10 μ m
- Registration accuracy ~ 10 μ m

Large Area Equipment include:

- High throughput Excimer laser ablation
- Ultrasonic Aerosol
- Screen-Printing
- Jet printing
- Gravure printing



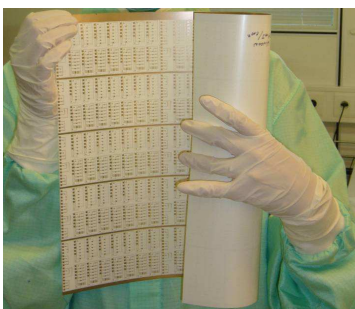
Excimer laser and mask



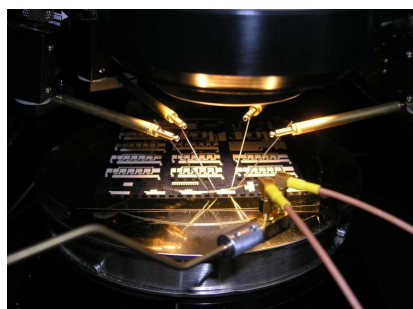
Screen printing tool



Ultrasonic Aerosol



Laser ablated Au layer



Circuit characterization

CEA-Liten Laboratory of Printed Devices developments are application oriented to be transferred to industry :

Target application

- Intelligent Smart Systems
- Human Machine Interface
- Sensor arrays

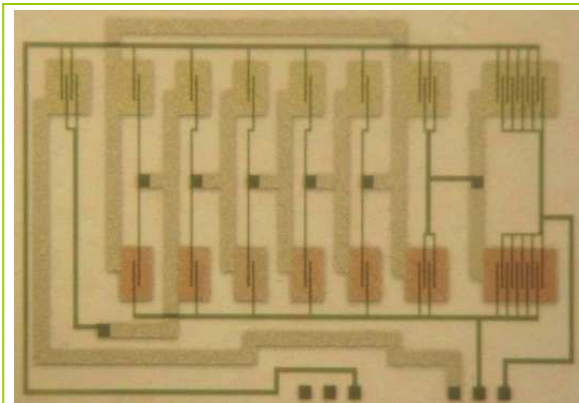
Devices design and characterization

- Device design and modeling
- Design Tool Kit for external designer
- Specific characterization and reliability test

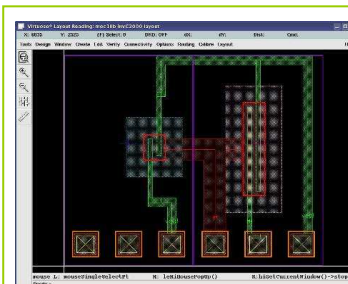
Processes development

- Material and ink formulation
- Front End Deposition and patterning Process
- Back End integration processes
- Scale-up and Reliability
- On line process control

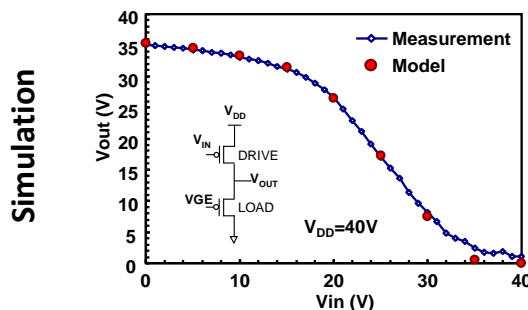
Contact : Cea-Liten GRENOBLE
I Chartier : +33 438 78 39 81



Full printed Organic CMOS circuits



Design
Layout



Organic CMOS Design Tool Kit



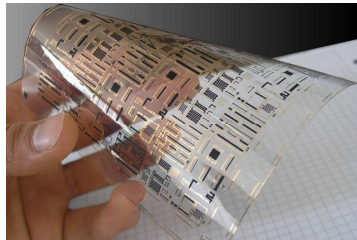
PLED array



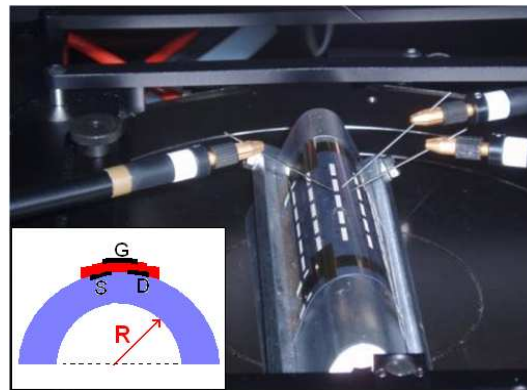
Printed photodetectors



Printed photovoltaics



Printed R,L,C filters



Mechanical Stress Testing