



# Northern Way

## Printable Electronics Supply Chain Project

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# Project Challenges

- How can the UK maximise benefit from the growth of Printed Electronics
- How do we bridge the gap between research and commercialisation
- How to establish a supply chain and 'link-in' the UK's commercial organisations
- How to capture a significant share of the high value market for UK companies

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# Project Status 31.03.11

## **Building the Supply chain – Display applications**

Organic Semi-Conductor actives and binder combinations have been developed with industry-leading properties

- >1 Kilo Scale synthesis by UK Chemical companies
- Filed IP on molecules, ink formulations, synthesis routes and novel processing
- Commercial interest from major FPD companies
- Material sales to tier-1 FPD companies
- Processes and engagement in OEM supply chain

## **Stimulate the supply chain – ‘the competition’**

Overall, the project has involved and liaised with ~ 40 organisations (>90% SMEs)

## **Demonstrators: Work In Process**

- All demonstrator projects are seeking to move forward into further development
- 3 demonstrators are ready for commercialisation
- 1 demonstrator is proceeding to process & manufacturing
- 2 demonstrators are looking for further technical development, requiring offset litho printing
- 2 in-house developments delivered, technology developed and customers identified
- 2 require investment for further development

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## Next Steps: What is required?

- Needs from projects and partners
- End user identification to further build the supply chain
- Further technical development
- Development of scale up and production
- Investment for commercialisation

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# What options are available

- **Supply chain build, end user identification, customer engagement**
  - KTN activity
  - Networks from CoEs, OMEC, WCPC, PETEC, CIKC, etc
  - IDTechEx
- **Technology Development**
  - TSB calls and Grants for R&D
  - FP7/8 – see CoE partners, EEN
    - Through Project e-COLAE for EU partner organisations
- **Scale up and commercialisation**
  - Partner activities, Print Yorkshire
- **Financing**
  - VCs and commercial financing
  - Project finance

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# How PETEC can help

- Development for Displays  
Semiconductor formulation and integration
- Solid State Lighting 'OLED'  
& Photovoltaic systems
- Vacuum and barrier film processing
- Integrated Smart Systems  
Development for 2011



© Dupont



Academic demonstration of OLED



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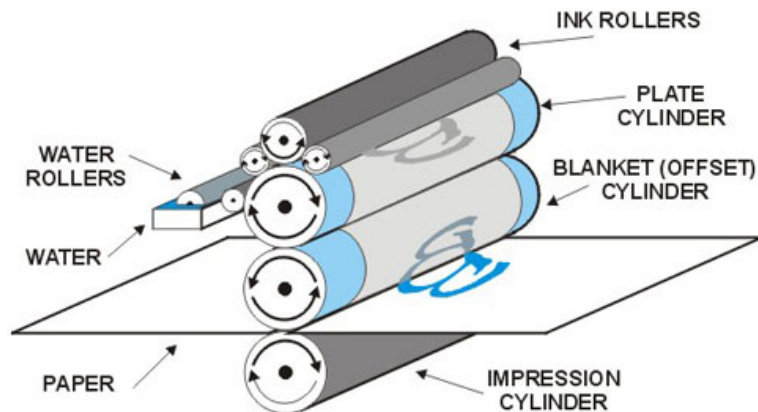
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# Definition of ISS

- Integrated Smart Systems (ISS) are items produced by the integration of electronic components with circuits prepared by traditional print processes

## Printed Electronics



[www.savanahdesign.com.au](http://www.savanahdesign.com.au)

+

## Silicon Electronics



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[www.dicts.info](http://www.dicts.info)

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# PETEC's ISS offering –Oct 11 onwards

- Access to a prototyping facility to enable customers to do one-off projects using:
  - Printing equipment, pick and place, converting equipment, assembly of electronic sub-system, test and metrology equipment
  - Print/proof equipment
  - Materials formulation, development and support
  - Conventional Print-room environment
- Assembly of supply chain and promotion of technology platform to UK industry
  - Raise awareness of ISS opportunities in supply chain
  - Facilitate collaboration to encourage demonstrators
  - Active development of collaborative projects to develop and take forward the technology platform
  - Provide advice
  - Introduce enquirers to other organisations through brokerage
- 2 print trained personnel plus support for admin and communications

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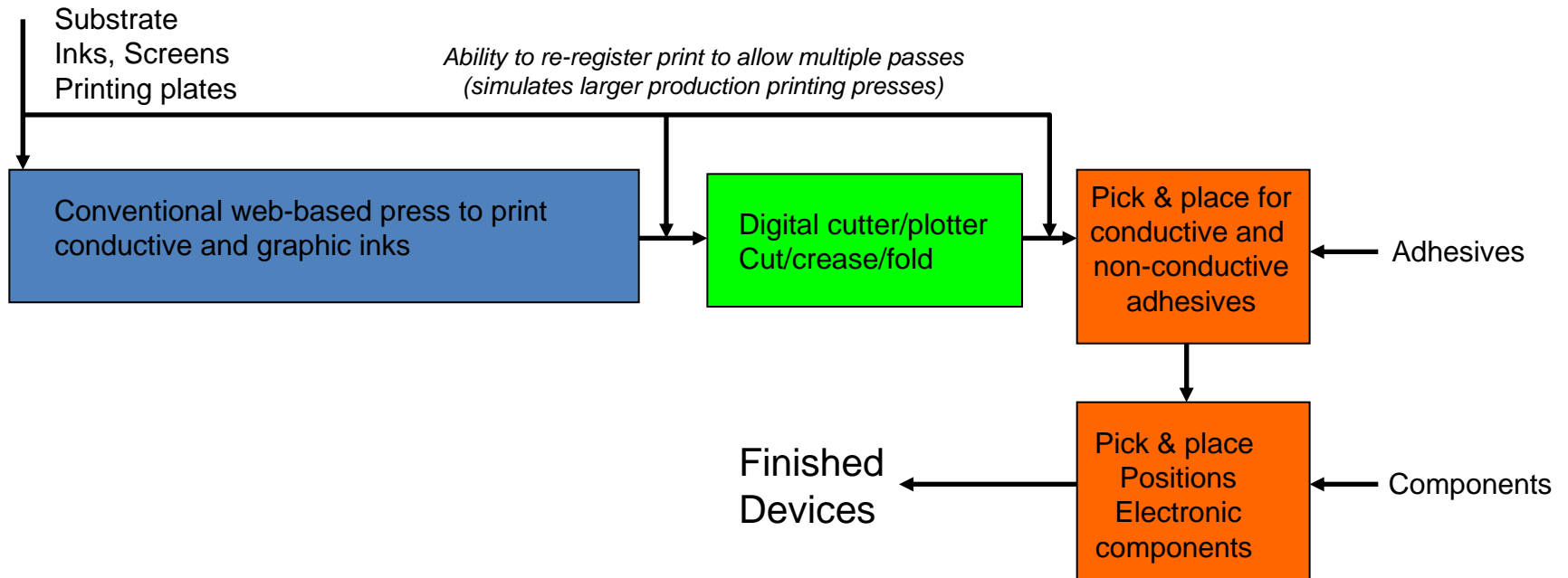
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# ISS Prototyping Facility (schematic)

## Non-Cleanroom Environment



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# And finally.....

Many thanks to:

- The Northern way for funding the project: Sarah Jackson, Jim Keene, Kim Wong, Tracy Milsom, Bill Boffin, Peter Winter
- The competition board: Ric Allot, Chris Rider, Harry Ziman, Tim Claypole
- The monitoring officers: Chris Rider, Don Lupo, Bela Green, Mike Clausen
- Steering board: Chris Williams, Peter Batchelor, Ian Williams, Mike Biddle, Myrddin Jones, Donal Bradley, Nick Colaneri, Dave Morton
- Project partners – OMIC, Leeds, and the industrial partners for their excellent project delivery

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