

FIEECE

National Centre for Flexible Electronics



Call for Expression of Interest For Printable Functional Inks

23rd August 2015,

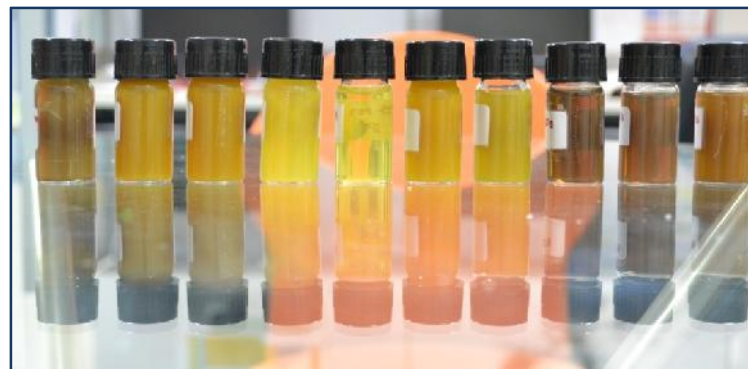


Poly IC



Mekoprint

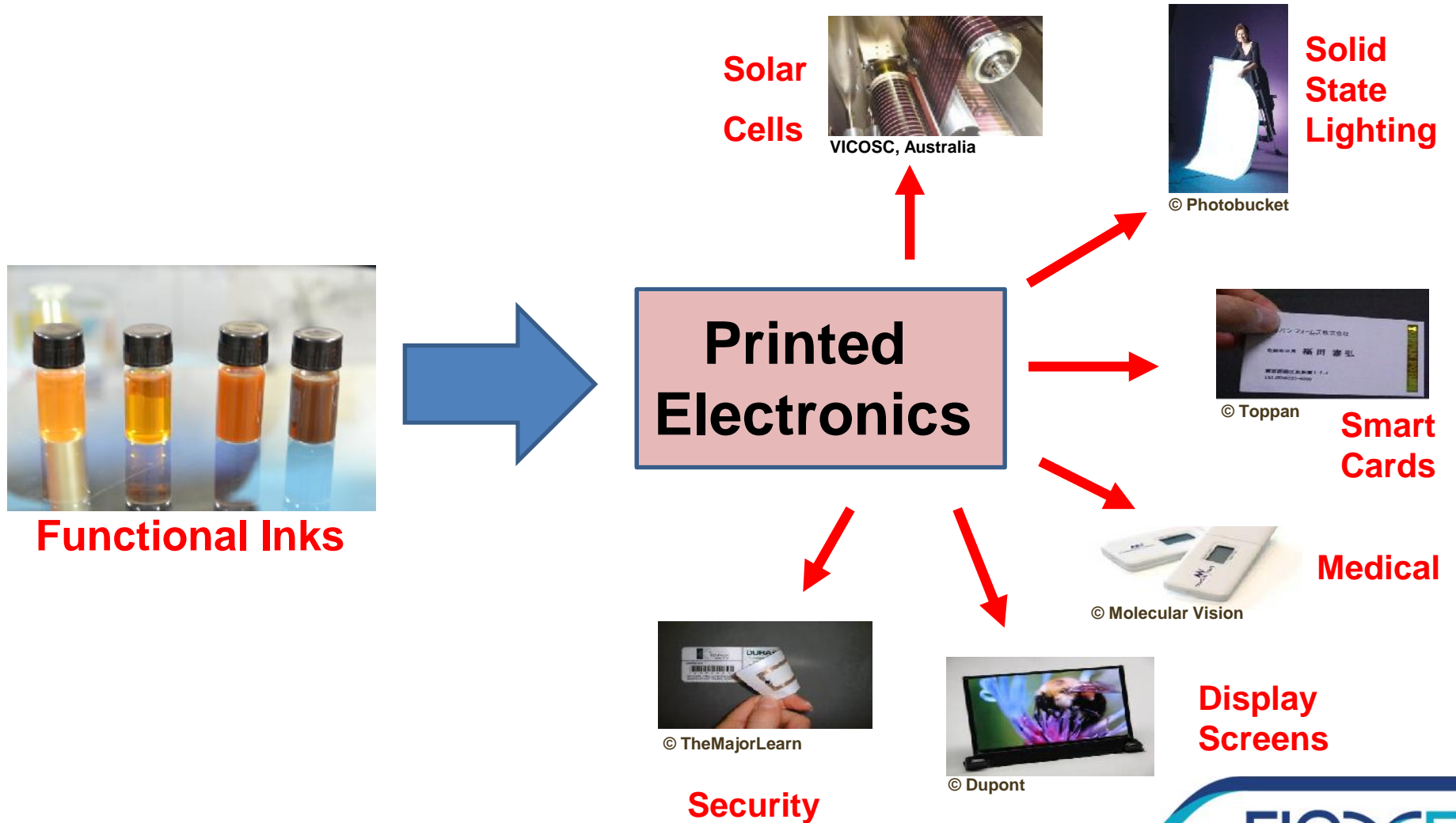
Technology Development for Printable Functional Inks



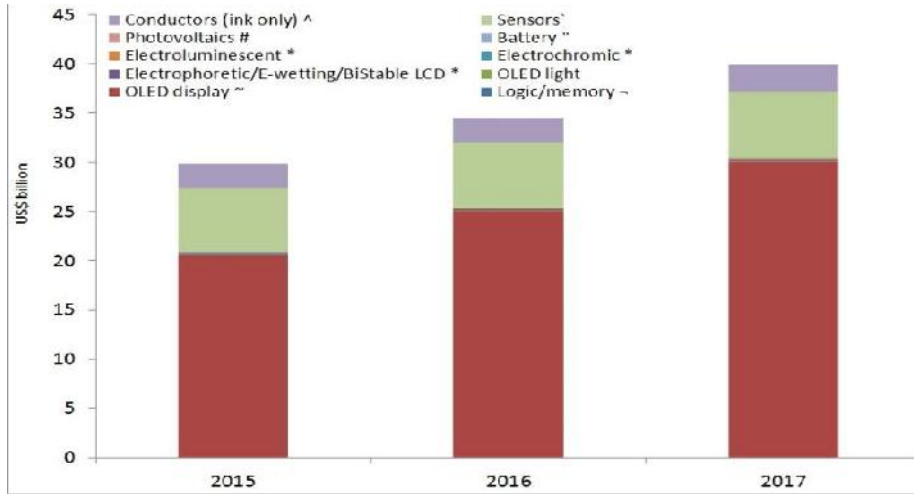
Background

- ✓ Flexible electronics is a new area of electronics which allows us to embed intelligence in form of electronics on paper, textiles, plastic, metal foils.
- ✓ Printed electronics enable the large area electronics at low cost with high throughput
- ✓ The motivation behind the printed electronic is to create large scale manufacturing of disposable electronics in a faster and cheaper way
- ✓ Functional inks are the key enabler for printed electronics

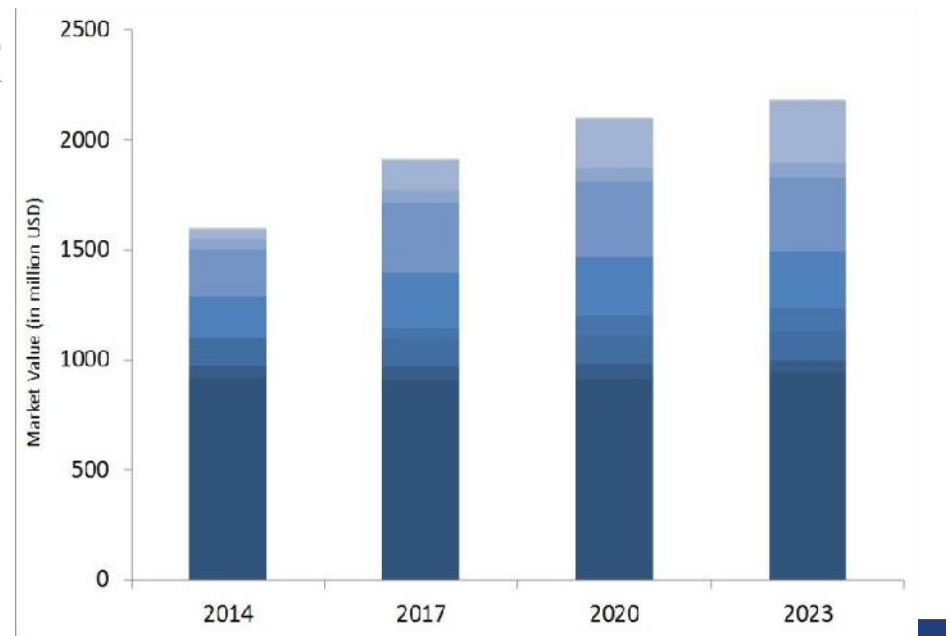
Functional Inks – The Key Enabler



Market Size and Potential (source: IDTechEx)

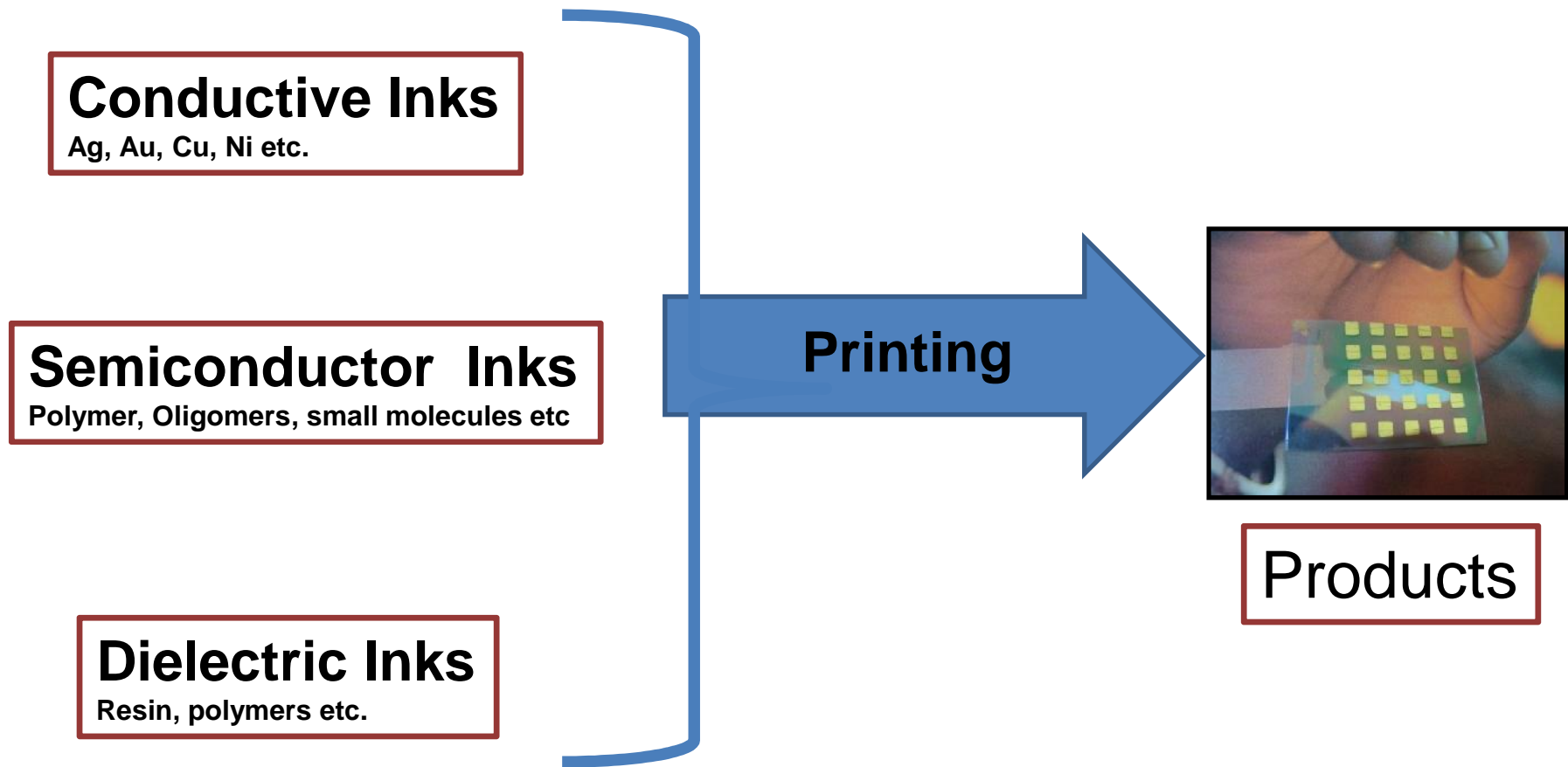


Market size from 2015 to 2025 for printed, flexible and organic electronics will grow from \$29.80 billion in 2015 to \$73.69 billion in 2025.

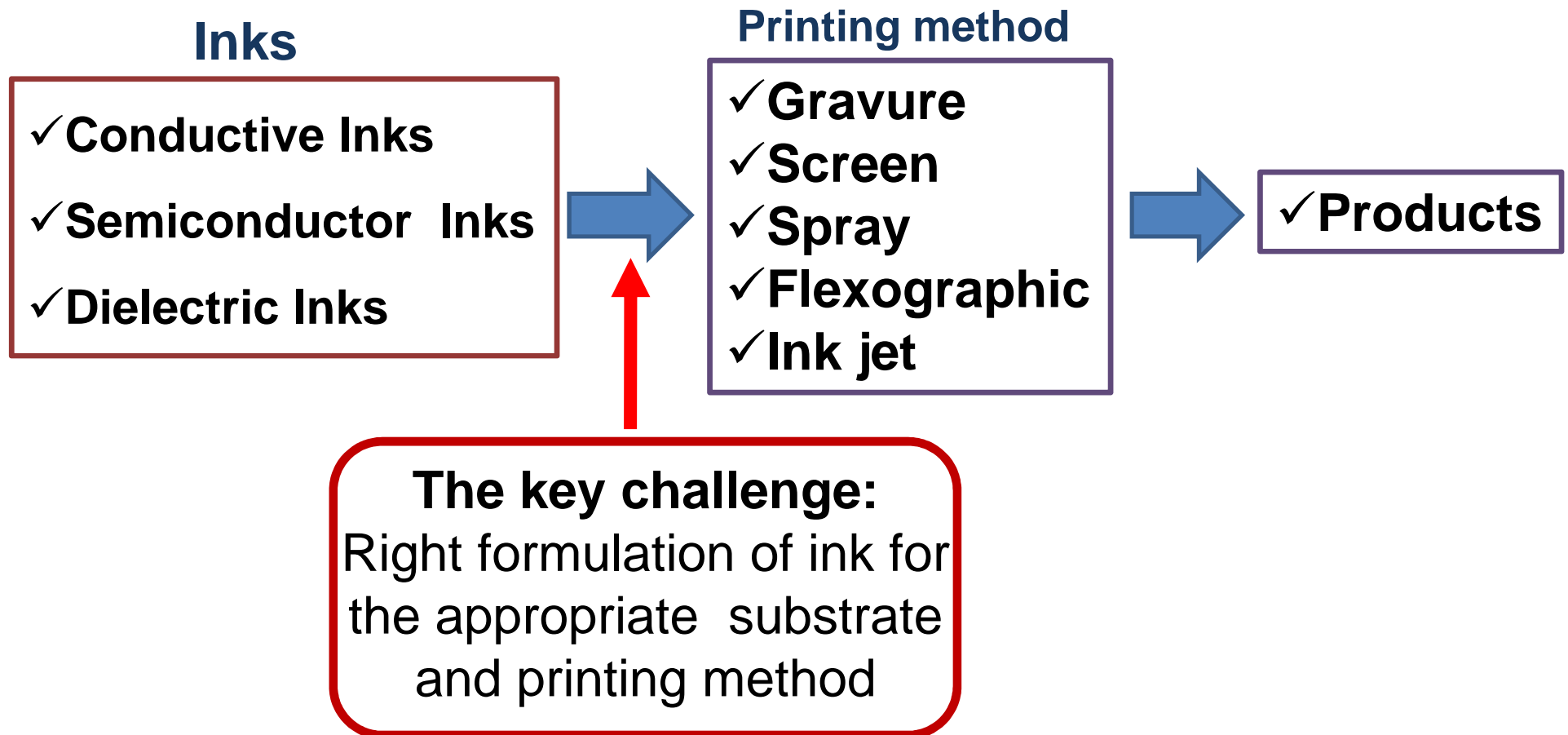


The conductive ink and paste business will generate \$2.2 billion in 2015

Category of Functional Inks



The Challenge



Low processing temperature is suitable for plastics

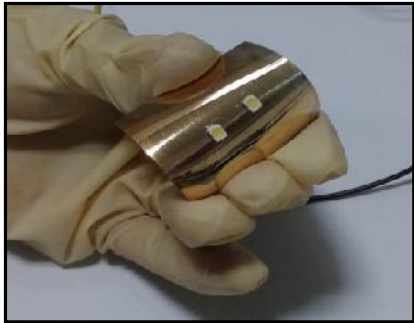
Current Technology Options

- Metal Nanoparticles based inks
- Metal flakes based inks
- Carbon based inks
- Carbon based inks

Key short comings:

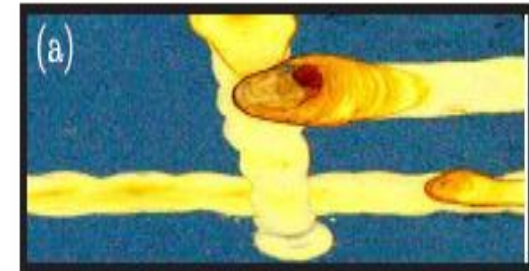
1. Either processing temperature is high
2. Or, Resistivity is high

Conducting Inks for Flexible Electronics



- ✓ Typically metal Nanoparticles dispersions
- ✓ High metal loading on dispersion
- ✓ Stable products with sufficient good shelf life
- ✓ Near room temperature processing for plastics

- ✓ Print on possibly at any substrate at faster rate
- ✓ Good electrical conductivity of printed structure

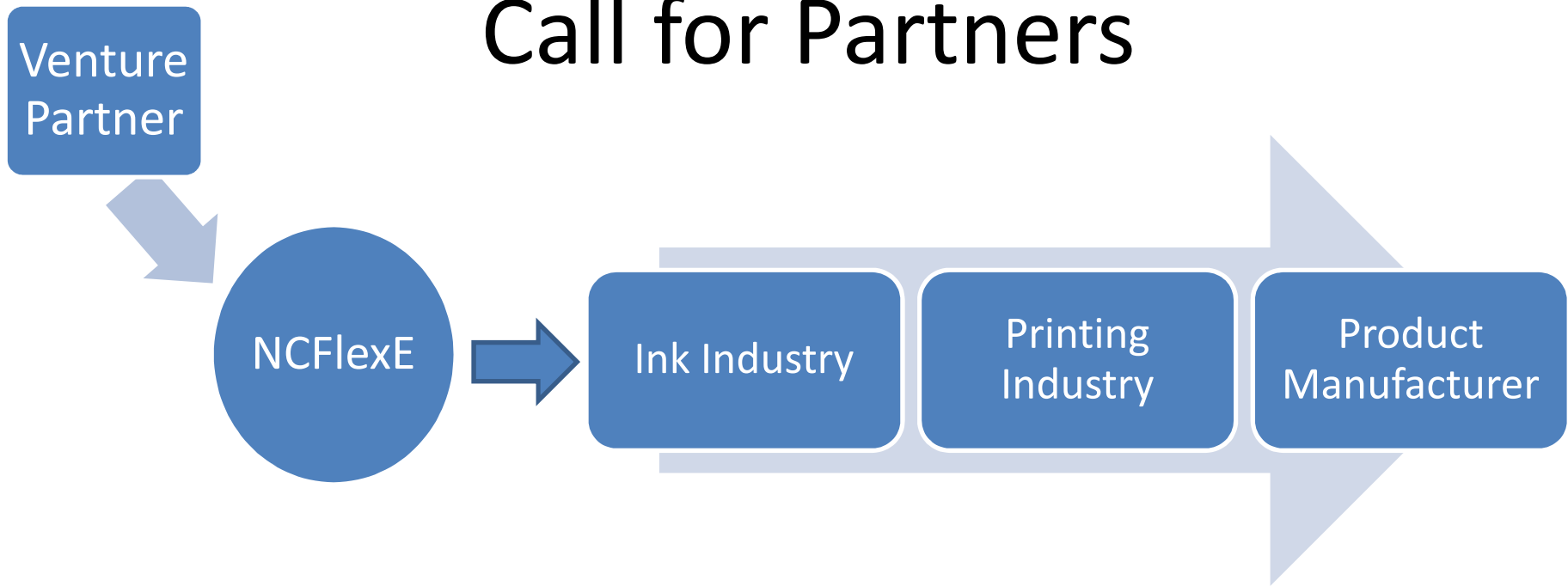


- ✓ Suitable for
Electrodes, Interconnect, Antenna, etc.

Uniqueness of Product

- ✓ Customized proprietary solution as per the customer needs
- ✓ Low cost solution as compare to international market
- ✓ Eco-proprietary solutions
- ✓ Near room temperature process

Call for Partners



- ✓ Our centre is developing a variety of proprietary formulations for the printed electronics industry
- ✓ We are seeking partners across the value chain shown above
- ✓ We are looking for partners to enable the scaling and manufacturability of the developed processes
- ✓ Preferential terms for early partners

Contact Information

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Also visit our webpage for more details on partnership models and other technology domains: www.ncflexe.in