

# Inkron Overview

Inkron is a developer and manufacturer of advanced conductive nano metallization materials, dielectrics, adhesives, optical coatings and encapsulants for IC and LED packaging, OLED and flexible displays and printed electronics industries.

## Technology Platforms

### Siloxane Chemistry

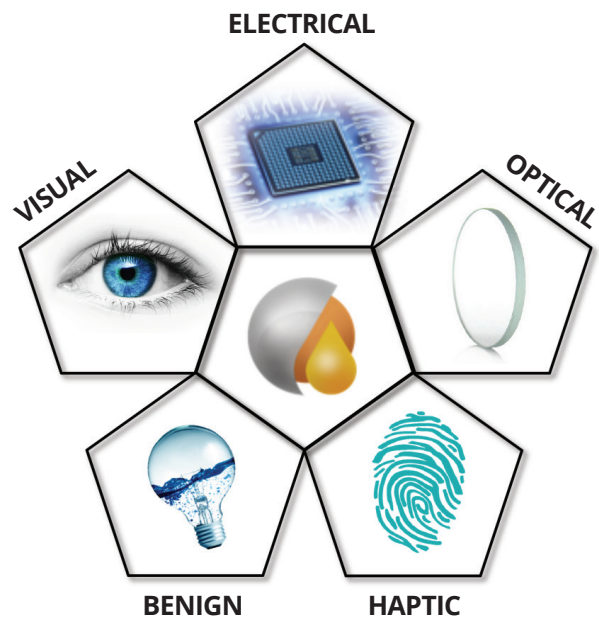
- Custom in-house developed building blocks for siloxane and metal oxide polymers and binders
- Tunable properties for matrix functionalization (for R-groups) and metal oxides (e.g., Ti, Zr, Hf)
- Compatibility for hybridization with epoxies and acrylates
- Alternative cure mechanisms

### Nanoparticles

- Ultra small and siloxane functionalized metal and metal oxide nanoparticles
- Ultra small metal oxides (0.5-3nm)
- Customized for siloxane matrix compatibility

### Formulated Nanomaterials

- Tailoring of proprietary nanoparticle and siloxane compositions
- Solvent free and various solvent systems
- Enhanced product properties via synergic effect, i.e., superior adhesion, thermal conductivity and performance for a range of coating and printing methods



Product family	Description of the product range	Product example	Key merits of the product example
<b>IDA</b>	Die attach and chip adhesive for power IC, Flip-Chip and LED dies.	IDA-125C	Low process temperature, low thermal resistance
		IDA-300	High optical transmission, low thermal resistance
<b>ILE</b>	LED Encapsulation in chip scale and WLP packaging, optical chip and quantum dot passivation.	ILE-198	UV curable solvent free encapsulants with excellent optical barrier properties
		ILE-500	Highest refractive (RI=1.65) encapsulant on the market
<b>IOC</b>	Optical light management materials for OLED, on-cell touch sensors and organic/flexible displays. The broadest refractive index range of the market.	IOC-045	UV curable thick high transparency protector for OLEDs
		IOC-101	Low temperature and highly durable photo patternable dielectric material for on-cell touch
<b>IPC</b>	Printed conductor flexible and conventional substrates compatible with common printing equipment. Metallization paste for novel IC package designs, e.g., SiP and antenna on chip/package.	IPC-114	Solvent free low temperature silver paste for rorganic electronics
		IPC-306	Ultra low cure silver ink for inkjet printing
<b>IPD</b>	Printed dielectrics with range of optical and dielectric functionalities.	IPD-251	High-k dielectric (black or white)
		IPD-350	High optical transmission inkjet printed dielectric

## Die Attach Pastes

Inkron's IDA-series die attach pastes are solvent and void free RoHS compatible one component adhesives. These adhesives feature over two week pot life, high thermal conductivity and high shear strength.

- High die shear strength
- Thin bond lines
- Efficient heat dissipation
- Long pot-life > 2 weeks at 25 °C
- Single component – No mixing

### Additional Benefits

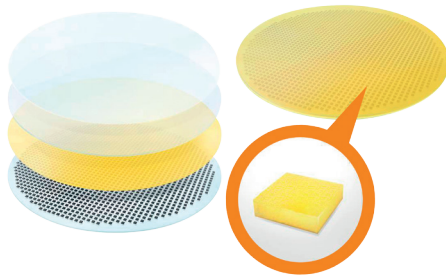
- Solvent free – no voids or shrinkage
- Excellent adhesion
- Shelf life > 6 months at 4 °C



IDA series	Thermal conductivity	Electrical conductivity	Reflectance	Transparency
100	YES	YES	LOW	NO
200	YES	NO	HIGH	NO
300	YES	NO	LOW	HIGH

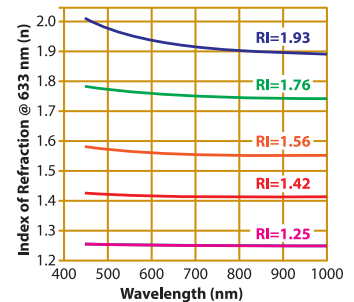
## Optical Encapsulants

- High & tunable refractive index
- Superior barrier properties
- Fast UV or thermal curing
- Optimal for Wafer Level Packaging
- High transparency



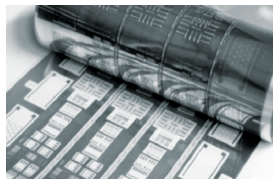
## Optical Coatings and Dielectrics

- Widest refractive index (RI) range on the market
- Low and high dielectric constant
- Excellent thermal stability and non-yellowing
- High optical transmission at visible range



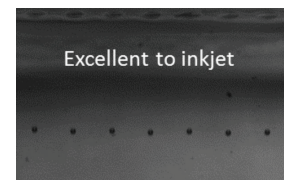
## Printable Conductors

- Inkjettable, sprayable and screen printable conductors
- Both low temperature and UV curable versions
- Solvent free and flexible pastes for printed and wearable electronics; no shrinkage or bleeding



## Printable Dielectrics

- Inkjettable, sprayable and screen printable dielectrics
- Both low temperature and UV curable versions
- Optically clear and solvent free versions
- Tuning of refractive index
- Excellent adhesion with plastics, glass and metals
- Wearables, displays, touchscreens and more



Inkron is a developer and manufacturer of next-generation optical coatings and conductive inks and metallization materials for the optical, semiconductor, printed electronics, touch sensors OLED / LED lighting, and energy storage industries. Our novel cost effective manufacturing process for nano materials, along with our advanced, next-generation polymer chemistry platforms enable the development of a wide range of customized material properties with superior performance advantages in several high-tech applications. © Inkron 2016. Reference version 1\_1.