MIMOS Graphene Conductive Ink (Mi-GraphInk)

A robust and versatile graphene-based conductive ink as a substitute to metal-based conductive ink products for printed electronics, wearables technology and flexible electronics applications.

Overview

MIMOS Mi-GraphInk is a proprietary graphene-based conductive ink technology developed based on the need of the industry as a substitute to the metal-based conductive ink predominantly used in the Electrical & Electronics (E&E) industries at present. The developed graphene-based conductive ink will also enables development of the next generation printed electronics, wearable technology and flexible electronics applications.

Features

Mi-GraphInk comprises the following features:

- **High Conductivity**
  Graphene-based conductive liquid with conductivity comparable to metal-based conductive liquid.
- **Inkjet-Printable**
  Proven jettability on inkjet printing process (based on Dimatix DMP series of cartridge) with viscosity of below 4cP.
- **Nano-Sized**
  Nano-sized conductive elements below 30nm for ease of jetting and reduction in print head clogging.
- **Customisable**
  Can be modified, tuned and tailored to the required needs and specifications.

Technology Benefits

The main impacts of Mi-GraphInk are:

- **Low Cost**
  Reduction in 80% of metal-based elements without compromising the conductivity of the developed ink products. High jettability of the ink ensures that less volume is required to develop conductive film with similar sheet resistance. Quality of the hybridised-graphene used is controlled at a consistent and uniform manner across the solvent.
- **Environmental Sustainability**
  Graphene is a carbon-based nanomaterial which ensures environmental sustainability for bulk usage particularly in the electrical and electronics industries.
- **Enabling Technology**
  Functionalisation of base graphene conductive ink to form new types of conductive ink products can be achieved through process add-ons and the use of proprietary chemical synthesis processes leading to the development of nanosensing materials, conductive interconnects, coatings, flexible electronic platforms and others.

Technology Summary

Mi-GraphInk

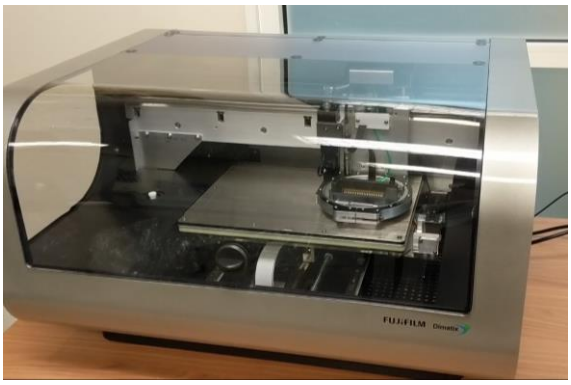
Proprietary graphene-based conductive ink technology with sheet resistance comparable to the conventional metal-based conductive ink to enable the development of the next generation printed electronics, wearable technology and flexible electronics applications.
Industries: E&E industries, SMEs, Government

Features

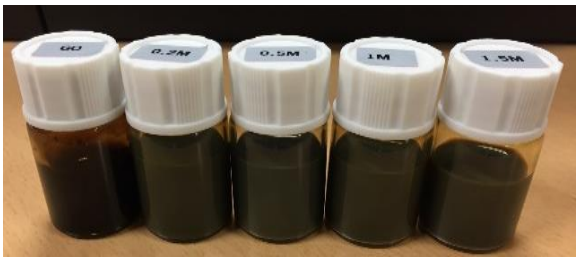
- High conductivity
- Inkjet-printable
- Nano-sized
- Customisable

Technology Benefits

- Low cost
- Environmental sustainability
- Enabling technology



MIMOS conductive ink printer



Mi-GraphInk of different grades

Specifications

Mi-GraphInk	
Description	**Base Specification**
Form	Liquid (dispersion in ethanol, ethylene glycol or DI water)
Particle size	<30nm
Viscosity	≈3.8 cP
Sheet resistance	0.1-0.25Ω/□
Jettability	Inkjet-printable (proven on Dimatix DMP series)