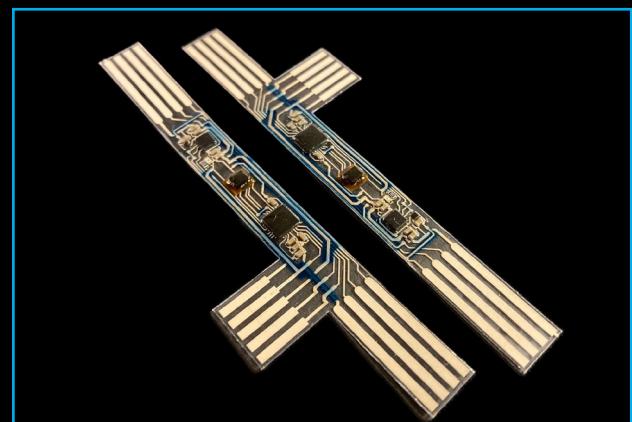
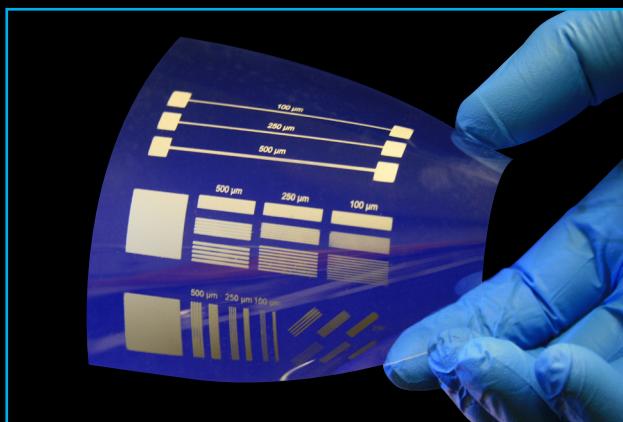


Advanced Materials for Printed Electronics



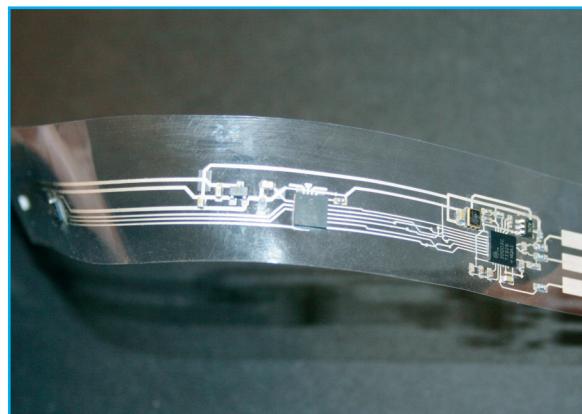
Products and Services Overview

Introduction to the Company

Dycotec Materials is an ISO:9001 certified advanced materials company; our range of printed electronic inks and pastes enable the formation of electronic circuits on rigid, flexible and stretchable substrates including low temperature polymer substrates, FR4, glass and transparent conductive oxide. We sell over 100 printed electronic materials globally from sample to high volume. Samples can be purchased directly from our online shop and are shipped within 5 days. We also supply materials that have been developed specifically to our customer needs. Our experienced technical team predominantly staffed with PhD's in Chemistry and Nanomaterials Development provide a flexible and rapid response for customer developments, employing the IATF standard for Material Development.

At our purpose-built 21,000 ft² Technology Centre in the UK, our materials are subjected to rigorous testing to ensure approval in applications such as wearables, IoT sensors, In-Mold Electronics, solar cell, automotive, aerospace, medical, semiconductor and display, all in close collaboration with our customers.

Furthermore, we work with our customers handling a variety of projects, from proof-of-concept studies and testing suitable material systems to bulk volume material supply.



Product Overview

ADVANCED MATERIALS FOR PRINTED ELECTRONICS							
SILVER CONDUCTIVE	CARBON & GRAPHENE CONDUCTIVE	IN-MOLD ELECTRONICS	STRETCHABLE	BIOSENSOR	TRANSPARENT CONDUCTIVE	INSULATOR & OVERCOAT	COPPER CONDUCTIVE
NANO PASTE 3100 SERIES	LOW TEMP CARBON 4300 SERIES	CARBON 1060 SERIES	SILVER CONDUCTIVE 2000 SERIES	SILVER/ SILVER CHLORIDE 3400 SERIES	INSULATOR 6030 SERIES	DIELECTRIC 7000 SERIES	LIGHT SINTER 5000 SERIES
LOW TEMP 3060 SERIES	CARBON PEROVSKITE 4700 SERIES	DIELECTRIC 1500 SERIES	INSULATORS 2500 SERIES	OVERCOAT 6400 SERIES	CONDUCTIVE 8010 SERIES	UV CURABLE 6000 SERIES	MICRON/NANO HYBRID 5050 SERIES
NANO INKJET 3200 SERIES	FLEXIBLE CARBON 4500 SERIES	FLEXIBLE SILVER 10030 SERIES	SILVER PU 10010 SERIES	SOLID STATE ELECTROLYTE 6100 SERIES		POLYIMIDE 7080 SERIES	
FLEXIBLE 3070 SERIES	NANO CARBON 4600 SERIES	SILVER 1000 SERIES	CARBON CONDUCTIVE 2100 SERIES	CARBON 4400 SERIES			
POLYIMIDE 3080 SERIES	CONDUCTIVE GRAPHENE 9000 SERIES						

Product Range

Product Category	Product Series	Description	Example Applications	Deposition Process
SILVER CONDUCTIVE	DM-SIP-3028	Silver conductive paste	SPD, PDLC, Smart Glass	Screen
	DM-SIP-3060	Silver conductive	Smart Glass, Display	Screen
	DM-SIP-3070	Sliver flexible conductive	Hybrid Electronic, Keyboard, Automotive	Screen
	DM-SIP-3100	Nanosilver paste	Heaters	Screen, Syringe
	DM-SIJ-3200	Nanosilver inkjet	OPV, Display, Sensor	Inkjet
CARBON CONDUCTIVE	DM-CAP-4100	High durability thermoset carbon pastes	Automotive	Screen
	DM-CAP-4200	High wear resistance carbon pastes	Potentiometer	Screen
	DM-CAP-4300	Low temperature thermoset	Sensors	Screen
	DM-CAP-4510	Flexible carbon pastes	Medical, Paper	Screen
	DM-CAP-4700	Carbon pastes for perovskite	Perovskite Solar Cell	Screen, Syringe
	DM-CAI-4600	Nanocarbon conductive	Sensors, Heaters, Solar Cell	Inkjet
IN-MOLD ELECTRONICS	DM-SIP-1000	Silver conductive	Lighting, Sensors, Display, Touchscreen	Screen
	DM-CAP-1060	Carbon conductive	Lighting, Sensors, Display, Touchscreen	Screen
	DM-INS-1500	Cross-over Dielectric	Lighting, Sensors, Display, Touchscreen	Screen
	DM-UFL-16001	Structural adhesive paste	Lighting, Sensors, Display, Touchscreen	Screen
	DM-SAS-10030	Silver flexible conductive	Wearable Devices, Medical, Automotive	Screen, Syringe
STRETCHABLE	DM-SIP-2000	Silver conductive	Wearables, Medical, Automotive	Screen
	DM-CAP-2100	Carbon conductive	Wearables, Medical, Automotive	Screen
	DM-INS-2500	Insulators	Wearables, Medical, Automotive	Screen
	DM-SAS-10010	Silver PU conductive paste	Wearable, IME	Syringe
BIOSENSORS	DM-SIP-3069	Flexible silver epoxy conductive paste	Electrical Termination	Screen
	DM-SIP-3400	Silver/silver chloride	Medical, Agriculture, Wearable, pH, ISE	Screen
	DM-CAP-4400	Hydrophobic carbon pastes	Ion Selective Electrodes	Screen
	DM-CAP-4410	Carbon paste	Electrochemical Sensors	Screen
	DM-OC-6100	Solid state electrolyte	Medical, Agriculture, Wearable, pH, ISE	Screen
	DM-OC-6400	Insulating overcoat	Protective Overcoat for Biosensor	Screen
TRANSPARENT CONDUCTIVE	DM-SNW-8010	Silver conductive	Display, Touchscreen, Heaters	Screen
	DM-OC-6030	High transparency overcoat	Protective Overcoat Transparent Conductive	Screen
INSULATOR	DM-IN-7000	High epoxy content	PV, Display	Inkjet
	DM-IN-7010	UV curable insulator	Membrane Keyboards, Antenna, Automotive	Screen
	DM-IN-7020	Thermally curable insulator	Sensors	Screen
OVERCOAT	DM-OCI-6000	UV curable inks	Sensors, Display	Inkjet
	DM-OC-6020	Thermoset overcoat paste	Automotive	Screen
GRAPHENE CONDUCTIVE	DM-GRA-9000	Single and few layer graphene	Sensors, Heater	Inkjet
	DM-GRA-9100	Carbon/graphene hybrid paste	Sensors, Heater, Automotive	Screen
COPPER CONDUCTIVE	DM-CUI-5000	Light sintered nanocopper inks	PV, Semiconductor	Inkjet
	DM-CUI-5010	Light sintered nanocopper ink	PV, Semiconductor	Aerosol Jetting
	DM-CUI-5050	Micron/Nano copper hybrid pastes	Automotive, Semiconductor, PCB, PV	Screen
	DM-CUI-5180	Nanocopper paste system	Automotive, Semiconductor, PCB, PV	Screen
POLYIMIDE	DM-SIP-3080	Silver polyimide conductor paste	Aerospace, Heaters	Screen
	DM-IN-7080	Polyimide-forming dielectric paste	Aerospace, Heaters	Screen

Tailored Material Service

The evolving landscape of printed electronics, driven by advancements in applications, deposition processes, and the use of flexible and stretchable substrates, often necessitates the development of new materials, as standard products may not be suitable.

We have extensive facilities to develop material sets including:

- Laser Particle Analysis, Scanning Electron Microscopy, Optical Microscopy, Profilometry
- ICP-OES
- Thermogravimetric Analysis, Differential Scanning Calorimetry, Thermo-Mechanical Analysis
- FTIR, UV-VIS and fluorescence spectroscopy
- Suite of electrical and thermal characterisation tools
- Suite of Tensometer and hardness testing tools
- Surface Tensiometers, Contact Angle Analysis

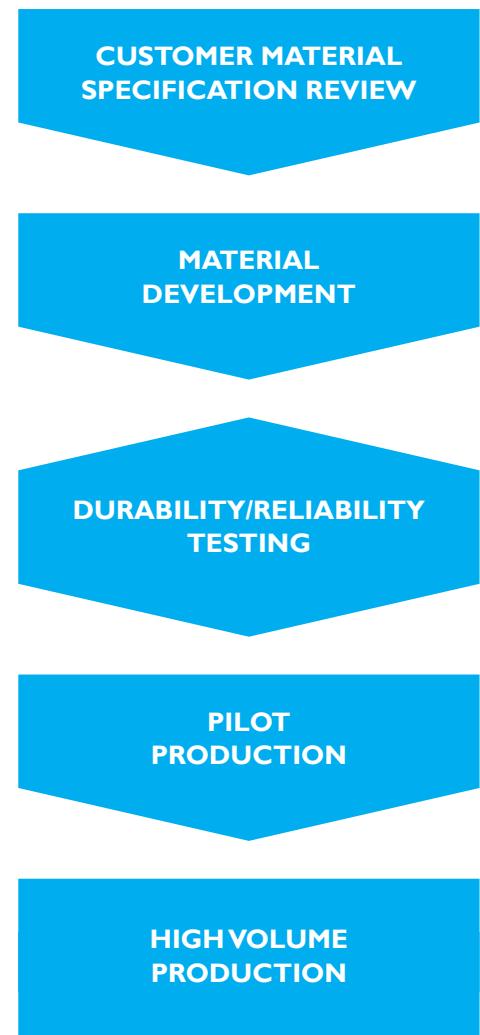
Product Development Services

In many cases, Dycotec produce printed customer demonstrator products. To support our customer product developments, using our advanced materials systems, we have a dedicated process engineering team with a diverse range of skill sets including capabilities in electronics design, 3D CAD design and 3D printing. Fast prototyping lowers risk, speeds up the “printed electronics” learning curve and enables products to be rapidly evaluated, significantly reducing the time to market.

Customer products can be readily prototyped with our extensive range of deposition and processing tools including:

- A range of industrial screen printers and a host of manual printers
- Automated Surface Mount Assembly
- Automated x, y syringe deposition
- Die Placement Tools
- Industrial Inkjet printers
- Automated Spray systems
- Thermoforming
- Lamination
- UV cure, IR, convection and reflow ovens and belt furnaces

Development process



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