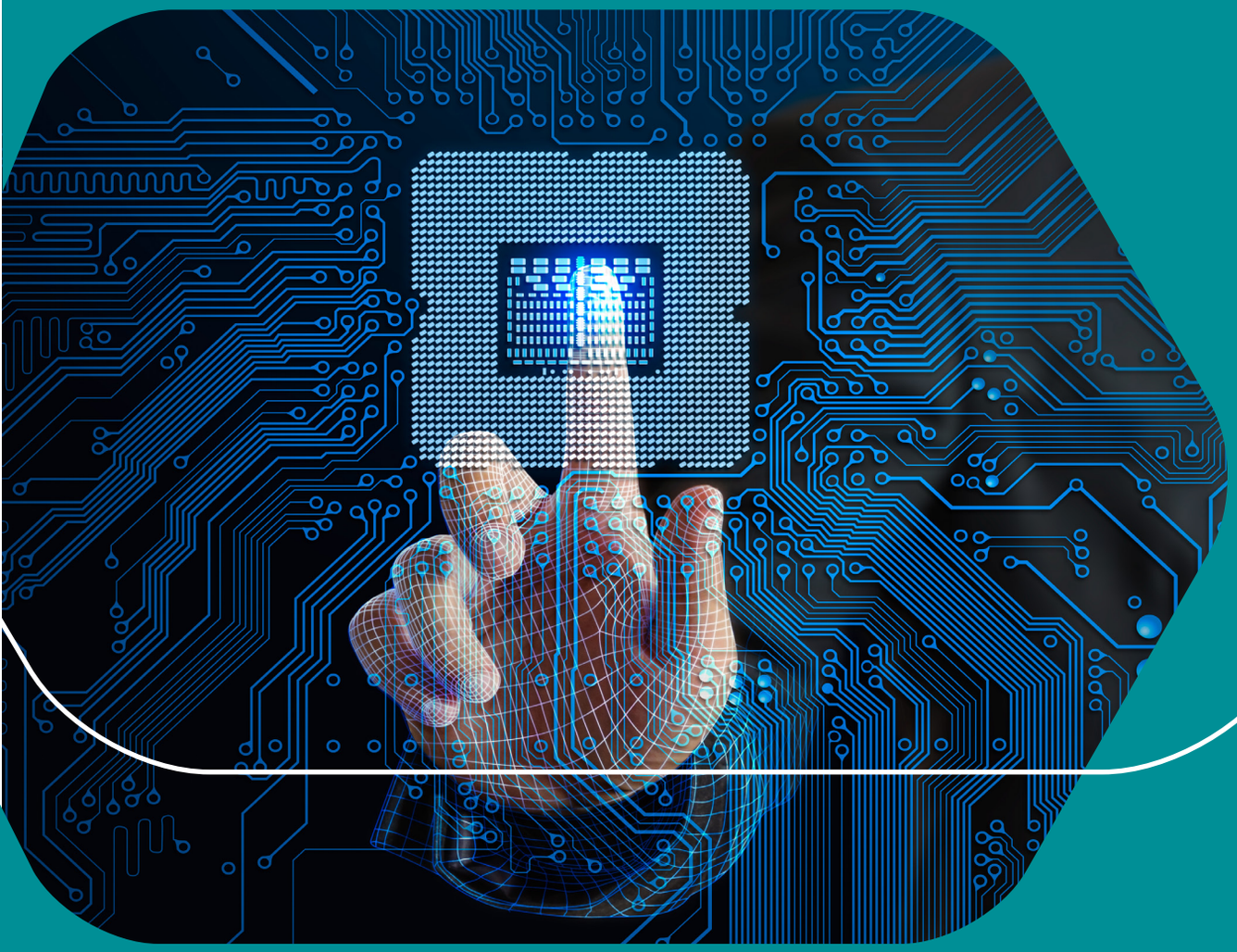
Creating Material Change



Haydale Pressure Sensor Inks

haydale

Innovation underpins everything we do

www.haydale.com HaydaleGraphene

Pressure Sensor Inks

Haydale is a world leader in plasma treatment and functionalisation, specialising in providing bespoke solutions for smart technology applications.

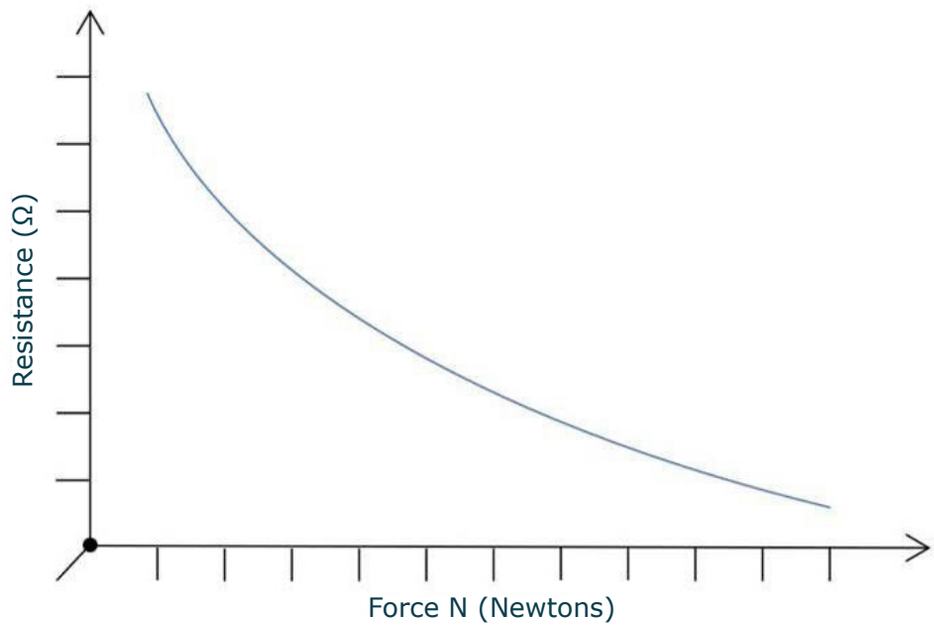
Our pressure sensor inks provide a wide range of applied force measurement capabilities due to our unique way of controlled treatment in our sophisticated plasma reactors. Our patented process allows for a lower cost, scalable, inert and more reliable pressure sensor system for the end users application.

Market sectors:

- Health and recovery
- Sports
- Biomedical
- Security
- Pressure control measurement
- Force sensors
- Automotive

Piezo Sensors

A Piezo sensor is made up of a Piezoresistive ink layer that separates two conductors. When a force is applied, domains within the material are compressed the resistance across the ink decreases. With the removal of the force, the domain's elastically return, and the resistance is restored.



The ink layer contains graphene, functionalised by our environmentally friendly and world leading HDPlas® Process. This enables the dispersion and printing of the advanced nano-materials as well as boosting the inks performance, resilience and sensitivity. The ink acts as an insulator in the parallel axis of the layer, as well as being conductive in the perpendicular axis to the layer. This property allows the piezoresistive layer to be printed as one solid layer over several conductors without causing any short circuiting along the parallel axis between conductors.

When two sheets printed in this way with several conductive strips and assembled at 90-degrees with the piezoresistive ink layers facing each other, a matrix of the conductive strips is created. Each node within the matrix becomes a piezoresistive site, which can be probed and measured by a voltmeter.

This is the fundamental concept behind Haydale's pressure sensor ink formulations to function in a Piezoresistive sensor.

Current Haydale pressure sensor inks:HDPlas® IGSR00002, HDPlas® IGSR00008, HDPlas® IGSR00012

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