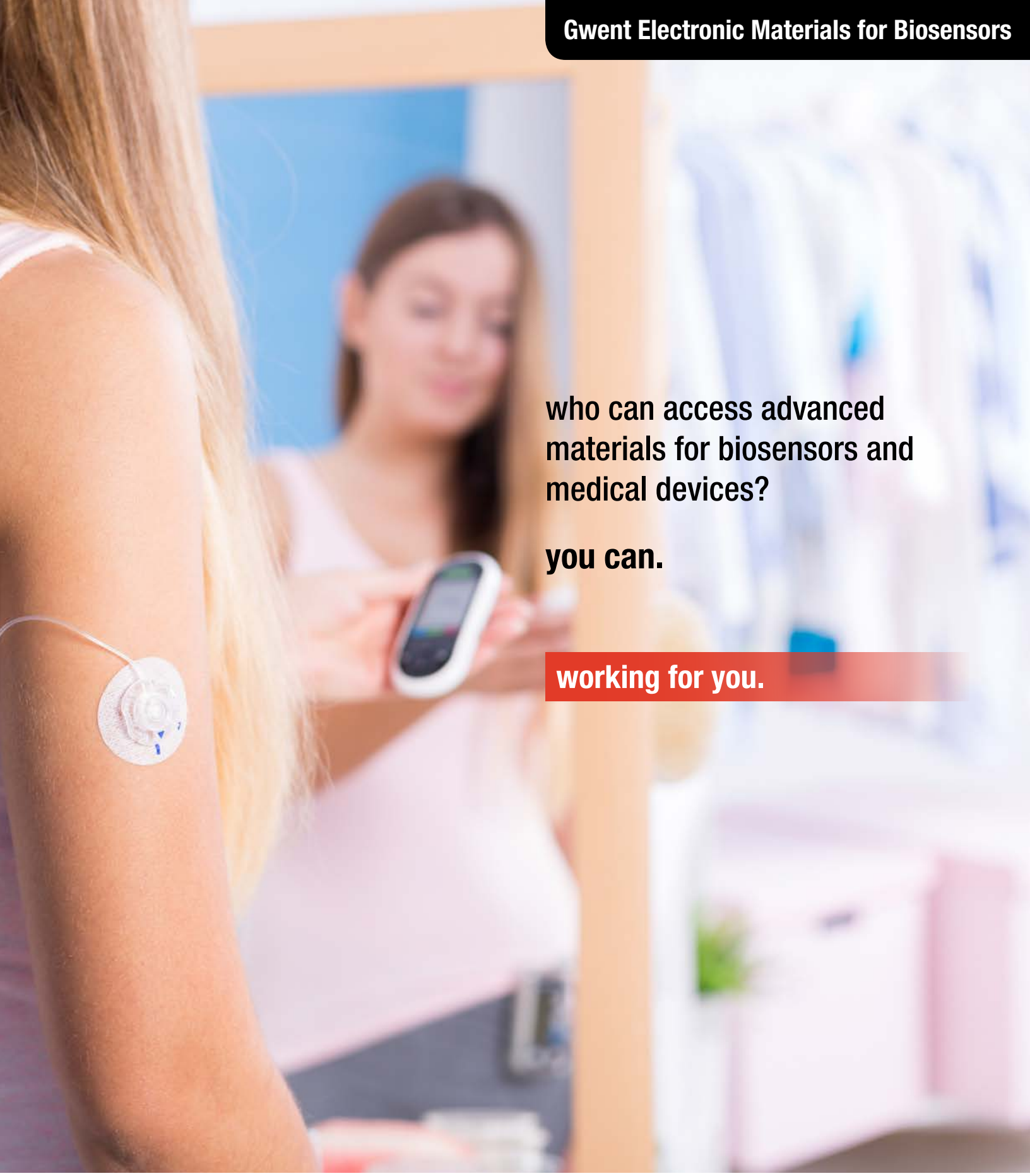

who can access advanced materials for biosensors and medical devices?

you can.

working for you.

SunChemical®
a member of the DIC group
dic Color & Comfort

We offer a range of metallic and carbon inks as well as mediated carbons

Electronic Materials for Biosensors

Sun Chemical Advanced Materials offers a portfolio of Gwent Electronic Materials that are tailor-made for a range of biosensors, including diagnostic sensors, environmental sensors and agricultural sensors.

Available in screen, flexographic and gravure-printable chemistries, Sun Chemical inks and pastes are optimized for sensors in the detection of:

- Alcohol
- Pyruvate
- Glucose
- Sucrose
- Lactate
- Algal toxins
- Mycotoxins
- Organophosphates
- Progesterone
- Cholesterol
- DNA
- Acetyl choline
- Ammonia
- Glutamate

Working/Counter Electrode Materials

Sun Chemical offers a range of unmediated carbons in metalized and non-metalized chemistries that feature superior electrochemical performance and a low co-efficient of variation.

- Our range of metallic and metal-coated carbon inks include low and high temperature materials
- Mediated carbons can be used with different types of enzymes, including Cobalt Phthalocyanine and Prussian Blue, while lowering the oxidation potential when oxidase enzymes producing H2O2 are used

Working/Counter Electrode Materials

Paste Type	Product Code	Compatible Substrates	Primary Applications	Additional notes
Carbon/Graphite	C2000802P2	Alumina, Polyester, PVC, Valox FR1	Used for determination/measurement of electrochemical active components. Can be used for electrochemical sensors and biosensors.	40 Ohms/square at 25 microns
Carbon/Graphite	C2030519P4	Alumina, Polyester, PVC, Valox FR1	Used for determination/measurement of electrochemical active components. Can be used for electrochemical sensors and biosensors.	24 Ohms/square at 25 microns
Cross Linked Carbon/Graphite	C2050517P1	Alumina or other substrates stable at 130°C	Used for determination/measurement of electrochemical active components. Can be used for electrochemical sensors and biosensors.	103 Ohms/square at 25 microns
Carbon/Graphite	GST4500	Films, PET, PC, board stock	High flexibility for printed sensor development	<50 Ohms/square at 25 microns
Carbon/Graphite	GST4600	Films, PET, PC, board stock	Water based system	<50 Ohms/square at 25 microns

Mediated Working/Counter Electrode Materials

Mediated working electrode materials from Sun Chemical are optimized for use on various substrates, including alumina, polyester, PVC, and more. Available in various colors, mediated working electrode materials are ideal for the determination of NADH and hydrogen peroxide.

Mediated Working Electrode Materials

Paste Type	Product Code	Compatible Substrates	Primary Applications	Product Benefits
Meldola's Blue mediated Carbon	C2030519P5	Alumina, Polyester, PVC, Valox FR1	Used in the determination of NADH. Can be used in the development of biosensors in conjunction with NAD+/ NADH based dehydrogenases	Lowers the potential applied for NADH measurements.
Cobalt Phthalocyanine mediated Carbon	C2030408P3	Alumina, Polyester, PVC, Valox FR1	Used in the determination of hydrogen peroxide. Can be used in the development of biosensors in conjunction with oxidases	Used in the determination of hydrogen peroxide at potentials of +0.4V vs. Ag/AgCl
Prussian Blue mediated Carbon	C2070424P2	Alumina, Polyester, PVC, Valox FR1	Used in the determination of hydrogen peroxide. Can be used in the development of biosensors in conjunction with oxidases	Used in the determination of hydrogen peroxide at approx. 0V vs. Ag/AgCl. Suitable for use in flow injection systems.

Gold Electrode Materials

Sun Chemical develops gold electrode materials for electrochemical sensors and biosensors which can be used for self-assembled monolayers in enzymatic biosensors. Gold electrode materials from Sun Chemical are ideal for immunosensors and available in chemistries with higher conductivity.

Gold Electrode Materials

Paste Type	Product Code	Compatible Substrates	Primary Applications	Product Benefits
Polymeric Gold	C2041206P2	Alumina, Polyester, PVC, Valox FR1	Used for electrochemical sensors and biosensors. Can be used for self- assembled monolayers in enzymatic biosensors, as well as DNA and immuno sensors	Used for immunosensors
High Temperature Gold	C2090908D1	Alumina	Used for electrochemical sensors and biosensors. Can be used for self- assembled monolayers in enzymatic biosensors, as well as DNA and immuno sensors	Higher conductivity gold electrode with low signal to noise ratio; good chemical resistance,has to be printed on high temperature substrates.
Cross Linked Dielectric	D2130510D2	Alumina or other substrates stable at 130 C	Insulative / Passivation layer to determine electrochemical cell surface.	White

Platinum Electrode Materials

Platinum electrode materials from Sun Chemical are available in cross linked polymeric, standard polymeric, and high temperature varieties. Optimized for both high and low temperature substrates, Sun Chemical's platinum electrode materials are engineered for a range of electrochemical sensors and biosensors.

Platinum Electrode Materials

Paste Type	Product Code	Compatible Substrates	Primary Applications	Product Benefits
Cross Linked Polymeric Platinum	C2020322P6	Alumina or other substrates stable at 130°C	Used for electrochemical sensors and biosensors. Can be used to detect Hydrogen peroxide and to develop biosensors based on oxidase type enzymes as well as DNA/Immuno sensors.	Used with polar solvents where low temperature cure is required. Suitable for flow injection applications.
Polymeric Platinum	C2050804P9	Alumina, Polyester, PVC, Valox FR1	Used for electrochemical sensors and biosensors. Can be used to detect Hydrogen peroxide and to develop biosensors based on oxidase type enzymes as well as DNA/Immuno sensors.	Used for electrocatalytic sensors without a need for a mediator.
High Temperature Platinum	C51002P6	Alumina	Used for electrochemical sensors and biosensors. Can be used to detect Hydrogen peroxide and to develop biosensors based on oxidase type enzymes as well as DNA/Immuno sensors.	Used with polar solvents on high temperature substrates. Suitable for flow injection applications.

Solutions. Tailor-Made.™

We deliver solutions that are tailor-made to your needs through our broad portfolio of products and technologies.

Reference Electrode and Counter Electrode Materials

Sun Chemical's range of counter electrode materials includes Carbon, Silver/Silver Chloride, Silver polymer and high-temperature Silver/Silver Chloride; these highly conductive materials are designed to have low resistance as well as a range of response and conductivity properties. Pseudo carbon reference electrode materials are also available

Silver Silver-Chloride Reference Electrode Materials			
Paste Type	Product Code	Compatible Substrates	Primary Applications
Polymeric Silver	C2080415P2	Alumina, Polyester, PVC, Valox FR1	Used for improving the conductivity and making better contacts. Can be used as a highly conductive layer under the carbon layer.
Polymeric Silver	C2081126P2	Alumina, Polyester, PVC, Valox FR1	Used for improving the conductivity and making better contacts. Can be used as a highly conductive layer under the carbon layer.
Silver/Silver Chloride (60:40)	C2130809D5	Alumina, Polyester, PVC, Valox FR1	Used as a reference electrode.
PTF Silver	AST6400	Alumina, Polyester, PVC, Valox FR1	Used for improving the conductivity and making better contacts. Elastic at room temperature.
Nanosilver	NST6800	Alumina, Polyester, PVC, Valox FR1	Used for improving the conductivity and making better contacts. Highly conductive fine line print capable.

Dielectric/Insulation Electrode Materials

Dielectric/Insulation Electrode Materials from Sun Chemical can be used to define the working electrode area or to isolate a sensitive part of the circuit and minimize the pin-holing effect.

Dielectric/Insulation Electrode Materials					
Paste Type	Product Code	Compatible Substrates	Primary Applications	Additional Notes	Product Benefits
Grey Dielectric	D2070423P5	Alumina, Polyester, PVC, Valox FR1	Insulative / Passivation layer to determine electrochemical cell surface.	Grey	Most popular dielectric. Flexible.
Green Dielectric	D2070412P3	Alumina, Polyester, PVC, Valox FR1	Insulative / Passivation layer to determine electrochemical cell surface.	Green	Flexible.
Green Dielectric	D2081009D6	Alumina, Polyester, PVC, Valox FR1	Insulative / Passivation layer to determine electrochemical cell surface.	Green, transparent	Transparent.
Blue Dielectric	D2071120P1	Alumina, Polyester, PVC, Valox FR1	Insulative / Passivation layer to determine electrochemical cell surface.	Blue	Flexible.
Cross Linked Dielectric	D2130510D2	Alumina or other substrates stable at 130 C	Insulative / Passivation layer to determine electrochemical cell surface.	White	Flexible resistant to chemical solvents. Suitable for flow injection applications.

A partner who transforms with you.

Today's environment requires more than change. It demands transformation — and a partner who's willing to transform with you. Sun Chemical, a member of the DIC group, is a leading producer of printing inks, coatings and supplies, pigments, polymers, liquid compounds, solid compounds, and application materials. Together with DIC, Sun Chemical has over 20,000 employees located at 176 subsidiaries across 63 countries working every day to meet the needs of customers by improving performance on the essentials of business, such as reliable, on-time delivery and consistent product quality. Sun Chemical tailors solutions to unique customer needs and brings new ideas and the latest technology to market. As you move forward into a world of stiffer competition, faster turnarounds, more complex demands and sustainable products, count on Sun Chemical to be your partner.

working for you.

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