



SOLARONIX MATERIALS

Supplier of specialty chemicals and materials,
Licensee of EPFL for Dye Solar Cell technology since 1994,
we deliver the components used for Hybrid and Dye Solar Cell
fabrication to researchers and industries worldwide.

INNOVATIVE SOLUTIONS FOR SOLAR PROFESSIONALS

SPECIALTY MATERIALS

Ever since the beginning at Soloronix, an important part of the business has been devoted to the production of the key materials required for Hybrid and Dye Solar Cell fabrication processes. Thanks to a diverse portfolio of specialty chemicals and components, Soloronix supports innovation in new photovoltaic technologies, and turns scientific progress into readily available products.

Since 1996, the company delivers high quality ingredients to research centers involved in Hybrid and Dye Solar Cell technology around the world; academic laboratories or pioneering technological enterprises. Our products are available in tailored quantities for both research and industry, and we continually scale-up and introduce new products to sustain the market's growing demand.

Our specialists are developing and producing Soloronix' compounds on the premises. We use proven and genuine recipes to make specialty chemicals of the highest quality, meeting the requirements of high technology.

CHEMICALS AND COMPONENTS

Our catalog encompasses all the ingredients for Dye Solar Cells, as well as products for the fabrication of other Hybrid Organic-Inorganic Solar Cells such as Perovskite Solar Cells:

- titanium dioxide nanoparticle pastes,
- zirconium dioxide and nickel oxide pastes.
- ruthenium dyes and organic photo-sensitizers,
- perovskite precursors,
- solvent-based electrolytes,
- non-volatile electrolytes,
- hole transport materials,
- ionic liquids,
- platinum catalyst precursors,
- sealing materials,
- transparent and conductive substrates.

Soloronix is an EPFL Sun2 license owner since 1994 and enjoys a privileged relationship with the LPI laboratory, led by Prof. Michael Grätzel, father of Dye Solar Cell technology.

Our team contributes to several scientific projects and brings its know-how to support research progress. For example, we are active in european research and development projects such as Orion (ionic liquid improvement), Adios-Ru (replacement of ruthenium dyes), Artiphyction (solar hydrogen production), Cronos (modeling of DSCs) and SETNanoMetro (titania standardization).

Successful past projects include Innovasol, Solamon, EuroPSB, Napolyde, Fullspectrum and Lots DSC to name a few. Overall, these attributes ensure our strong connection with academia and technological pioneers.

SOLAR CELL KITS

In addition to individual ingredients, Soloronix provides complete sets of components to help experimenters accelerate their work:

- Perovskite Solar Cell kits,
- Test Cell Kits (laboratory Dye Solar Cells),
- Education Cell Kits (training and teaching Dye Solar Cells),
- Demonstration Cell Kits (large area Dye Solar Cells).

PEROVSKITE CELL COMPONENTS

In the past few years, major breakthroughs branched solid-state Dye Solar Cell research to a new approach using organo-lead halide perovskite light absorbers.

Since then, Soloronix investigated Perovskite Solar Cell technology and worked on supplying researchers with the corresponding new materials and components.

Our customers can now benefit from the latest innovations in the field of Perovskite Solar Cells with our specifically designed titania pastes, perovskite light absorber precursor, and hole transport material.

LEAD-IODIDE PEROVSKITE PRECURSOR

Methylamonium Iodide **NEW**

Use Soloronix' methylamonium iodide in conjunction with lead halides to prepare your perovskite-based solar cells. Suitable for two step processes.

HOLE TRANSPORT MATERIAL

Spiro-OMeTAD **NEW**

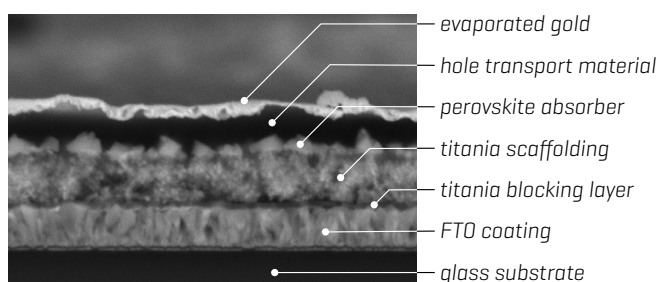
Spiro-OMeTAD is the hole transport material of choice for solid-state Dye Solar Cells and Perovskite Solar Cells.



Perovskite Cell Kit



We are also introducing the Perovskite Cell Kit, a whole new set containing ready-to-use solid-state electrodes with different stages of layering [p. 14].



Cross-section of a Perovskite Solar Cell [SEM image]

BLOCKING LAYER TITANIA PASTE

Ti-Nanoxide BL/SP **NEW**

A screen-printable paste aimed at the deposition of a thin and dense, pinhole-free layer of titanium dioxide. Such a blocking-layer will prevent the hole transport material or the perovskite to directly enter in contact with the conductive substrate. Also suitable for solid-state Dye Solar Cells.

Printing with a 90-48 polyester mesh screen yields a 50 nm thick, dense TiO₂ layer after firing at 550°C.

SCAFFOLDING LAYER TITANIA PASTES

Ti-Nanoxide T600/SP **NEW**

Titania paste containing 15-20 nm titanium dioxide anatase particles. Printing with a 61-64 polyester mesh yields a ~600 nm thick layer after sintering at 475°C. Several prints can be stacked to control titania layer thickness incrementally.

Ti-Nanoxide T300/SP **NEW**

Titania paste containing 15-20 nm titanium dioxide anatase particles. Printing with a 61-64 polyester mesh typically yields a ~300 nm thick layer after sintering at 475°C. Several prints can be stacked to control titania layer thickness incrementally.

TITANIUM DIOXIDE PASTES

Ti-Nanoxide

Titanium Dioxide Pastes

The Soloronix Ti-Nanoxide products are a family of formulations of titanium dioxide particles. They can be used for the fabrication of photo-electrodes and are perfectly suited for Dye Solar Cell applications.

In Dye Solar Cells, the photo-anodes consist of a mesoporous layer of titanium dioxide nano-particles. The resulting layer can be stained with one of our premium sensitizing dyes to complete the Dye Solar Cell photo-anodes.

The formulations of our products have been developed over 15 years utilizing close interaction with customers. This has led to the most comprehensive offering of titanium nano-particle pastes available. We use proven in-house fabrication processes that proudly continue to serve research and industrial uses.

Soloronix' nano-particle manufacturing allows us to precisely control crystal growth and anatase phase selectivity. We produce targeted particle sizes which enable us to tune the transparency of the resulting titanium dioxide layers. This flexibility permits the fabrication of either transparent, or diffusing [opaque] electrode designs. Tunable appearance is a particularly interesting feature of Dye Solar Cells, and the Ti-Nanoxide products aid in exploiting that feature.

Since we also make advanced Dye Solar Cells and modules, we are the experts in the field when it comes to titania particles and titania formulations.

Below is an excerpt of the recommended and most frequently used Ti-Nanoxide products.

TRANSPARENT ACTIVE LAYER

Ti-Nanoxide T/SP

Highly dispersed titania nano-particle paste for the deposition of transparent active mesoporous layers.

The sintered films feature a very high surface area ensuring efficient dye loading.

REFLECTIVE ADD-ON LAYER

Ti-Nanoxide R/SP

Large titania particle paste for the deposition of a reflective layer atop pre-existing layers.

The reflective sintered layer enhances light absorption of the underneath mesoporous active layers.

DIFFUSING ACTIVE LAYER

Ti-Nanoxide D/SP

Mixed titania particle paste for the deposition of active opaque titania layers in one material.

The optimal mixing of large and small nano-particles ensures both very high surface area and light diffusion.

MACRO-CHANNELED ACTIVE LAYER

Ti-Nanoxide MC/SP **NEW**

Advanced formulation titania paste forming macro-channeled active opaque layers.

The tubular structure allows for better electrolyte penetration when using viscous or ionic liquid based electrolytes.

MORE TI-NANOXIDE FORMULATIONS

Expert users will find additional Ti-Nanoxide products specifically formulated for other deposition techniques such as spin-coating.

All of the above Ti-Nanoxide products are suitable for screen-printing and slot-coating [doctor-blade].

Printing with a 61-64 polyester mesh yields a ~4 µm thick layer after sintering at 475°C for 30 min. Several prints can be stacked to control titania layer thickness incrementally.

OXIDE PASTES

Zr-Nanoxide

Zirconium Dioxide Paste

Monolithic Dye Solar Cells assemblies are obtained by stacking titania [anode], zirconia [insulating] and conductive carbon [cathode] layers on a single substrate.

Our product Zr-Nanoxide Z/SP is precisely targeted for the assembly of monolithic Dye Solar Cells and monolithic Perovskite Solar Cells.

FOR MONOLITHIC ASSEMBLIES

Zr-Nanoxide Z/SP

A printable zirconium oxide paste that forms a porous and electrically insulating layer after firing at 475°C. The resulting layer is opaque white and exhibits minimal dye uptake. Titania staining can even be realized in the presence of the zirconia and carbon layers thanks to their porous structures which allows the dye solution to penetrate. Suitable for screen-printing or slot-coating [doctor-blade].

Labware Items

The best products deserve the right tools. We also offer our customers a selection of spatulas, tweezers, staining boxes, and similar items especially adapted to our products.

Ni-Nanoxide

Nickel Oxide Paste

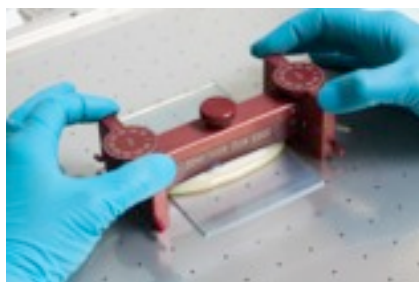
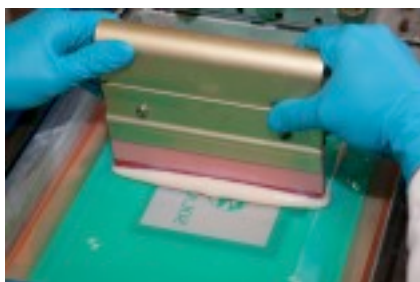
Nickel oxide is a *p*-type semiconductor that can be used to prepare photo-cathodes. Dye-sensitized photo-cathodes operate in a reverse mode compared with conventional Dye Solar Cells. The electron cascade occurs from the excited dye to the oxidized species of the electrolyte, and from the *p*-type semiconductor valence band to the ground level of the sensitizer.

Together with *n*-type semiconductor pastes like our Ti-Nanoxide products, it is possible to fabricate tandem *p/n*-type Dye Solar Cells with efficiencies equal or superior to conventional *n*-type DSCs.

FOR REVERSE-TYPE DYE SOLAR CELLS

Ni-Nanoxide N/SP **NEW**

The first commercially available nickel oxide nano-particle paste to facilitate the development of highly efficient *p*-type Dye Solar Cells. Ni-Nanoxide N/SP is suited for the deposition of NiO layers by screen-printing or slot-coating [doctor-blade]. After firing at 300°C, the paste forms a mesoporous layer of NiO with a semi-transparent grey appearance.



RUTHENIUM DYES

Ruthenizer

Ruthenium Photo-Sensitizers

The Ruthenizer product line is composed of the very best ruthenium-based sensitizers. These dyes are especially suited for the sensitization of wide band-gap semiconductors, like titanium dioxide in Dye Solar Cells.

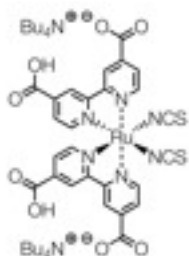
Our product family features all the acclaimed compounds of the Dye Solar Cell community along with additional ruthenium dyes suited for various sorts of photochemical experiments.

As a material supplier, Solaronix is committed to demonstrating the performance of our products. For this reason, we test all of our production batches in real Dye Solar Cells, made in-house, to guarantee the photovoltaic performance that our customers deserve.

With over 15 years of synthetic and purification experience, we are able to deliver premium quality sensitizing dyes for solar cell applications. They are available in tailored quantities for research and development, as well as bulk quantities for industry.

Being the one-stop-shop for Dye Solar Cell materials, we also supply staining additives for use in conjunction with sensitizing dyes. For instance, chenodeoxycholic acid is a proven compound for enhancing photovoltaic performances in the presence of ruthenium dyes.

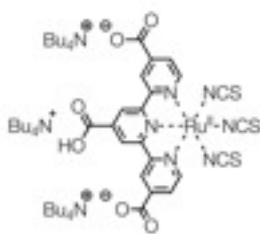
HIGH PERFORMANCE RUTHENIUM DYES



Ruthenizer 535-bisTBA
[N719]

One of the best ruthenium dye for the sensitization of titanium dioxide in Dye Solar Cells, the industry standard. Ruthenizer 535-bisTBA is also known as N719 in the literature.

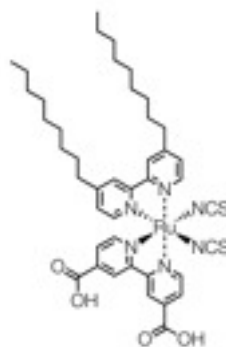
Ruthenizer 535 [N3], its fully protonated analog, is also available.



Ruthenizer 620-1H3TBA
[N749]

The most widely used pan-chromatic dye, also known as N749 or "black dye" in the literature.

Ruthenizer 620-1H3TBA sensitizes titanium dioxide up to a wavelength of 920 nm.

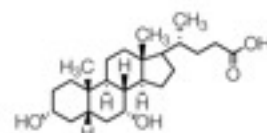


Ruthenizer 520-DN
[Z907]

The original amphiphilic ruthenium dye for the sensitization of titanium dioxide in Dye Solar Cells, also known as Z907 in the literature.

Notably demonstrated excellent stability of Dye Solar Cells.

STAINING ADDITIVE



Chenodeoxycholic Acid
[staining additive]

To be used as an additive in staining solutions together with sensitizing dyes, particularly our ruthenium dyes. The resulting electrodes can yield significant improvements to photovoltaic performances.

ORGANIC DYES

Sensitizer

Purely Organic Photo-Sensitizers

Solaronix continues to commit much effort to the development of enhanced molecules and better processes.

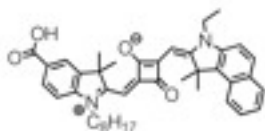
Our offer of photo-sensitizers now extends to purely organic dyes. The Sensitizer products bring alternatives to ruthenium pigments, and new pigments dedicated to solid-state Dye Solar Cells.



FOR CONVENTIONAL DYE SOLAR CELLS

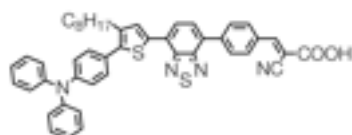
Sensitizer SQ2 [green]

A purely organic pigment for Dye Solar Cells, Sensitizer SQ2 gives a striking vivid green color to stained electrodes.



Sensitizer RK1 [orange]

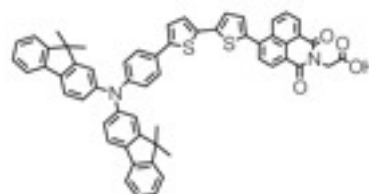
A remarkably high performance purely organic pigment for Dye Solar Cells, Sensitizer RK1 gives a bright orange color to stained electrodes.



FOR SOLID-STATE DYE SOLAR CELLS

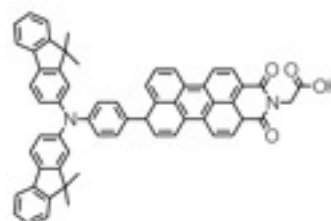
Sensitizer BA741

Organic sensitizer for solid-state Dye Solar Cells.



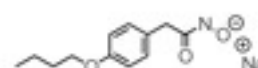
Sensitizer BA504

Organic sensitizer for solid-state Dye Solar Cells.



Sodium Hydroxamate BA662 [staining additive]

Sodium Hydroxamate BA662 is a staining additive specifically suited for Sensitizer BA504.



SOLVENT-BASED ELECTROLYTES

Iodolyte

Solvent-Based Electrolytes

The space between electrodes in Dye Solar Cells is filled with an electrolyte. Our Iodolyte products are a range of ready-to-use electrolytes for this application. Their composition is based on the iodide/tri-iodide redox couple, which has been proven to perform the best in Dye Solar Cells. The composition of all Iodolyte electrolytes were carefully developed with state-of-the-art additives to ensure excellent Dye Solar Cell performance and durability.

What's more, the Iodolyte products are fully compatible with our Meltonix sealing films. These hot melt films provide

a discrete confinement of the electrolyte between glass electrodes.

Ready to experiment with your own formulations? Have a look at our solar-grade ionic liquids. They may be used either as additives, or as solvent replacement in your electrolytes.

All of our Iodolyte products are available in bulk quantities for industrial purpose. Inquiries are welcome.

HIGH PERFORMANCE ELECTROLYTE

Iodolyte HI-30

A 30 mM iodide/tri-iodide electrolyte formulated using a low viscosity solvent for maximum performance.

It is typically employed for high performance Dye Solar Cells, and for establishing reference samples when studying new compounds.

HIGH STABILITY ELECTROLYTE

Iodolyte Z-150

A 150 mM iodide/tri-iodide electrolyte formulated with a higher boiling point solvent which makes it suitable for long term stability assessments.

Also available in 50 mM and 100 mM redox concentrations, they all come with optimized formulations for best solar cell durability.

MORE IODOLYTE ELECTROLYTES

Expert users will find additional solvent-based electrolytes from the Iodolyte product line on our webshop.

Vac'n'Fill Syringe



The Vac'n'Fill Syringe is an easy to use device for making a vacuum in a solar cell cavity and back filling the cavity with a liquid electrolyte.

NON-VOLATILE ELECTROLYTES

Mosalyte

Non-Volatile Electrolytes

Solaronix strives to stay at the cutting edge of solvent-free electrolyte development. The Mosalyte product line provides non-volatile electrolyte formulations based on ionic liquids. These innovative electrolytes demonstrate a negligible vapor pressure that makes them compatible with high temperature and diverse sealing processes.

Our most experienced customers may also enjoy preparing custom ionic liquids mixtures from our IonLic product line presented next page.



HIGH LONGEVITY ELECTROLYTE

Mosalyte TDE-250

A non-volatile iodide/tri-iodide electrolyte formulated for high longevity. Features a mixture of three ionic liquids which demonstrate a low viscosity for optimized mass transport.

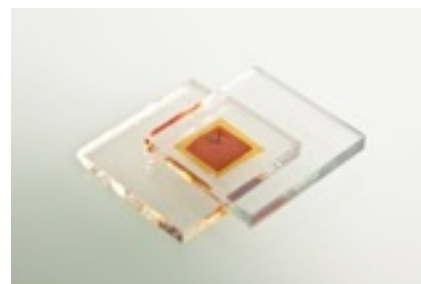
Redox content: iodine / ionic liquid [1/24].

LOW-LIGHT ELECTROLYTE

Mosalyte TDE-025

Benefits from the same formulation, but a with a lower iodine content suitable for low-light applications such as indoors.

Redox content: Iodine / ionic liquid [1/240].



IONIC LIQUIDS

IonLic

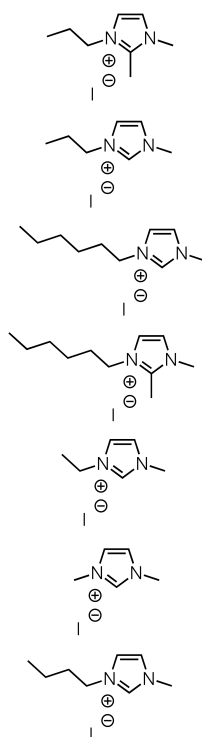
Solar-Grade Ionic Liquids

The IonLic products are a range of ionic liquids for preparing electrolytes. They can be used as additives in solvent-based electrolytes, as well as solvent replacements in non-volatile electrolyte formulations. Since Soloronix makes Dye Solar Cells in-house, the purity of our ionic liquids is specifically targeted for solar cell applications.

Our Iodolyte and Mosalyte electrolytes are taking advantage of the same IonLic components.



IODIDE SALTS



IonLic DMPII 1,2-dimethyl-3-propylimidazolium iodide

IonLic PMII 1-methyl-3-propylimidazolium iodide

IonLic HMII 1-hexyl-3-methylimidazolium iodide

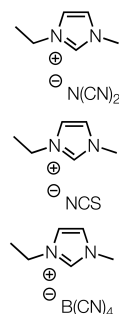
IonLic DMHII 1,2-dimethyl-3-hexylimidazolium iodide

IonLic EMII 1-ethyl-3-methylimidazolium iodide

IonLic DMII 1,3-dimethylimidazolium iodide

IonLic BMII 1-butyl-3-methylimidazolium iodide

MIXED SALTS



IonLic EMIDCA 1-ethyl-3-methylimidazolium dicyanamide

IonLic EMINCS 1-ethyl-3-methylimidazolium thiocyanate

IonLic EMITCB 1-ethyl-3-methylimidazolium tetracyanoborate

PLATINUM CATALYSTS

Platisol

Platinum Catalyst Precursors

The Platisol products are a set of chemical precursors for the deposition of catalytic platinum layers. In most Dye Solar Cells the counter-electrode features a catalytic amount of platinum that greatly enhances electron transfer to the electrolyte. This in turn increases the charge density in the solar cell which directly translates to higher photo-currents and efficiencies.

Our Platisol products are the perfect companion for our Iodolyte iodide-based electrolytes. Platisol comes in 2 formulations, a low viscosity paint for spin coating or brush application and a viscous paste for screen-printing or doctor-blade application. In both cases, the products lead to a quasi-transparent layer of activated platinum after firing at 450°C. The precursor is reduced to a minimal amount of platinum for optimum material usage, while remaining transparent and catalytically active.



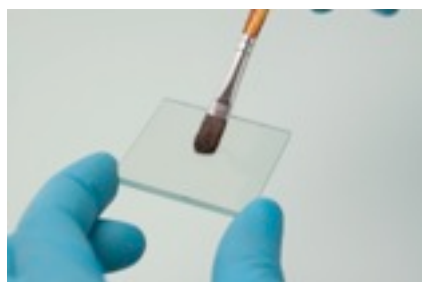
Platinum Coating Service

Our platinum catalyst coating is a very thin layer of platinum perfectly suited for Dye Solar Cell counter-electrodes. It can be applied on heat-resistant customers' substrates like glasses or quartz. Inquires are welcome.

SPIN-COATING OR BRUSH PAINTING

Platisol T

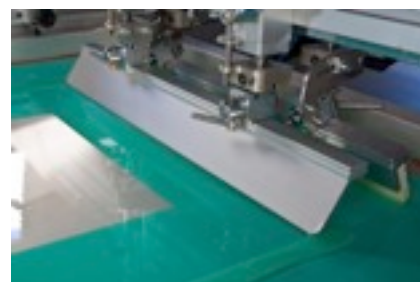
A liquid formulation of platinum precursor for the deposition of a catalytic and quasi-transparent layer of activated platinum after firing at 450°C.



SCREEN-PRINTING OR SLOT-COATING

Platisol T/SP

A viscous formulation of platinum precursor for the deposition of a catalytic and quasi-transparent layer of activated platinum after firing at 450°C.



SEALING MATERIALS

Meltonix

Hot-Melt Sealing Films

Solaronix has assembled a selection of polymer films that are very well adapted to sealing electrodes. These materials demonstrate excellent chemical compatibility with the other components of Hybrid and Dye Solar Cells. The sealing gaskets easily cut from these films will ensure a perfect confinement of the electrolyte in the solar cells after hot press lamination. We have been using Meltonix for over 10 years, proving its stability and durability.

Thicknesses of 25, 60 and 100 microns are available in order to tune the distance between electrodes. The sealing process typically consists of partially melting the gasket onto the electrodes with a hot press. The adhesion of Meltonix on glass substrates is excellent, leading to a fully transparent sealing.



Amosil 4 Secondary Sealing



Use Amosil 4, our dispersed two component sealing system for a supplementary sealing of your Dye Solar Cells in conjunction with the Meltonix products.

		Thickness	Thermoplastic	Sealing Temperature
25 MICRONS	Meltonix 1170-25	25 µm	DuPont Surlyn®	~100°C
	Meltonix 1170-60	60 µm	DuPont Surlyn®	~100°C
60 MICRONS	Meltonix 1162-60	60 µm	DuPont Bynel®	~130°C
100 MICRONS	Meltonix 1170-100	100 µm	DuPont Surlyn®	~100°C

Standard sizes: 30 x 20 cm sheets, or 30 cm wide rolls (per meter)

GLASS SUBSTRATES

TCO

Transparent and Conductive Substrates

Getting the assembly of your solar cells right begins with the proper choice of substrate. Soloronix provides a variety of conductive substrates suitable for Hybrid Solar Cells, Dye Solar Cells, and other photo-electrochemical devices.

Our fluorine-doped tin oxide (FTO) coated glasses ensure optimal adhesion of printed layers, a primary requirement for electrode fabrication. Thanks to their chemical inertness, the coated glass surface can withstand harsh solutions, making it very well adapted to a broad range of experiments.

Several sheet resistivities are available, among the most conductive found on the market today. Furthermore, these glass substrates tolerate high temperature treatments without loss of conductivity.

Our FTO coated glasses come in a variety of thicknesses and sizes to suit all of your needs. Standard sizes are available in stock. If you are not equipped to cut glass, we can even provide custom sizes at incremental costs.



TCO Coating Service

Get a fluorine-doped tin oxide (FTO) transparent and conductive coating on your substrates: ceramics, glasses, quartz, or any heat resistant substrate. Inquiries are welcome.

Glass Cutter



Our glass cutter is perfect for making straight line cuts of the glass substrates presented in our catalog.

		Thickness	Resistivity	Glass Type
3 MM GLASS	TC030-10/LI	3.0 mm	10 ohm/sq.	low-iron sodalime [clearer]
	TC030-8	3.0 mm	8 ohm/sq.	sodalime
2 MM GLASS	TC022-15	2.2 mm	15 ohm/sq.	sodalime
	TC022-7	2.2 mm	7 ohm/sq.	sodalime
1 MM GLASS	TC010-10	1.0 mm	10 ohm/sq.	aluminoborosilicate

Conductive layer: fluorine-doped tin oxide, $\text{SnO}_2:\text{F}$ (FTO)

Standard sizes: 5 x 5 cm, 10 x 10 cm, and 30 x 30 cm

PEROVSKITE CELL KIT



In addition to our chemicals dedicated to Perovskite Solar Cell fabrication, Soloronix is introducing a whole new kit containing ready-to-use electrodes for this novel photovoltaic technology.

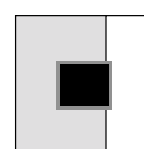
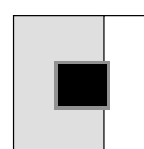
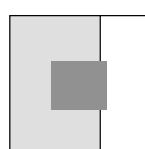
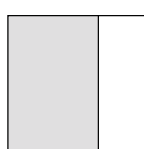
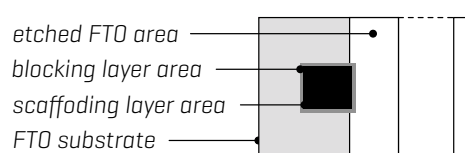
Researchers can now benefit from high quality titania electrodes specifically designed for experimenting with Perovskite Solar Cells.

Electrodes are available at different stages of layering. The kit starts with the simplest etched FTO electrodes allowing for any sort of build-up, and extends to the most sophisticated scaffolding titania electrodes enabling perovskite light absorber investigations straight away.

The latter are conveniently available in either 300 or 600 nm thicknesses, and both feature a TiCl_4 treatment for best performances.

Last but not least, the intermediate blocking-layer titania electrodes conveniently permit to explore setups without or with other sorts of scaffolding materials.

SELECT YOUR ELECTRODES



	Etched FTO	Blocking Layer	Scaffolding Layer [600 nm]	Scaffolding Layer [300 nm]
NEW				
Etched FTO Electrodes, 16 pcs.	✓	-	-	-
Blocking Layer Electrodes, 16 pcs.	✓	✓	-	-
Scaffolding Layer Electrodes, thin, 16 pcs.	✓	✓	✓	-
Scaffolding Layer Electrodes, ultra-thin, 16 pcs.	✓	✓	-	✓

Electrode size: 20 x 20 mm

Active area: 6 x 6 mm

1 kit for 16 cells

TEST CELL KIT

The Test Cell Kit allows experienced users to easily build many high performance test cells with a high degree of reproducibility.

Whether you want to expand your Dye Solar Cell expertise, or completely jump-start your research, the Test Cell Kit removes the barriers and fires up your productivity. For research and development, comparative studies, or high level courses, the Test Cell Kit is specifically tailored for the most demanding activities.

The fruit of intensive hybrid solar cell research at Soloronix and years of optimization, the Test Cell Kit is the perfect match of simplicity of construction, reproducibility, and of course, ease of assembly. With an active area of 6 x 6 mm, your Test Cells won't suffer from the side effects observed with larger surfaces, and will allow you to precisely understand changes.

Take advantage of high quality ready-to-use solar cell parts and focus on your specialty.

- Explore New Compounds : could they be dyes, additives, electrolytes, hole transport materials, or all of the above, you will not have to worry about cell making anymore. Just put your products together with the Test Cell parts.
- Compare and Reproduce: assemble numerous cells quickly and easily, perform comparative studies to obtain reliable results based on multiple samples.
- Make Reference Cells: set the baseline for the rest of your experiments with standard configurations using our commercial chemicals together with the Test Cell components.



Sample Cell

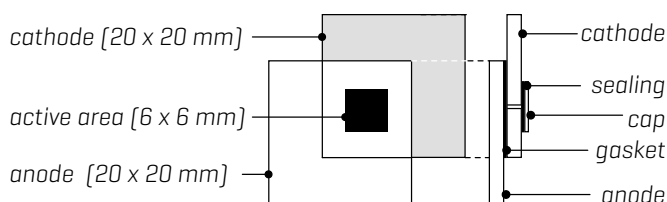
Get a sample cell made with the parts of the Test Cell Kit.



SELECT YOUR TEST CELL KIT

Parts only: for sealed cells, gaskets and sealings included, counter-electrodes coated with platinum and drilled. Dye, additives, and electrolyte at customer's discretion.

Parts and chemicals: same as the above, but all chemicals including dye, staining additive, and electrolyte are conveniently supplied for best performance.



WHAT'S INCLUDED

Test Cell Kit: [for 16 cells]	Parts only	Parts and chemicals
Titania Electrodes, 16 pcs.	✓	✓
Platinum Electrodes, drilled 16 pcs.	✓	✓
Gaskets, 20 pcs.	✓	✓
Sealings, 20 pcs.	✓	✓
Caps, 20 pcs.	✓	✓
Masks, 16 pcs.	✓	✓
Iodolyte HI-30, 3 mL	-	✓
Ruthenizer 535-bisTBA, 20 mg	-	✓
Chenodeoxycholic Acid, 80 mg	-	✓

SPARE PARTS

All of the spare parts of the Test Cell Kit can be also purchased separately.

EDUCATION CELL KIT



The Education Cell Kit is specifically designed to fit in educational budgets.

Dye Solar Cell technology can be a fantastic topic for training courses. With that goal in mind, the Education Cell Kit was designed to allow professors and students to easily make their own operational solar cells.

This set consists of an affordable titania electrode that is ready to be stained with a natural dye such as those found in berries. This kind of preparation is very convenient to do, and demonstrates the use of ingredients from nature to generate power from a renewable energy source. The resulting solar cell is powerful enough to power a small electric load.

For simplicity, the solar cell can be assembled by clipping the two electrodes against each other. For durability, the cell can be sealed by laminating the two electrodes together with an appropriate gasket. The Education Cell Kit is very versatile and can be adapted to your requirements.

More experienced users can build state-of-the-art Dye Solar Cells from this kit, using a synthetic ruthenium sensitizer, an advanced iodide electrolyte and platinized counter-electrode.

Dye Solar Cell Tutorial



Download "Dye Solar Cells for Real, The Assembly Guide for Making Your Own Solar Cells", our free tutorial demonstrating the possible uses of the Education Cell Kit.

SPARE PARTS

All of the spare parts of the Education Cell Kit can be also purchased separately.

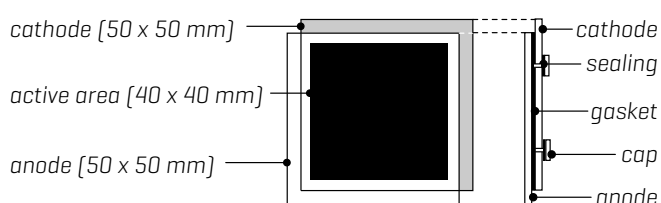
SELECT YOUR EDUCATION CELL KIT

Basic: for open cells [electrodes not sealed], counter electrodes are bare electrodes to be coated with carbon or platinum, dye [typically taken from red fruits] and electrolyte at customer's discretion.

Basic with electrolyte: same as the above, but a low volatility electrolyte is conveniently supplied.

Advanced: for sealed cells, gaskets and sealings included, counter-electrodes coated with platinum and drilled. Dye and electrolyte at customer's discretion.

In the latter case, we recommend Ruthenizer 535-bisTBA with Chenodeoxycholic Acid, and Mosalyte TDE-250.



WHAT'S INCLUDED

Education Cell Kit: [for 4 cells]	Basic	Basic+	Advanced
Titania Electrodes, 4 pcs.	✓	✓	✓
Bare Electrodes, not drilled, 4 pcs.	✓	✓	-
Platinum Electrodes, drilled 4 pcs.	-	-	✓
Gaskets, 5 pcs.	-	-	✓
Sealings, 10 pcs.	-	-	✓
Caps, 10 pcs.	-	-	✓
Education Electrolyte, 5 mL	-	✓	-

DEMONSTRATION CELL KIT



The Demonstration Cell kit is designed for people who would like to make bigger Dye Solar Cells for exhibition purposes. With an active area of 81 cm², this type of solar cell can easily power a small electric load, and will run nicely in office lighting or other diffuse light conditions.

The simplest way for making a demonstration cell consists of dying the titania anode with a natural dye. The cathode can be prepared from a conductive glass and a pencil (carbon source). These electrodes are then put together using binder clips, leading to an open-air cell. The Demonstration Cell Kit Basic includes these electrodes in one package.

Alternatively, the demonstration cell can be assembled in a sealed configuration for durability. Use the gasket to laminate the electrodes together, adding the electrolyte through holes that are pre-drilled in the cathode. The Advanced variant of the Demonstration Kit includes all the required materials and components.

Customized Pattern

The titania electrodes of the Demonstration Cell Kit can be customized with your own pattern. Please inquire.

SPARE PARTS

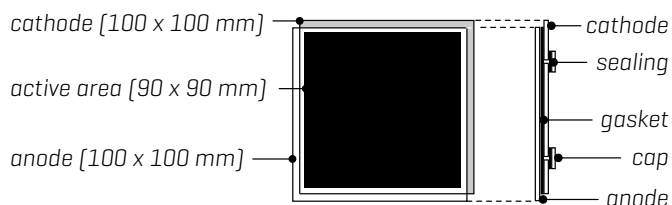
All of the spare parts of the Demonstration Cell Kit can be also purchased separately.

SELECT YOUR DEMONSTRATION CELL KIT

Basic: for an open cell [electrodes not sealed], counter electrode is a bare electrode to be coated with carbon or platinum, dye [typically taken from red fruits] and electrolyte at customer's discretion.

Advanced: for a sealed cell, gaskets and sealings included, the counter-electrode is coated with platinum and drilled. Dye and electrolyte at customer's discretion.

In the latter case, we recommend Ruthenizer 535-bisTBA with Chenodeoxycholic Acid, and Mosalyte TDE-250.



WHAT'S INCLUDED

Demonstration Cell Kit: [for 1 cell]	Basic	Advanced
Titania Electrode, 1 pc.	✓	✓
Bare Electrode, not drilled, 1 pc.	✓	-
Platinum Electrode, drilled, 1 pc.	-	✓
Gaskets, 5 pcs.	-	✓
Sealings, 10 pcs.	-	✓
Caps, 10 pcs.	-	✓

SOLAR CELL SAMPLES

Solaronix has always been a pioneer of Dye Solar Cell technology since its inception. We believe this family of solar cells demonstrate unmatched features opening solar technology for innovative applications.

Thanks to our in-house production of specialty chemicals and components, we naturally developed the consequent fabrication techniques for building photovoltaic solar cells and modules.

We have samples demonstrating different implementations of our technology, from laboratory-scale to full-size photovoltaic modules.



LABORATORY SAMPLES



Sample Cells

Laboratory-scale Dye Solar Cells illustrating the possibilities offered by our Test Cell Kit.

DEMONSTRATION SAMPLES



Demonstration Cells

Examples of patterned Dye Solar Cells available in different colors and sizes.



Demonstration Modules

Examples of serially interconnected Dye Solar Cell modules for various applications.

Customized Patterns

Our demonstration cells can bear a customized pattern (illustrated above with Solaronix' logo). Please inquire.

Solar Cell Accessories

We have low-current motors and voltage converters specifically adapted to the output power of such samples.

About Solaronix

Solaronix has been developing next generation photovoltaics for over 15 years, and was the first startup company to acquire an EPFL license for Dye Solar Cell technology in 1994.

Since then, Solaronix successfully cultivated a customer base of hundreds of clients thanks to a diverse portfolio of specialty chemicals and components. We deliver high quality ingredients to academic laboratories and pioneering enterprises involved in Hybrid and Dye Solar Cell technologies around the world.

Our products are available in retail quantities for research and development, but we also supply key materials in bulk for industrial purposes.

In addition to individual ingredients, Solaronix provides complete sets of components to help experimenters accelerate their research and development works, turning scientific progress into readily available products.

Visit our website www.solaronix.com to learn more about our technology, products, and solutions.

Solaronix also has 2 more complementary divisions:



SOLAR CELLS

Solaronix is developing next generation photovoltaic panels based on Hybrid and Dye Solar Cell technologies. Our models offer unprecedented possibilities in terms of customization and integration.



EQUIPMENT

Based on an exclusive light engine, our solar simulation equipment delivers perfect and continuous artificial sunlight 24/7, allowing for accurate stability and performance assessments of solar cells at laboratory and industrial scales.

DISCOVER OUR ENTIRE CATALOG

Interested in the product lines presented in this brochure? Go online and visit our webshop at shop.solaronix.com to discover our entire catalog.

You will find all of our products as well as extended information, and learn about the new products we regularly introduce.

Make sure you won't miss any novelty and sign up to get automatically posted a few times per year:

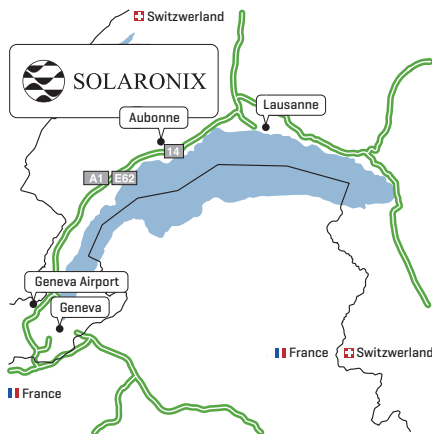
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HOW TO ORDER

Our webshop helps you find and effortlessly order all our products at shop.solaronix.com. Alternatively, you can send us an e-mail or a fax, indicating types and quantities of goods you would like to obtain.

We send order confirmations promptly, and do our best to perform shipment as soon as possible.

Whenever necessary, we can make a quotation for the desired products, including shipping fees. Our online shop allows you to inquire for a quotation right from your shopping cart.



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