



International  
Institute of  
Technology

*"We accomplish what others  
cannot accomplish and go  
where others cannot go"*

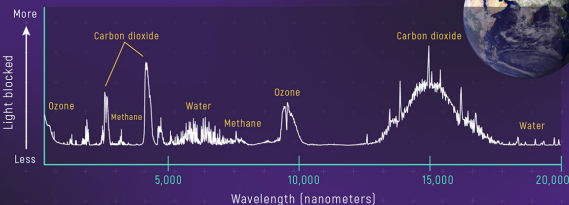
RESEARCH CENTER



# I<sup>2</sup>T Fotovoltaic Technology

In our research Lab, we analyzed starting from the NASA James Webb Space Telescope, developed in partnership with ESA and CSA, the transmission spectrum of our atmosphere. We have studied absorption peaks related to the elements composing it.

TRANSMISSION SPECTRUM OF AN EARTH-LIKE ATMOSPHERE



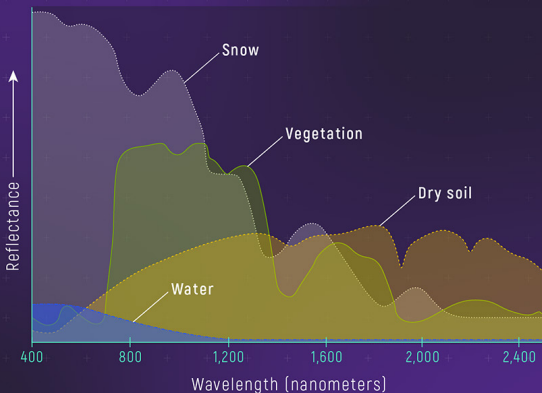
State of the art fotovoltaic technology converts with an average efficiency of 20% only the visible part of the light spectrum ranging from 380nm to 700nm. All the remaining part of the energy spectrum is transferred to the photovoltaic solar panel in forms of heat, decreasing drastically its performance.

Furthermore, there is also an hidden problem related to the reflected light from the surrounding environment...

# I2T Fotovoltaic Technology

Reflectance spectra shows how most of the energy goes into the infrared spectrum that traditional photovoltaic technology is not able to convert.

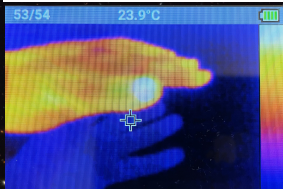
## REFLECTANCE SPECTRA: EARTH'S SURFACE MATERIALS



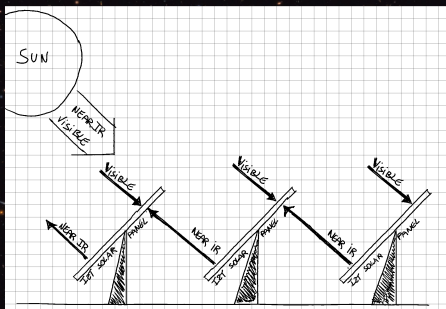
I2T has developed a technology able to convert both direct light and reflected light (InfraRed) in a new bifacial technology called MARK1

# I<sup>2</sup>T MARK1 Technology

We have developed a special tempered glass able to reflect near infrared radiation as shown in the following infrared picture



We utilize reflected near infrared light to produce electricity on the rear side of a bifacial photovoltaic panel specially designed for this purpose



# I<sup>2</sup>T MARK1: Better in Summertime



**This I<sup>2</sup>T Patented Technology uses a bifacial panel where the back side of the silicon cell is doped with component able to convert both visible and infrared radiation.**

**During summer, we are able to get superior performance since an additional fraction of the generated heat is converted into electricity while keeping the front side of the panel at a cooler temperature compared with traditional technologies.**

**This Allows to reduce the performance degradation that all photovoltaic panels experience during Summertime.**

# I<sup>2</sup>T MARK1: Superior Glass

We have developed a special tempered glass very resistant to hail with special nanoparticle treatment able to give both resistance, endurance and resistance to Hail, Ice, Debris and Sand Storm.



The Glass does not allow the water to stay on it.  
This repels Rain, Snow, Sleet and Environmental Pollutants



# I<sup>2</sup>T MARK1: +30% EPC Profit

EPC profit is increased by 30% since the number of installed panels is approximately the half for the same peak power.  
Our type of infrastructure allows to keep the same support and cables cost and also with a faster mounting labour

## Case study: 1MW Power Plant

### Standard:

Fotovoltaic Panels (15 cents/Watt) :	150 000 €
Supports + cables	: 250 000 €
Labour	: 150 000 €
EPC Profit	: 300 000 €
Selling Price:	850 000 €

### I<sup>2</sup>T:

Fotovoltaic Panels (25 cents/Watt) :	250 000 €
Supports + cables	: 125 000 €
Labour	: 75 000 €
EPC Profit	: 390 000 €
Selling Price:	840 000 €

Greater EPC Margin while at the same time being more competitive  
Furthermore with a more reliable product ensuring energy production over time with a self cleaning Glass.



# I<sup>2</sup>T MARK1: +117% ESCO Profit

From an ESCO perspective the productivity of the plant is increased by 117% in 20 Years

Case study: 1 hectar Investment

## Standard (1MW):

Burocracy & Land Rental	: 200 000 €
Fotovoltaic Panels (15 cents/Watt)	: 150 000 €
Supports + cables	: 250 000 €
Labour	: 150 000 €
<b>Total Investment</b>	<b>: 750 000 €</b>
Energy Selling (10 cents/KWh)	: 150 000 € / Year
Earning (20 Years)	: 3Million €
Investment Payback Time	: 5 years
ESCO Profit in 20 years	: 2.25 Million €
<b>Investment Yield</b>	<b>: +300%</b>

## I<sup>2</sup>T (2MW):

Burocracy & Land Rental	: 200 000 €
Fotovoltaic Panels (25 cents/Watt)	: 500 000 €
Supports + cables	: 250 000 €
Labour	: 150 000 €
<b>Total Investment</b>	<b>: 1100 000 €</b>
Energy Selling (10 cents/KWh)	: 300 000 € / Year
Earning (20 Years)	: 6Million €
Investment Payback Time	: 3.6 years
ESCO Profit in 20 years	: 4.9 Million €
<b>Investment Yield</b>	<b>: +445%</b>

Greater Profits with also a much shorter payback

# I2T MARK1: Superior Financial Return

## Case study: 1 hectar Investment

Standard, **state contributions 0%**  
Total Investment: 750 000 €  
Earning (20 Years): 3 Million €  
Profit (20 Years): 2.250 Million €

I2T, **state contributions 0%**  
Total Investment: 1100 000 €  
Earning (20 Years): 6 Million €  
Profit (20 Years): 4.9 Million €

Standard, **state contributions 30%**  
Total Investment: 525 000 €  
Earning (20 Years): 3 Million €  
Profit (20 Years): 2.475 Million €

Standard, **state contributions 70%**  
Total Investment: 225 000 €  
Earning (20 Years): 3 Million €  
Profit (20 Years): 2.775 Million €

Even without state contributions, I2T technology is more convenient

Further advantages:

- bigger incidence of depreciation
- impact of state and regional incentives for energy efficiency
- impact of compound interest on the major capital released in the twenty-year period, including the major revaluation
- Lower investment risk due to the high standard production quality

# Structured Production Partners



Technology is patented worldwide and exploitation rights are then given then to STRUCTURED COMPANIES for mass production and only royalties are asked as revenue. ROYALTIES ARE 100% RE-INVESTED to push mankind forward Our Partners in Corea, China, Japan, Switzerland, California, UK, Italy and France are succesfully helping us in our Mission

# Certified Production



# CERTIFICATE



Certificate number	17473 Rev 0	Replaces	-
Issued	29/11/2023	First edition	29/11/2023
Report number	PKC0012753	Expiry date	13/11/2026
Page	1 of 2	Contract number	PKC0012692

## Product Certificate Photovoltaic (PV) Panels

**License holder:** **I2T SA**  
Via Balestra 15A, 8900 Lugano - Switzerland

**Production site(s):** PKC0012692

**Model(s):** I2T-3B, I2T-3B, I2T-33, I2T-30, I2T-27, I2T-33, I2T-30, I2T-26, I2T-25  
(see extended models in the Annex\*)

The product as listed in this certificate and marked with the below given Kiwa Cermet Italia mark for Photovoltaic (PV) Panels, can be considered complying to the requirements of Kiwa Cermet Italia Guideline "TD KI - 0409, Solar Products and Components" based upon the following aspects:

Laboratory testing of the panels, which are performed by an accredited laboratory in accordance to ISO/IEC 17025 - see annex, using the following standards:

- IEC 61215-1:2016 / EN 61215-1:2016  
Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1: Test requirements
- IEC 61215-1-1:2016 / EN 61215-1-1:2016  
Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-1: Special requirements for testing of crystalline silicon photovoltaic (PV) modules
- IEC 61215-2:2016 / EN 61215-2:2017  
Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 2: Test procedures
- IEC 61730-1:2016 / EN IEC 61730-1:2016  
Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction
- IEC 61730-2:2016 / EN IEC 61730-2:2016  
Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing

**Remarks:** to be used in plants at a maximum system voltage (v<sub>ov</sub>) at STC) up to 1500 Vdc Class II; fire test (IEC 61730-2 / MST 2) - Class C was performed.

Periodic inspection of the Factory sites, according to "TD KI - 0409", which includes:

- inspection of the manufacturing quality control and production procedures;
- inspection of the produced panels and confirmation that these are identical to the tested panels;
- periodic verification of the manufacturer test facilities.

This certificate is issued in accordance with the Kiwa Cermet Italia regulations.

Publication of the certificate is allowed.

The validity of this certificate is subject to the positive result of periodic surveillance visits.

The validity of this certificate can be verified on request at the following e-mail address: [certificati@kiwacermet.it](mailto:certificati@kiwacermet.it)

Any total or partial reproduction of this document in any form, without Kiwa Cermet Italia express authorization, is prohibited.

**Kiwa Cermet Italia S.p.A.**  
Società con socio unico, soggetta  
all'attività di direzione e  
coordinamento di Kiwa Italia  
Holding Srl  
Via Cadorno, 22  
43037 Giugombio dell'Emilia (BO)  
Tel. +39(0)51.495.3.111  
Fax +39(0)51.763.382  
E-mail: [info@kiwacermet.it](mailto:info@kiwacermet.it)  
[www.kiwa.it](http://www.kiwa.it)

President  
Giampiero Belcredi



PRD N° 0596

Membro degli Accordi di Mutual Riconoscimento EA, IAF e ILAC  
Signatory of EA, IAF and ILAC Mutual Recognition Agreements



# I<sup>2</sup>T

International Institute of Technology - Switzerland © 2023

# Reliable Commercial Partners



**Technology is commercialized only by authorized partners. Partners must sell the products providing the full service to end customers.**

**The policy of our institute is to avoid speculation on the products done by the resale of the asset.**

**The result is a disruptive technology that goes from the manufacturer directly to the end customer by means of an installation company that is selected in accordance with our values of seriousness and respect**

# Contacts



**We welcome you in our Offices**

**headquarter**  
**I2T SA**  
**via Balestra, 15A**  
**6900 - Lugano**  
**SWITZERLAND**

**email**  
**[commercial@i2tholding.com](mailto:commercial@i2tholding.com)**

**website**  
**[www.i2tholding.com](http://www.i2tholding.com)**



**International Institute of Technology - Switzerland © 2023**