SKYTRONICS

open to innovation

SKYTRONICS

open to innovation

is a startup specialized in the research and development of products, services, solutions and technologies experimental high technology for the field of hi-tech industry, electronics and renewable energy.

- CTO
- Professors and PhDs in Engineering of the Federico II Naples
- R & D Engineers of energy Renewable and elettronics
- Electronic Design & Developer
- Software Engineers
- Marketing and comunication

MULTIDISCIPLINARY TEAM

RESEARCH E METHOD

Research and Development of innovatove solutions in hi-tech, electronics and renewable energy:

- Electronic devices
- Sistem integrator
- Hardware and software development

PROCESSING

Ability to design and software development geared to innovation and constant research applied to products and best solutions for B2B.

All products and services are customized to customer requirements, according to advantageous economic objectives in compliance with the principles e stablished by the green economy

- Industrialization of the product
- Data processing
- Diagnostic analysis
- Modeling
- Monitoring systems
- Sensor systems
- Modeling of physical processes

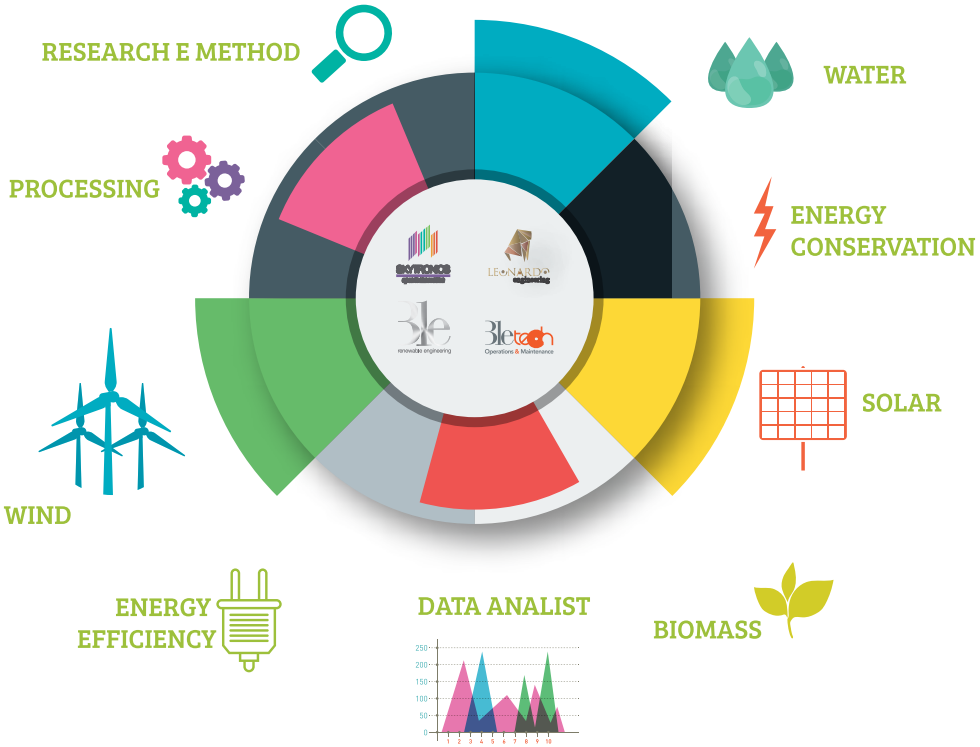
PRODOTTI E SERVIZI INNOVATIVI

COMPETITIVITÀ VINCENTE SUL MERCATO

WE ARE INNOVATIVE

- Customized products and services to the real needs of the customer
- Evelate technical performance
- Competitive for methodology, design, performance, reliability, life cycle compared to photovoltaic manufacturers
- Absence of real competitors for products and services

WHAT WE DO


RESEARCH E METHOD
WATER
PROCESSING
ENERGY CONSERVATION
SOLAR
WIND
ENERGY EFFICIENCY
DATA ANALIST
BIOMASS

WHY INVESTING ABOUT US?

PRODUCT INNOVATION

ECONOMIC BENEFITS

EXPERIENCE & EXPERTISE
COMPANY AND NETWORK

COMPLETE SERVICE

Thanks to the established structure and multidisciplinary team Skytronics is able to offer its customers a wide range of products and services customizati able to meet the needs of different target users:

- large industries
- small and medium-sized enterprises
- panel manufacturers
- maintenance
- private owners of large and small domestic installations

PRODuct

MORE

pv-*care*

IVES.H725

pv-clean

pv-fire

GIL

SERVIce

plant design

monitoring

data analyst

diagnostic

thermographic

OMP

engineering / development
software & hardware

training

service & assistance

MORE

System for a **MOre RELiable** panels

IDEAL SERVICE FOR:

manufacturers of solar panels

MORE

System for a **MOre REliable** panels

The experts say:

As a PV cell embedded in a module is subjected to a fault affecting its photo-generation capability, it can be kept reverse biased, thus dissipating power and reaching a dramatic over temperature (hot spot).

The state of the art:

Even though the traditional bypass diodes limit the maximum reverse voltage, they cannot avoid hot-spot occurrence and thermal degradation. The effort paid in diagnostics based on thermal analysis proves the attention on the thermal effects.

OUR SOLUTIONS

MORE is an innovative bypass circuit, which replace traditional bypass diodes in the junction box . MORE is devised to mitigate the hot-spot effects. In case of bypass, it performs as a traditional bypass diode (bypass action).
Moreover, it avoids the reverse biasing of the faulted cell and nullifies its current (disconnection).
As a consequence, the faulted cell does not dissipate and is not subjected to a dangerous temperature increase.

MORE

MORE / VS COMPETITOR

System for a **MOre REliable** panels

Among the main competitors of MORE we can consider the traditional bypass diode (low drop Schottky diodes) and active bypass devices (SPV1001 ST Microelectronics, Texas Instruments SM74611, Microsemi LX2400)

	MORE	DIODE	BYPASS
bypass	✔	✔	✔
Disconnection submodule (I=0)	✔	✖	✖
Mitigation HOTSPOT	✔	✖	✖
power loss bypass	✖	✖	✔
COST	2,00 €	1,00 €	2,50 €

* Quote Mouser 100px
** SPKC1645F
*** Cost prototype for 100 pieces

MORE / ECONOMIC BENEFITS
System for a **MOre REliable** panels

MORE

best life cycle of the panel

\+ **reliability** &
duration of the panel

best performance

\- maintenance costs
\+ productivity / gain

pv-*care*

Smart O&M&P for Large PV Plants

IDEAL SERVICE FOR:

major industries

small medium sized enterprises

maintainers

pv-*care*

Smart O&M&P for Large PV Plants

The experts say:

Standard diagnostic approaches only perform power losses detection in PV field, by comparing the estimation provided by the forecasting model to the actual power production.

On the contrary, the localization of faulted modules requires long and complex disassembling of large plant sections.

As a consequence, these techniques are time demanding, cause undesirable energy production stops, thus resulting cost-effective only in case of catastrophic faults detection

LA NOSTRA SOLUZIONE

PV CARE is an innovative real-time remote diagnostic tool based on the detection of mismatches among similar sections of a PV plant. The main assumption is that all the strings with the same orientation evenly operate. According to this consideration, the behavior of the best performing string is taken as reference.

Any mismatch with respect to this target has to be considered a power loss. PV CARE does not require the monitoring of weather parameter (temperature, irradiance, wind speed, so on).

Moreover, it identifies malfunctioning strings and provides a reliable estimation of the actual amount of energy loss, thus allowing cost effective maintenance activity by comparing intervention costs and expected revenues.

pv·care

pv·care / VS COMPETITOR

Smart O&M&P for Large PV Plants

Possible activities before PV-CARE

- Supervision Unit with qualified staff
- Hard to quantify benefits costs intervention
- Difficult classification of problems
- Not realtime identification
- Not remote localization
- Post 'reporting activity

Possible activities with PV-CARE

- Localization remotely
- Classification interventions and / or checks by remote
- Estimated cost benefit
- Preventive Quantification
- Remote & real-time reporting

pv-*care*/ ECONOMIC BENEFITS

Smart O&M&P for Large PV Plants

pv-*care*

tracking and analysis system remotely, identification of the problems remotely

pre-estimate of the intervention

simplification of process

optimization of the times

zero costs inspection

increase performance

tracking investment

- costs
+ gains

pv-*care*

Smart O&M&P for Large PV Plants

Choose the offer that best suits your needs

pv-*care* /BASIC

pv-*care* /PLUS

pv-*care* /EXTRA

NO LIMIT MW

pv-care /BASIC

essential service for profiling plant (state of operation and productivity).

SYSTEM ANALYSIS REMOTE AND IDENTIFICATION OF ISSUES

REPORT ON HEALTH THE PV PLANT

PRE-ESTIMATE OF THE INTERVENTION

INVESTMENT EVALUATION

TIME: Delivery of the report within one month from data access

VERIFICATION SYSTEM

OMP

pv-care /PLUS

the service provides the implementation of activities the corrective problem identified pv-care / basic

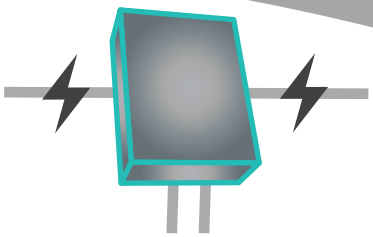
TIME and COST: to be quoted depending on the extent of the damage found as a result of the analysis and report

pv-care /EXTRA

extra training service for the correct use of PV-CARE

TRAINING

TIME and COST: to be quoted according to the type and duration of training to be carried out



IVES.H725

IV-tracer electronic scanner

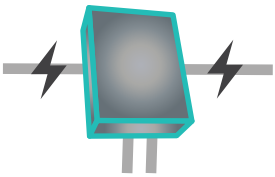
the iv-tracer without disconnection of the string

IDEAL SERVICE FOR:

major industries

small medium sized enterprises

maintainers



IVES.H725

IV-tracer electronic scanner

the iv-tracer without disconnection of the string

The experts say:

The electrical characterization by means of current-voltage curve tracing is considered the most effective diagnostic approach for PV panels. I-V curves provide information about the health status of a PV panel, identify its maximum producible power, allow faults detection and classification.

The state of the art:

The curve tracers on the market are usually fragile and bulky laboratory instruments. Even the portable ones devised to in situ characterizations are costly and require undesirable plants stop.

OUR SOLUTION

IVES H7-25 is an innovative curve tracer specially designed for Photovoltaics. When installed on a given PV panel, already embedded in a PV array, IVES performs an accurate electrical test during its normal operation.

An innovative disconnection/bypass circuit allows a rapid electrical characterization of the panel, without affecting the power production of the PV array.

The following features are provided:
fault detection
parameters extraction.

Other appealing features:
low price
remote control
Batteries power supply (no power cables)
Bluetooth communication (no data cable)

IVES.H725

IVES.H725 / VS COMPETITOR

The iv-tracer without disconnection of the string

Possible activities before IVES.H725

- Disassembly
- Transport
- Characterization
- Warehouse
- Possible replacement
- Reporting

Possible activities WITH IVES.H725

- Characterization on site
- RealTime Reporting
- Cost reduction
- Reduction of time
- Logistics Simplification
- Remote Characterization on work

IVES.H725 / ECONOMIC BENEFITS

The iv-tracer without disconnection of the string

IVES.H725

zero shipping costs for intervention in the laboratory

zero costs for on-site intervention

remote control and communication Bluetooth

any interruption productivity thanks to the string always connected

less consumption thanks to the energy battery power

cheap

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