FASTER & SHARPER 24.09.2021

ANCONA

Scopri i brevetti dei ricercatori UNIVPM selezionati per la realizzazione di progetti Proof of Concept (PoC) finanziati dal MISE tramite il programma FASTER (FAcilitare lo Sviluppo Tecnologico degli Esiti della Ricerca)

UNIVERSITÀ POLITECNICA DELLE MARCHE

Per info: trasferimento.tecno@sm.univpm.it

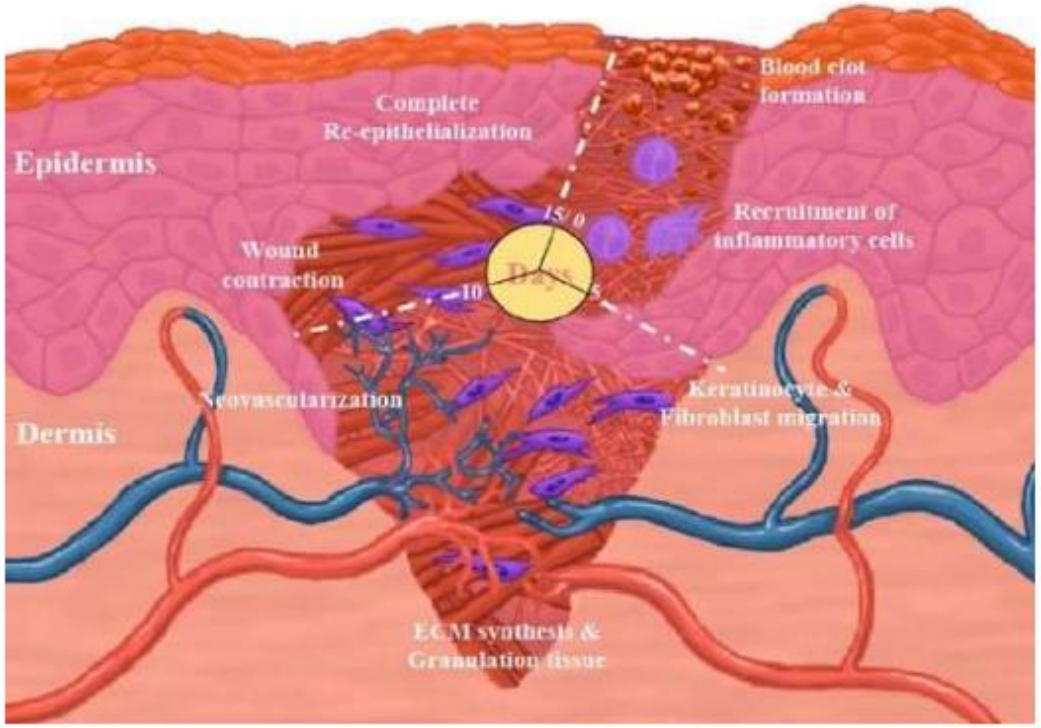
COBA

COmposto BioAttivo per la cura delle ferite difficili

Dipartimento Medicina Sperimentale e Clinica

UNIVERSITÀ POLITECNICA DELLE MARCHE

A TOPIC COMPOUND FOR WOUND REPAIR



PRIORITY NUMBER:

10**2016**000116727

KEYWORDS:

Health
Medicine
Wound
Healing

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The invention is a pharmaceutical composition for the healing of wounds with topical usage, effective and fast, even in the presence of ulcerous pathologies, and substantially free of side effects.

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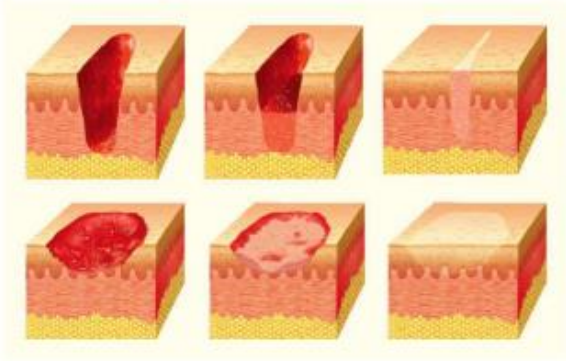
A TOPIC COMPOUND FOR WOUND REPAIR

DESCRIPTION:

The invention is a composition of known elements, such as essential and non-essential amino-acids, vitamins and other substances, actually used in wounds (including ulcers and burns) healing methods.

With respect to usually used mixtures, the proposed invention has an increased duration and an easier laying.

The special composition allows the healing of wounds in organic tissues, which is complete, fast, and free from the development of infections and side effects, even when treating burns or ulcerous wounds derived from traumatic, diabetic, or vascular causes. This allows, with respect to actual treatments, an improved patient wellness and a cost saving for hospitals and clinics.



ADVANTAGES:

- Longer duration of the composition topic application.
- Easy and fast application in case of ulcerous wounds.
- Healing of several different types of wounds and ulcers applying the same composition.
- Fast healing time.

APPLICATIONS:

- **Ulcerous wounds healing, regardless of their cause.**
- **Application to patients with diabetic or vascular illnesses**
- **Prevention of infections and side effects development .**
- **Sectors:**
  - **Clinics and hospitals**
  - **Pharmaceutical companies**

FRAPPE'

FRAgole Per donne Più Sane

Dipartimento Medicina Sperimentale e Clinica

UNIVERSITÀ POLITECNICA DELLE MARCHE

STRAWBERRIES EXTRACT FOR UTERINE LEIOMYOMAS

NUMERO DI PRIORITÀ:

UA**2016**A006365

KEYWORDS:

Health
Medicine
Leiomyomas / Fibroids
Strawberry Extract

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The invention belongs to the field of **treatment of uterine leiomyomas** (fibroids).

It proposes the usage of specific **strawberry extracts** for the prevention, treatment, and progression control of **uterine fibroids**. It is based on a specific cultivar of strawberries selected for its high antioxidant capacity and high content of phenols and anthocyanins.

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STRAWBERRIES EXTRACT FOR UTERINE LEIOMYOMAS

DESCRIPTION:

Leiomyomas are benign tumors of the uterine musculature characterized by fibrosis.

They affect 25% of women of childbearing age, can become large and/or numerous, with devastating symptoms (painful menstruation, anemia, swelling, infertility). To date, the treatment remains surgical, partial (myectomy) or even total (hysterectomy), while medical treatment is mostly hormonal with several side effects and with limited use over time.

The extracts of some strawberry cultivars reduce the concentration of free radicals (ROS) and improve glucose metabolism in myometrium cells (healthy cells of the uterine muscle), while they have cytotoxic effect (increase in cell death and level of intracellular ROS, worsening glucose metabolism) and antifibrotic effect in leiomyoma cells (fibrotic tumor mass cells).

ADVANTAGES:

- Usage of natural substances.
- Positive effect on healhty tissues (myometrium).
- Negative effect on sick tissues (leiomyoma).

APPLICATIONS:

- **Pharmaceutical industry.**
- **Prevention, control, and treatment of leiomyoma (fibroids).**

G3F 2.0

La nuova generazione di laser scanner portatili
per la misura del Gap & Flush

Dipartimento Ingegneria Industriale e Scienze Matematiche

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G3F - GAP & FLUSH MEASUREMENT SYSTEM

PRIORITY NUMBER:

10**2018**000003247

KEYWORDS:

Automotive
Impresa 4.0
Misurazione
Automazione

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The device is integrated in a smartphone and is able to recognizes the measurement area through a Deep Learning approach. The device allows measurements to be made even on surfaces and materials that have different optical responses, as, for example: metal, plastic, chromed components, etc.

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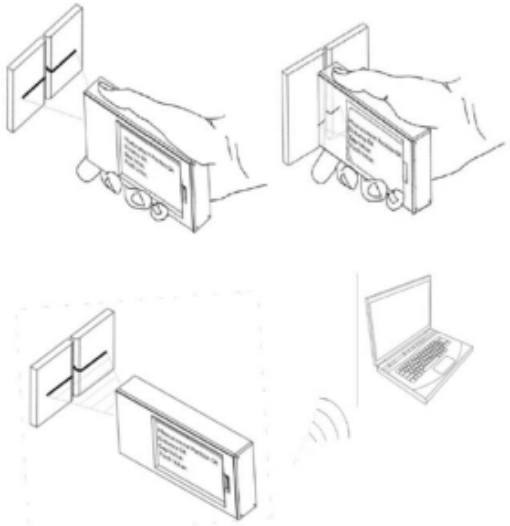
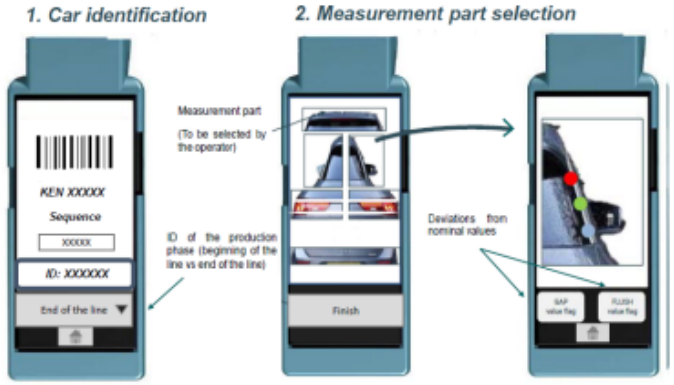
G3F - GAP & FLUSH MEASUREMENT SYSTEM





DESCRIPTION:

The device automatically recognizes the measurement area through a Deep Learning approach and can enable or disable the measurement laser, depending on the distance of the device from the surface, and, consequently, change the camera exposure time.

These functions are needed to guarantee the safety of the operator and to better calibrate the measurement and to reduce the uncertainty. The characteristics of the device allow measurements to be made even on surfaces and materials that have different optical responses (for example: metal, plastic, chromed components, etc.), keeping the measurement accuracy level constant.

ADVANTAGES:

- Allows measurement on different types of surfacesSecurity and portability.
- the solution integrates various safety measures for the operator, turning the laser on and off and enabling the measurement only after recognizing the operator
- Recognition of individual measurement points, highlighting compliance / not compliance for each measured point
- Recognition of the part to be measured
- Possibility to operate in contact or at a distance
- Automatic storage of collected data

APPLICATIONS:

- **Real time measurements**
- **Automotive / Aerospace sectors**
- **White goods sector**
- **Furniture sector**

MAMMUT

Malta multifunzionale a basso impatto
AMbientale per il risparmio energetico, il coMfort e
la salUbrità degli ambienTi di vita

Dipartimento Scienze e Ingegneria della Materia Ambiente e Urbanistica

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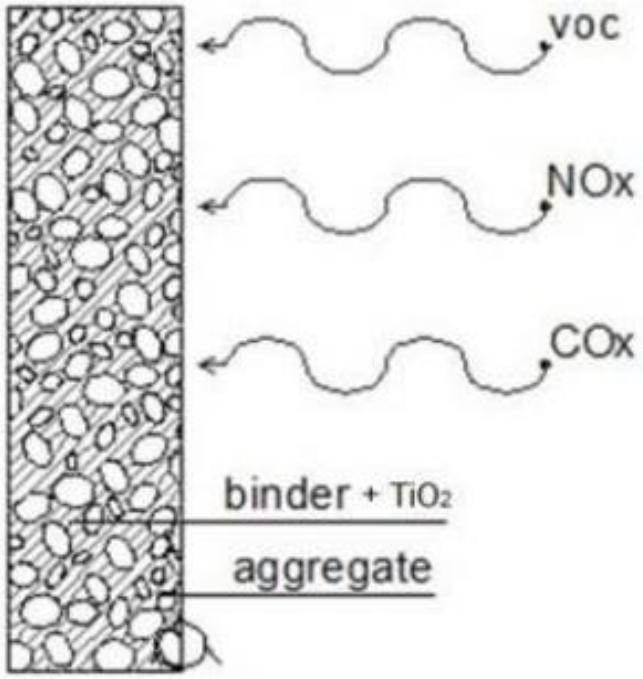
MULTIFUNCTIONAL MORTAR/PLASTER



PRIORITY NUMBER:

102017000004554

KEYWORDS:

Building
Mortar / Plaster
Indoor Air Quality
Green Building

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Multifunctional mortar with low environmental impact, able to improve the air quality in confined spaces, thanks to its depolluting properties, hygroscopic buffer capabilities, electromagnetic shield properties, in addition to the conventional mechanical strength and permeability properties.

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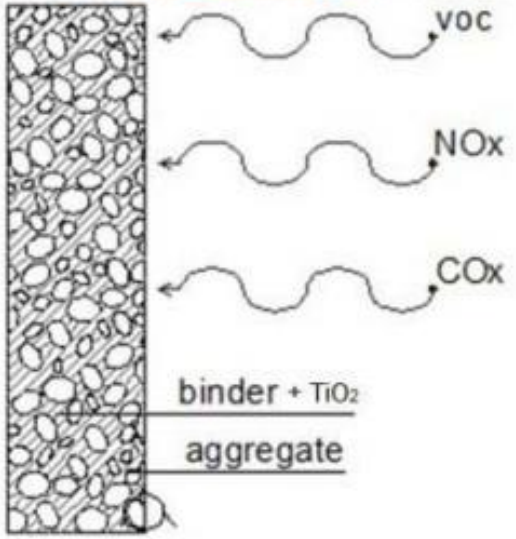
MULTIFUNCTIONAL MORTAR/PLASTER

DESCRIPTION:

The multi-functional mortar is a passive system that combines the characteristics of removal of polluted air-dispersed, humidity regulation and EM fields shielding, in a single compound able therefore to increase for a long time the health and well-being of the occupants of confined spaces, in addition to performing the ordinary functions of mortars for indoor environments. The mortar is also obtained from by-products of the production and / or recycling of building materials, thus ensuring a low environmental impact during its production and its disposal. The multi-functional mortar is suitable for all uses of common mortars used in the civil and non-civil construction sector, and therefore does not require specific skills for its use.



ADVANTAGES:

- Lightness to reduce thermal transmittance, to reduce transport costs and, through the reduction of own non-structural weights, to improve anti-seismic behavior;
- Adequate mechanical performance, to avoid cracking and degradation;
- Low environmental impact thanks to the use of non-hazardous industrial by-products.

APPLICATIONS:

- Construction (for homes and public buildings);
- Manufacturers of mortars and construction materials.

MENTORED

MEtodo di rilevameNTo di deviaziOni di foRma in linEa di proDuzione

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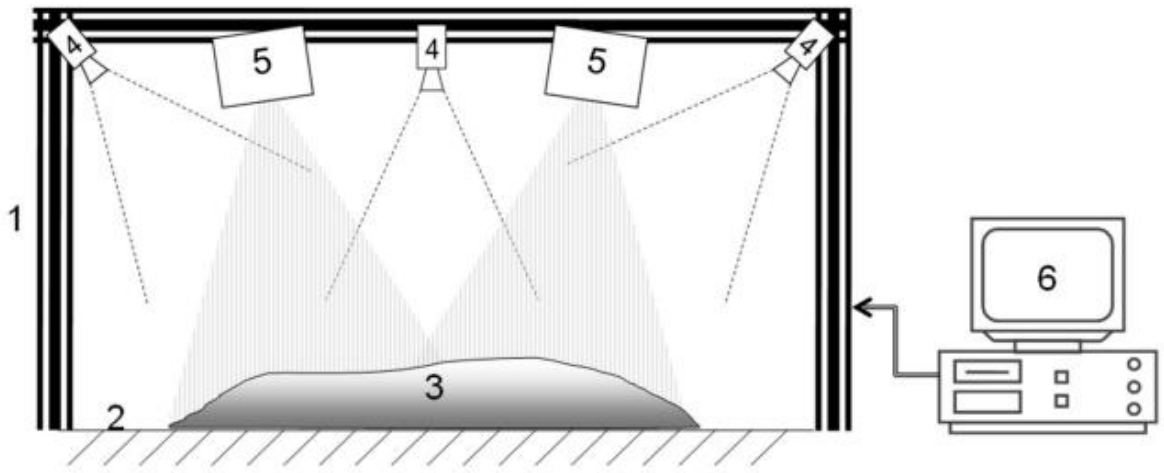
3D SHAPE DEVIATIONS CHECK ALONG PRODUCTION LINE



PRIORITY NUMBER:

10**2017**000149389

KEYWORDS:

Line quality check
Fringe projection
Temporal phase shift
Phase unwrap
3D reconstruction

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The system is able to find three-dimensional shape deviations, with respect to project specifications, using both Fringe Projection and Temporal Phase Shift techniques. The system can work along mass production line for real time shape quality check. It also can be suited to work with objects of every measures.

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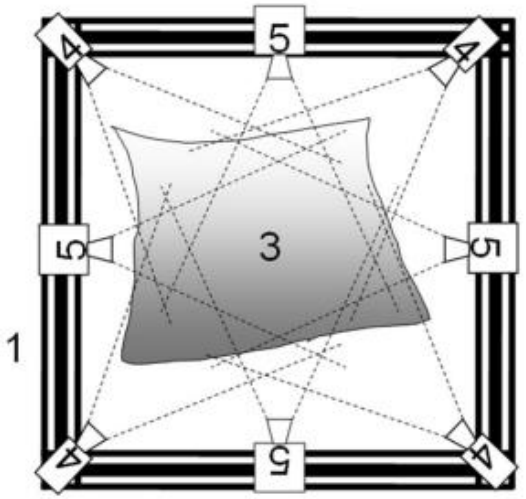
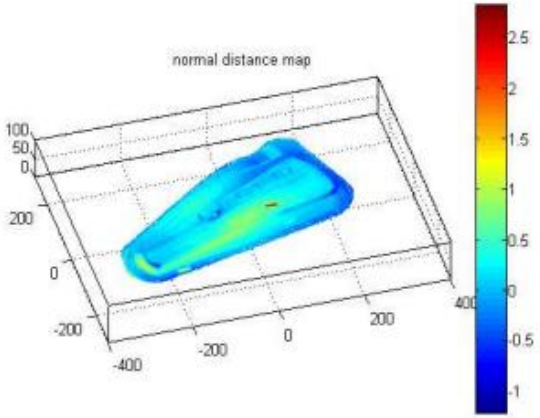
3D SHAPE DEVIATIONS CHECK ALONG PRODUCTION LINE



DESCRIPTION:

The system uses both Fringe Projection and Temporal Phase Shift techniques to find full field shape deviations on 3D objects as, for example, moulded parts. The system can work with objects of every measures, but it better fits with object measures from 0.5m x 0.5m to 2m x 2m, or even bigger.

The system is made of a frame or a cell (1), where the object (3) is laid down over a platform (2). Object is shot by a certain number of cameras (4) and lighted by 4 spotlights (5). The fixed cameras shoot the entire object, minimizing or cancelling dark zones and undercuts, if present. Image acquisition, as well as spotlight pattern generation and data processing is performed by computer (6).



ADVANTAGES:

- Real time 3D shape recognition on a mass production line (up to 10 pcs / min).
- Real time self positioning error correction along production line
- Adjustable calibration range

APPLICATIONS:

- **Optical Measurements**
- **Industrial:**
  - **Automotive**
  - **Small electrical appliances**
  - **White Goods**
  - **Aerospace**
- **Production line quality check**

MFC

Montante per Facciata Continua

Dipartimento Ingegneria Civile, Edile e dell'Architettura

UNIVERSITÀ POLITECNICA DELLE MARCHE

BUILDING GLASS CONTINUOUS FACADE SYSTEM

PRIORITY NUMBER
102020000025636

KEYWORDS:
Double glazing, Glass facade, Glass-frame collaboration, Pre-tensioned mast, Wooden post.

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The curtain wall system for buildings includes a plurality of panels attached to structural parts of a building, arranged side by side to close an opening in the building, with space between glass panels.
Each panel includes an internal plate facing the inside of the building, an external plate facing the outside, and a support frame made of wood, interposed between the plates themselves, as well as means of fixing the panels to the structural parts.
The system, completely recyclable, ensures remarkable mechanical and thermal performances and does not require specially made components.

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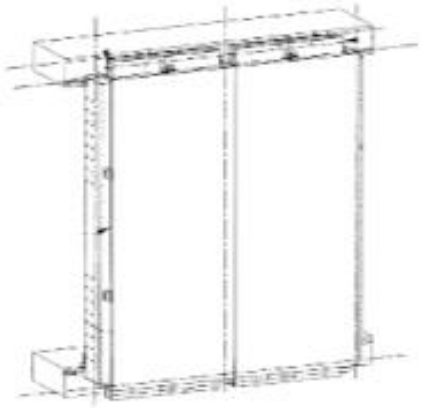
BUILDING GLASS CONTINUOUS FACADE SYSTEM

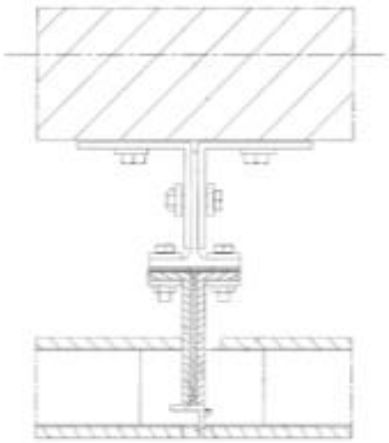
DESCRIPTION

Actual competitors' systems include complex and bulky frames, often interrupted by crosspieces to avoid thermal bridges but which interrupt the continuity of the glazing.
The system allows to obtain a glass facade substantially without interruption, with minimal environmental impact and with considerable thermal insulation. The wooden uprights, pre-tensioned with steel strands, allow to use, even with a minimum size of the uprights (20 x 25 cm), panels larger than 4 meters, while ensuring the highest class of wind resistance (C5 class, resistance tested at 2000Pa). This result is also possible thanks to the structure of the panels, also covered by a patent, which creates a structural glass / frame collaboration.
By their nature, risers are easily built on site, quickly and more economically than other systems. The assembly of the entire structure is also extremely simple.



APPLICATIONS

- Buildings;
- Urban structures.



ADVANTAGES

- Seamless glass facade;
- Remarkable mechanical and thermal performance, even with very large glass panels;
- Minimum environmental impact;
- Ease of implementation.

NORRIS

Nilm clOud seRvices for ResIdential userS

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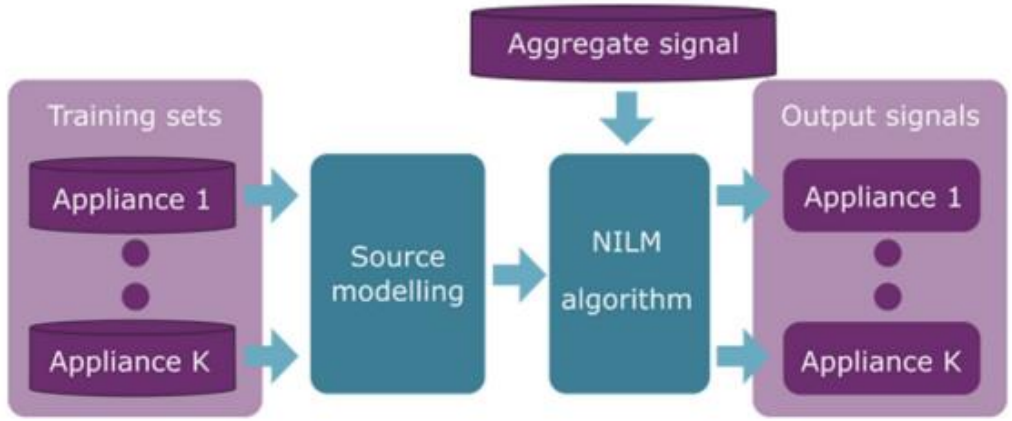
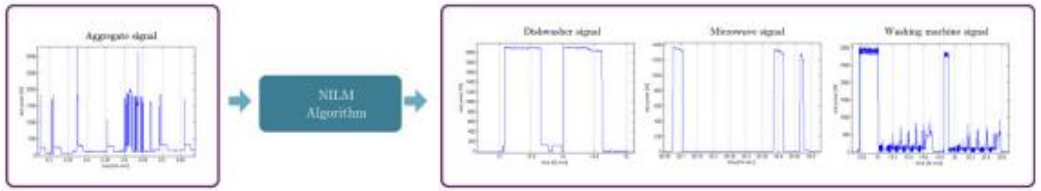
ELECTRIC DEVICES CONSUMPTION MONITORING





PRIORITY NUMBER:

102017000004554

KEYWORDS:

Electronics
Measurements
Energy Efficiency
Active/Reactive Power

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The invention implements a novel formulation of a known algorithm based on Hidden Markov Models, with significant innovations which represent progress with respect to the state of the art and which ensure a more efficient disaggregation of the electrical load.

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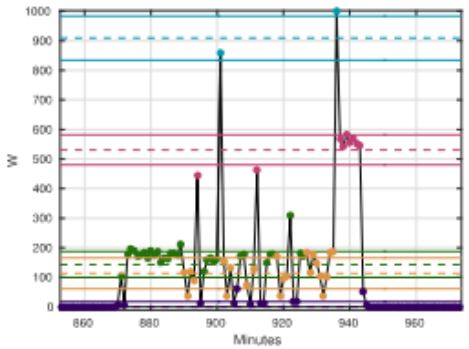
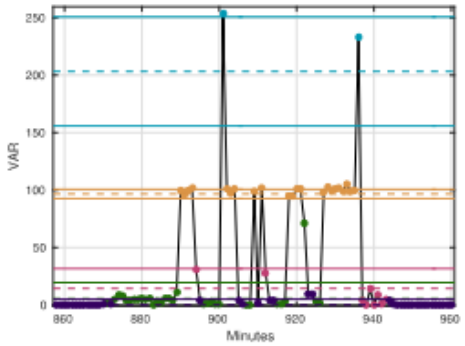
ELECTRIC DEVICES CONSUMPTION MONITORING





DESCRIPTION:

The invention implements a novel formulation of a known algorithm based on Hidden Markov Models, with significant innovations which represent progress with respect to the state of the art.

Different loads (e.g. domestic devices) are modeled using HMM (Hidden Markov Models, a more informative representation than FSM, Finite State Machines), while the electrical network aggregating the loads is modeled using FHMM (Factorial HMM), i.e. an aggregation of the individual HMMs modeled on the basis of active and reactive power consumption profiles, and in which each evolves independently in parallel to the others.

The data obtained from the modeling of the electric loads and the network are used in an optimization problem to extract the disaggregated profiles of the active and reactive power for each device.

ADVANTAGES:

- Discrimination of different loads (devices) using the reactive component of power, even in the presence of similar active components.
- Accurate modeling of state transitions, using the combination of active and reactive power, i.e. the value pair (Pa, Pr).
- Disaggregation of reactive power profiles.

APPLICATIONS:

- **Electrical measurements (including devices)**
- **Optimization of electric load (energy efficiency)**
- **Demand Side Management**

SCRIPT

Strategie Circolari di Recupero di Indio da Pannelli Triturati

Dipartimento di Scienze della Vita e dell'Ambiente

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LCD PANELS RECYCLING SYSTEM

NUMERO DI PRIORITÀ:

10**2018**000008207

KEYWORDS:

Environment
Rare metals recovering
Zero waste approach
Recycling
LCD

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The patent covers all the LCD panel treatment steps, starting from the initial shredding to the final recycling step of glass and indium, applying a "zero waste" approach, where all the materials of the original LCD panel are recovered.

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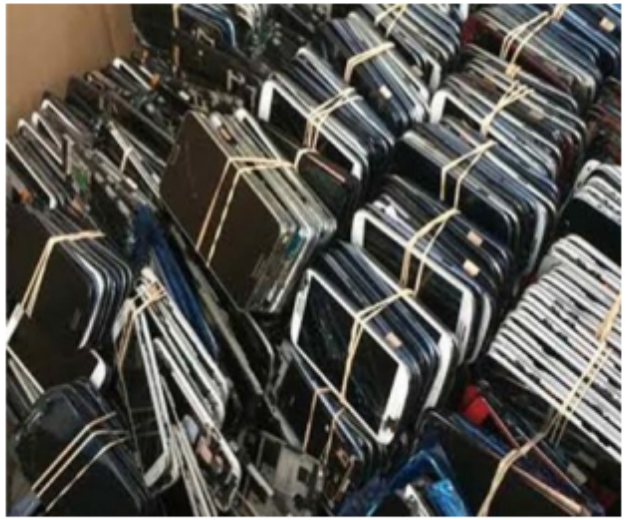
LCD PANELS RECYCLING SYSTEM

DESCRIZIONE:

Current techniques for recovering devices that use LCD panels require the disposal of the screen as non-hazardous waste. However, the content of potentially recoverable material, such as glass, the main component of the panel, and ITO, a film composed of indium oxide (90%) and tin oxide (10%), has pushed research towards the development of new recovery processes. The patented process allows a zero-waste treatment to be carried out, optimizing the steps for the extraction of indium with a new pre-treatment and a new valorization of a fraction previously considered as waste.

The patented process has numerous advantages compared to the known systems for treating LCD screens at the end of their life and can be used in any recycling facility used for treating special waste.



VANTAGGI:

- Extraction efficiency greater than 90%
- Significant reduction in the consumption of raw materials
- Environmental and economic sustainability of the process

APPLICAZIONI:

- End-of-life LCD screen treatment
- Recovery plants
- Rare metals recovery

TALKING BLOCKS

Intelligenza artificiale per identificare e modellare esperienze didattiche di robotica educativa

Dipartimento Ingegneria dell'Informazione

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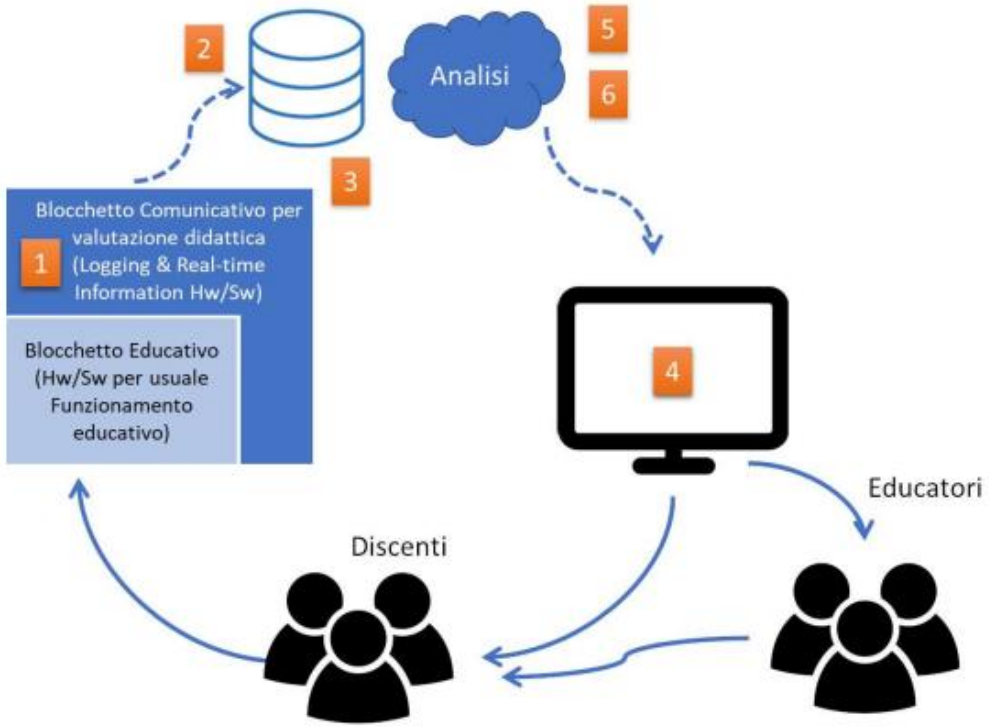
SMART BLOCKS FOR TEACHING ROBOTICS



NUMERO DI PRIORITÀ:

102018000009636

KEYWORDS:

Educational
Robotics
Learning systems

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The patent consists of independent functional blocks (made up of hardware and / or software) used in Educational Robotics courses, containing algorithms capable of tracking the construction sequences implemented by the student during the execution of a task assigned to him by the teacher.

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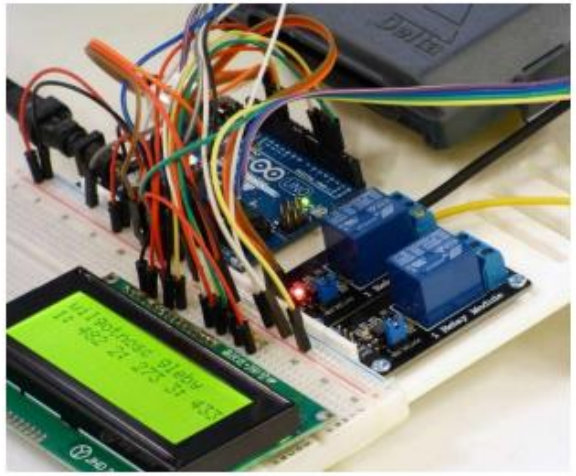
SMART BLOCKS FOR TEACHING ROBOTICS

DESCRIPTION:

The patent covers an innovative system that allows the basic programming functions of the individual blocks to be modified with an algorithm able to elaborate the logical and implementing choices made by the students. The proposed mode has a high added value for students and educators, allowing for immediate feedback.

Furthermore, the information analysis function regarding the activation of the individual blocks (temporal or event based) and of the collected data, allows to reconstruct in real time the effectiveness of the educational process of which the devices themselves have been employed, in order to monitor and correct the teaching.



ADVANTAGES:

- Applicability of the system in the educational field, adaptable in different grade schools
- Real-time feedback to students using the blocks
- Monitoring of teaching and learning

APPLICATIONS:

- Monitoring of teaching activities
- Educational products in the field of robotics
- Learning assessment systems

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