

Boost Your Business with Our Innovative Technology



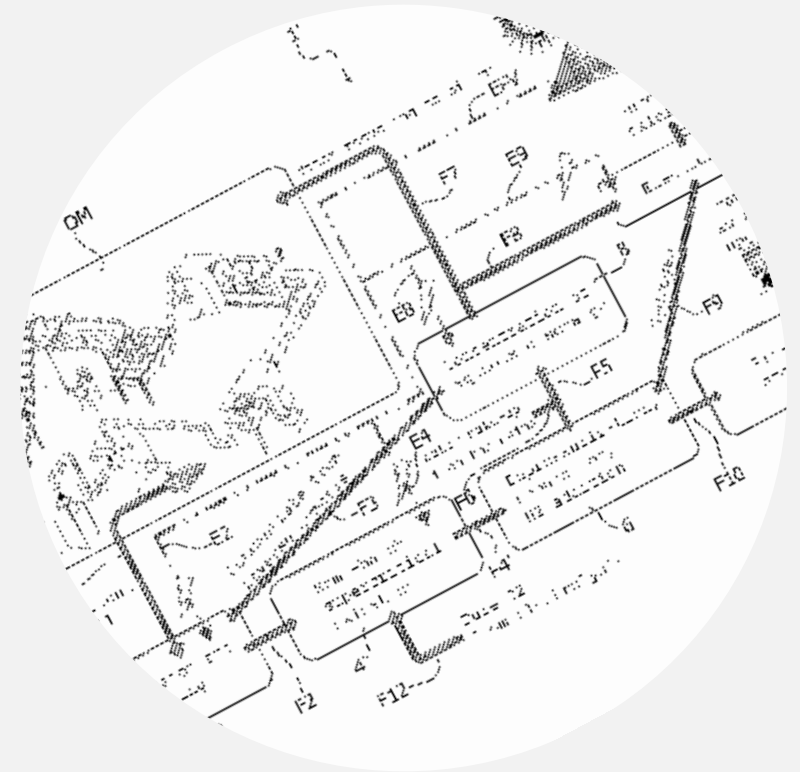
A Company of



A METHOD FOR TREATING AQUEOUS EFFLUENTS WITH ORGANIC CONTENT, PARTICULARLY OIL MILL EFFLUENTS

Discover a unique opportunity to access cutting-edge patented technology designed to revolutionize the waste treatment industry with advanced biofuel production

With our patent, we are ready to offer you a license that will allow you to take full advantage of this innovation and dominate the market



Patent Overview

Nature of the Patent

A patent is an exclusive right granted for an invention, which prevents others from exploiting it without authorization. It is a valid legal tool to protect innovation.

Importance of the Patent

The patent gives the owner control over the use of the invention and allows him to profit from it through the sale of licenses. It is essential to enhance and monetize innovation.

License Sales

Selling licenses allows third parties to use the invention covered by the patent in exchange for compensation. It is an effective way to expand the market and generate additional income.



Patent Registration Process

Legal Protection

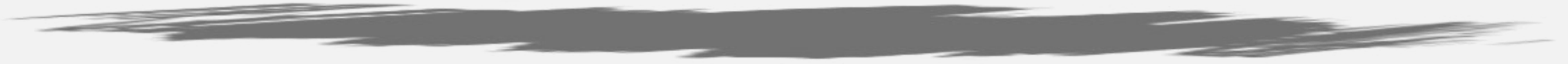
Once granted, the patent provides the holder with legal protection against unauthorized use of the invention by third parties. It is essential to defend intellectual property rights.

Patent Application

The process begins with the filing of a patent application with the competent Patent Office. It is essential to provide a detailed description of the invention and meet the patentability requirements.

Examination and Grant

After submission, the Patent Office examines the invention to verify its novelty and applicability. If it meets the criteria, the patent is granted, giving the holder exclusive rights.



Benefits to Licensee:

Exclusive Access

Gain exclusive access to technology that has already been tested and validated, allowing you to build new plants with a significant competitive advantage

R&D Cost Savings

Dramatically reduce development time and costs by accessing technology that's ready to market.

Increase in Revenues

Our technology has the potential to expand the market share on the topic of waste treatment through a green process.

Full Support

We offer technical support and advice throughout the implementation process, ensuring a smooth transition.



Licensing Strategies

Exclusive

Grant a single exclusive license to a selected partner, ensuring a high level of control and visibility in the market.

Not Exclusive

Offer non-exclusive licenses to more subjects, allowing a greater diffusion of the invention and a wider generation of revenues.

Sublicense

Allow a licensee to grant sublicenses to third parties, further expanding the scope and use of the invention.



INVENTORS



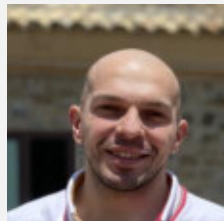
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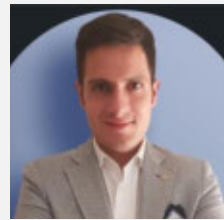
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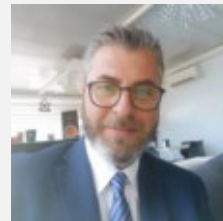
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ABSTRACT

Our patent includes an exclusive technology inherent in the treatment of urban or industrial wastewater, in particular from the food industry. The invention was developed with particular, but not exclusive, reference to aqueous wastewater from oil mills.

This technology is the result of years of research in the field of waste disposal and the production of advanced biofuels



EUROPEAN APPLICATION VALIDATION

ITALIAN PRIORITY

COUNTRY	NUMBER	PRESENTATION DATE	GRANT DATE	PATENT NUMBER

QUESTION N. 102022000009149

PRESENTATION DATE:

04/05/2022

GRANT DATE:

10/04/2024

PATENT N. 3408601

INTERNATIONAL APPLICATION VALIDATION

COUNTRY	APPLICATION DATE	PATENT STATUS	GRANT DATE	CONCESSION NUMBER
UNITED STATES				
CHINA				

EXTENSION PCT

QUESTION N.

PCT/IB2023/054635

PRESENTATION DATE:

04/05/2023


GRANT DATE:

00/00/0000

CERTIFICATES

ITALY

EUROPE


Ministero delle Imprese e del Made in Italy
DIPARTIMENTO MERCATO E TUTELA
DIREZIONE GENERALE PER LA PROPRIETÀ INDUSTRIALE - UBM

Loredana Cugliari
Firmato da ubm-brevetti/2022
Roma, 10/04/2024

ATTESTATO DI BREVETTO PER INVENZIONE INDUSTRIALE

Il presente brevetto viene concesso per l'invenzione oggetto della domanda:

N. 102022090009149

TITOLARE: • ARCHIMEDE S.R.L. 100.0%

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• SCARANTINO Claudio
• GATTUSO Calogero
• RIZZO Roberto
• SANTORO Fabio

TITOLO: PROCEDIMENTO PER IL TRATTAMENTO DI REFLUI ACQUOSE CON CONTENUTO ORGANICO, PARTICOLARMENTE REFLUI DI FRANTOI OLIIARI

CLASSIFICA: C02F

DATA DEPOSITO: 04/05/2022

Roma, 10/04/2024

Il Dirigente
Loredana Cugliari

Documento informatico, redatto e firmato digitalmente ai sensi degli artt. 20 e 21 del D. Lgs. 82/2005 e s.m.i.

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DESCRIPTION OF THE PATENT

The object of the invention is to provide a method for treatment of aqueous wastewater with organic content, for example wastewater aqueous from oil mills, which is substantially free from technical problems related to the known treatment technologies described above, particularly membrane treatment technologies, and resulting furthermore in an evaluation of aqueous waste with conversion into per species further uses.

The aim of the invention is achieved by a process having the characteristics forming the subject of the attached claims, which form an integral part of technical teaching administered here in connection with the invention.



DESCRIPTION OF THE FIGURES

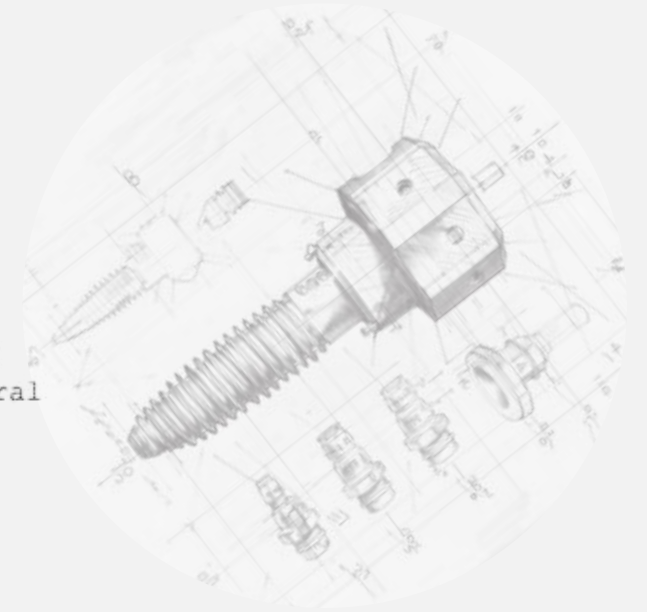
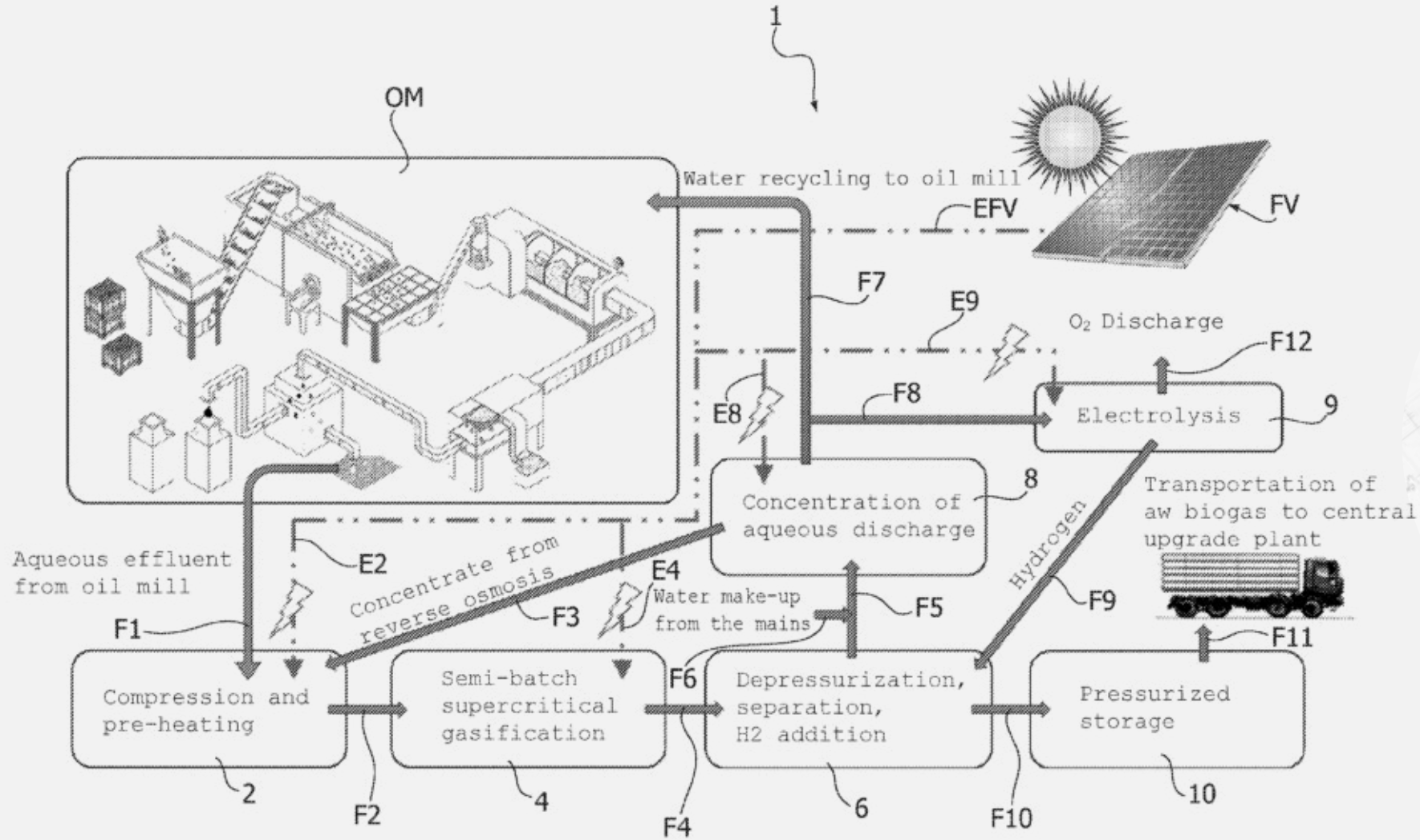
The invention will now be described with reference to the annexed figures, provided purely as a non-limiting example, in which:

- ❖ Figure 1 is a schematic representation by means of a block diagram of an early form of execution of the treatment process based on the invention,
- ❖ Figure 2 is a schematic representation by block diagram of a second form of execution of the treatment process based on the invention, and
- ❖ Figure 3 is a schematic representation by block diagram of further process steps based on the invention.
- ❖ The diagrams in figures 1 to 3 are accompanied, in addition to the usual reference numbers coherently referred to throughout the description, by short portions of text that are intended solely to assist the reading of each diagram with reference to some specific forms of execution (subject, moreover, of extended comment in the description). The portions of the text in question – as will be evident from the description below – are therefore not to be understood in any way as constituting information or limiting elements with respect to the description of the invention or the matter underlying the diagram, for which the reference is always represented by the detailed description that follows.



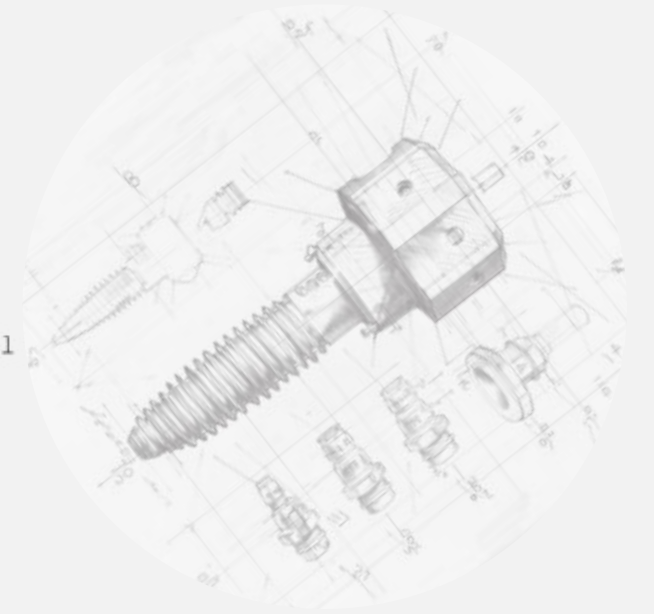
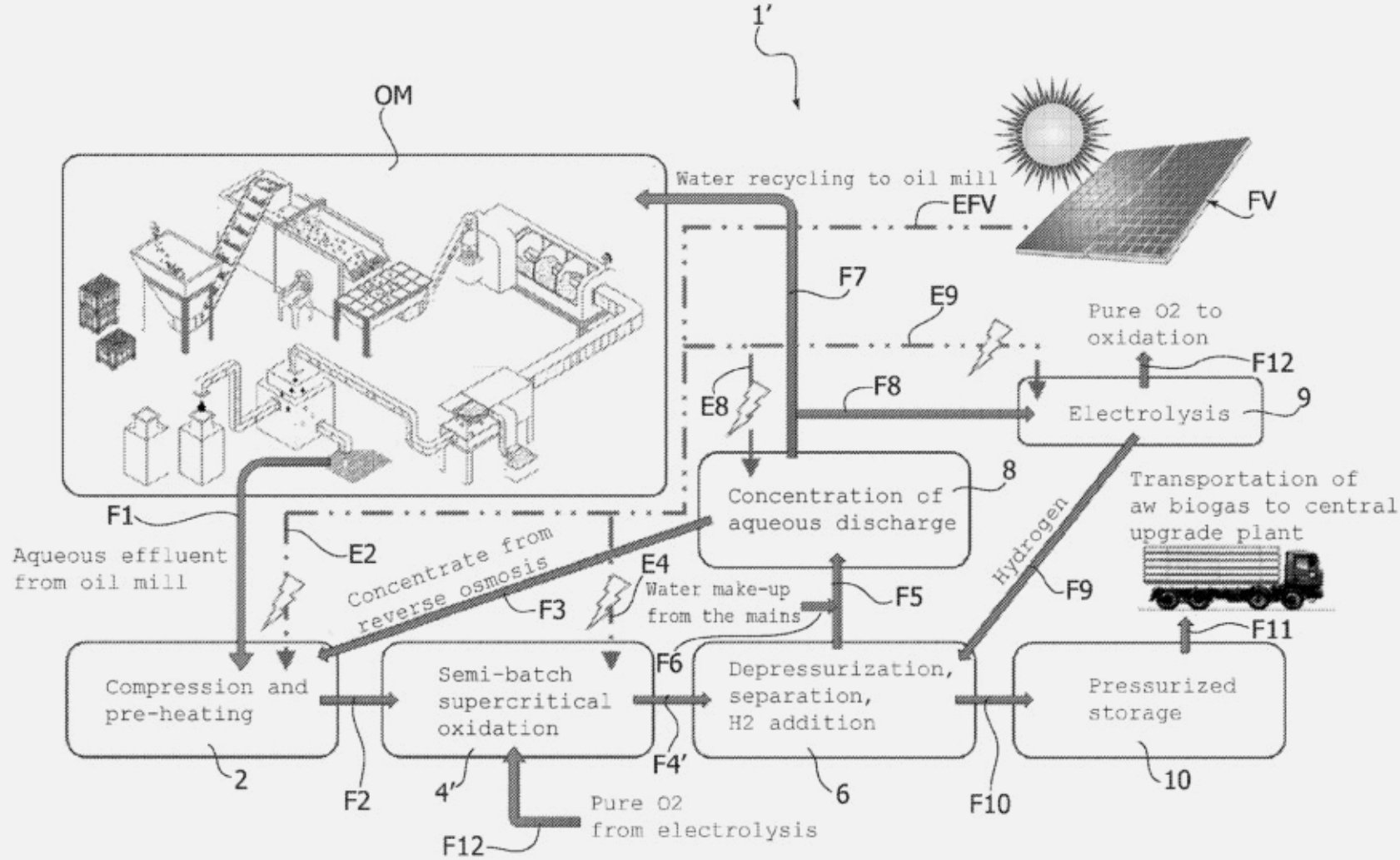
PATENT DESIGNS

FIG. 1



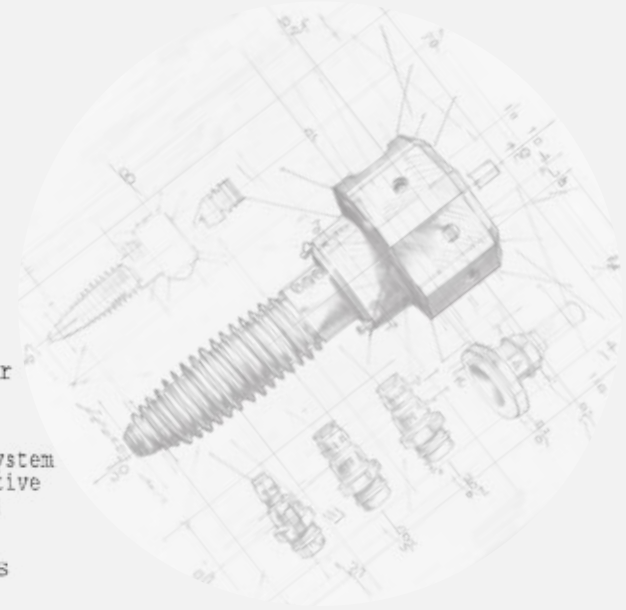
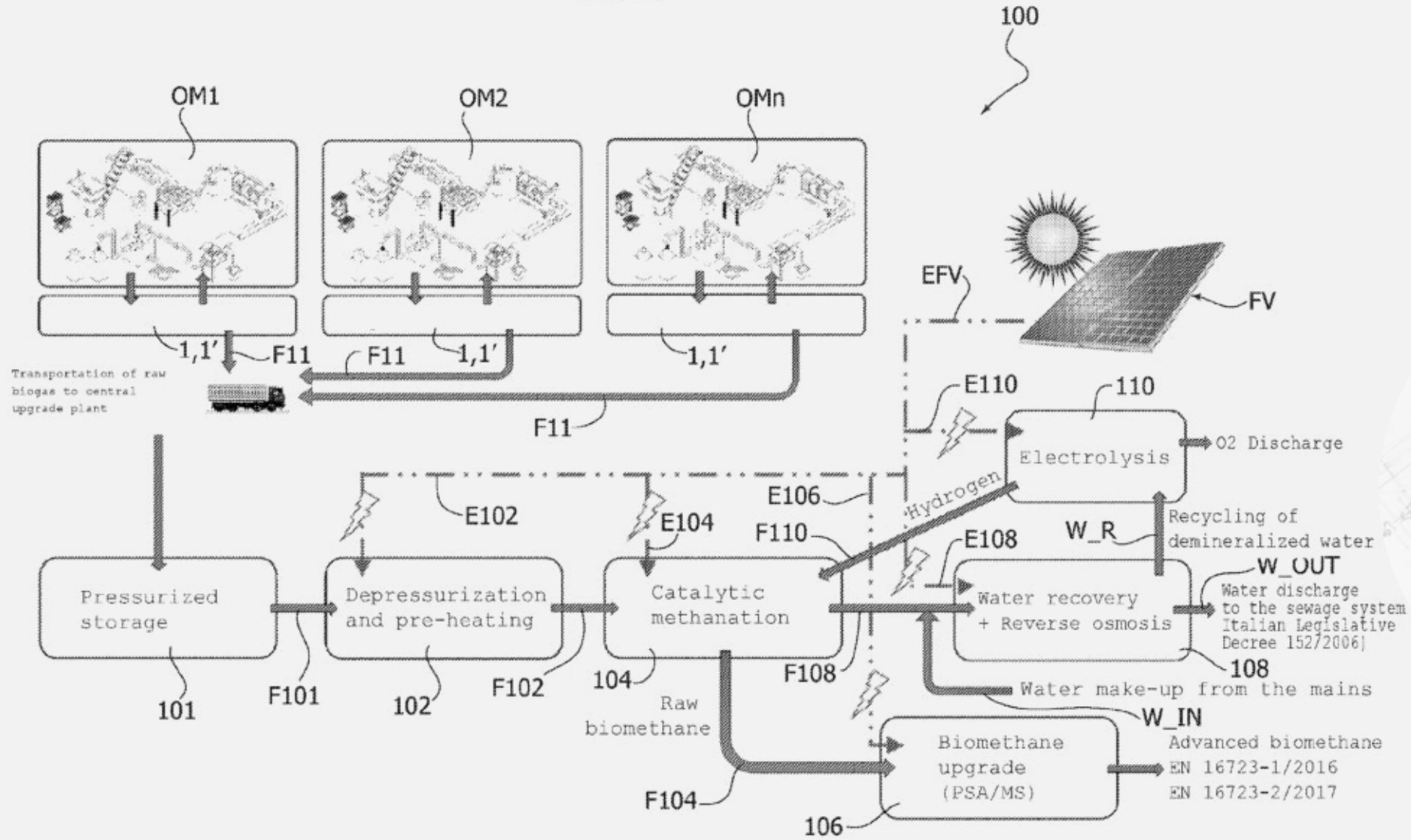
PATENT DESIGNS

FIG. 2



PATENT DESIGNS

FIG. 3



Known technique and general technical problem

Waste water from oil mills mainly includes olive vegetation water, intrinsically contained in the olive fruit up to more than 50% by mass, and water added during the extraction process.

The amount of waste water produced depends on the extraction method implemented: for example, the three-stage centrifugation generates at least twice the amount of water produced as the oil produced, while the two-stage treatment generates the least amount of waste (equal to about 10% of the mass of the processed olives).

The composition of the waste is also highly dependent on the process technology chosen, but it can be assumed that on average there is about 80% water, 15-18% organic constituents (mostly sugars) and about 2% inorganic salts. The pH of the solution is generally less than 5.5 and the chemical oxygen demand (COD) can reach 200000 ppm, an extremely high value which, together with the presence of rather stable phenolic compounds, makes the waste water from the mills a production residue that is particularly problematic from a health and environmental point of view, due to the high toxicity for plants and animals.

Membrane processes in crusher wastewater treatment offer some advantages over conventional biological, chemical, physicochemical and thermal processes, including low specific consumption, absence of additives and phase change.



Known technique and general technical problem

On the other hand, these processes involve technological problems related to the phenomenon of polarization of concentrations and fouling of membranes caused by the particular composition of wastewater.

Typically, membrane processes contemplate the combination of different technologies characterized by a characteristic size of the filtering element gradually decreasing, passing from the first stage of microfiltration and ultrafiltration (among the treatments that allow to reduce the content of suspended solids) to a second stage of nanofiltration and reverse osmosis (among the treatments to reduce the content of polluting organics and recover pure water).

A further problem of oil mill wastewater consists in the high energy expenditure against a poor reusability of the purified wastewater. This essentially consists of water that – although it can be reintroduced into the grid – does not lead to any substantial conversion or recovery of the energy spent in purification.



Field of Application

The invention has been developed with particular reference to plants in which it is necessary to dispose of wastewater with organic content, particularly oil mill wastewater, including:

- ❖ prepare a flow rate of aqueous wastewater (F1) with organic content,
- ❖ pressurize (2, F2) said flow rate of aqueous wastewater to a pressure value equal to or greater than the pressure value at the critical point of water and heat said flow rate of aqueous wastewater to a temperature value equal to or greater than the temperature value at the critical point of water,
- ❖ Process the flow rate of aqueous wastewater (F2) pressurized and heated by means of a supercritical water reactor,
- ❖ Send the processed aqueous wastewater (F4) by the supercritical water reactor to a catalytic hydrogenation treatment.



Potential Users Interested

Plant Operators for the production of e-fuels and bio-fuels:

Industry:

- ❖ Olive processing
- ❖ Oil mills
- ❖ Dairies
- ❖ Chemical
- ❖ Pharmaceutical;
- ❖ Agri-food
- ❖ Paper mills;
- ❖ Refineries
- ❖ Tanneries
- ❖ Production and treatment of polymers, rubbers and plastics
- ❖ Fossil energy production
- ❖ Process Equipment Factories & Manufacturers



Conclusions

Summary of Key Points

Patenting and selling licenses offer unique opportunities to enhance innovation and generate revenue. Making the most of the benefits of an effective licensing strategy is critical.

Maximizing Profits

Optimizing the use of patents and licenses allows you to maximize profits and effectiveness in the market, ensuring a position of competitive advantage.

Action for Enhancement

To fully capitalize on patents and licensing, it is essential to develop and implement a targeted strategy, taking advantage of the various opportunities offered by the market.

