APPENDIX

Improvements in the method and process of thalassotherapy

Claims

1. Method and process of thalassotherapy, wherein the sea water is firstly subjected to a treatment able to alter its composition, characterized in that said treatment comprises the substantial removal of sodium chloride, so as the residual liquid compound is the magnesium chloride in solution.

2. Method and process of thalassotherapy according to claim 1, characterized in that said residual liquid compound has a density comprised between 28° and 30° of Baumie scale (about 1.340 Kg/dm) .

3. Method and process of thalassotherapy according to any of the preceding claims, comprising a plurality of thermal bathing pools on which the subject in therapy is able to plunge, characterized in that a first of said thermal bathing pools contains said residual liquid compound.

4. Method and process of thalassotherapy according to claim 3, characterized in that a second of said thermal bathing pools contains sea water added with additional integral salt in order to obtain hypersalt sea water having a density comprised between 18° and 20° of Baumie scale.

5. Method and process of thalassotherapy according to claim 3, characterized in that said residual liquid compound is maintained at a temperature comprised between 35°C and 39°C.

6. Method and process of thalassotherapy according to claim 4, characterized in that said hypersalt sea water is maintained at a temperature comprised between 36°C and 38 °C .

7. Method and process of thalassotherapy comprising a plurality of thermal bathing pools and wherein the sea water is firstly subjected to a treatment able to alter its composition, characterized in that a first of said thermal bathing pools is filled with magnesium chloride in solution.

8. Method and process of thalassotherapy according to claim 7, characterized in that said magnesium chloride in solution is obtained as residual liquid compound from the sea water during the treatment of the sea water for the production of sodium chloride.

9. Method and process of thalassotherapy according to claim 7, characterized in that a second of said thermal bathing pools is filled with sea water hypersalt by the addition of sodium chloride.

10. Method and process of thalassotherapy according to claim 3 or 7, characterized in that a third of said thermal bathing pools is filled with sea water maintained at a temperature comprised between 33°C and 35°C.

11. Method and process of thalassotherapy according to claim 3 or 7, characterized in that a fourth of said thermal bathing pools is filled with sea water maintained at a temperature comprised between 28°C and 30°C.

12. Method and process of thalassotherapy according to claim 11, characterized in that the subject in therapy is sequentially plunged, for

predetermined periods of time, into said four thermal bathing pools, starting from said first thermal bathing pool and ending with said fourth thermal bathing pool.

13. Use of the magnesium chloride in solution for therapeutic purposes, substantially as described hereinbefore.

Description

Field Of The Invention

The present invention relates to improvements in the method and process of thalassotherapy, wherein the sea water, before being used in the therapeutic process, is previously treated both for altering its natural composition and for increasing its temperature.

Background Of The Invention

It is well known, since the antiquity the use of the sea water for therapeutic scopes. It is also known to heat the sea water in order to increase the pleasure to plunge into the thermal bathing pool.

Summary Of The Invention

The improvements in the method and process of thalassotherapy according to the present invention comprises the step to preliminarily trait the sea water, in order to change its natural composition, before putting it into a

plurality of thermal bathing pools on which the subject in therapy is suggested to plunge for a predetermined period of time, as function of the objectives to be pursued.

According to a first characteristic of the present invention, the sea water is preliminary treated to substantially remove the sodium chloride, commonly known as "salt", from there and to transform the same sea water in magnesium chloride in solution. The magnesium chloride in solution is normally obtained as residual liquid compound from the salt-works, in the production of salt starting from the sea water and till now has been substantially used solely for industrial purposes as, for example, the regeneration of shields in sugar-refineries.

According to a second characteristic of the present invention, the sea water is subsequently treated in order to increase the percentage of sodium chloride contained therein, by adding salt to the sea water.

These and other characteristics of the present invention will be described in more detail, by way of example, without reference to any drawing, which are not necessary for the understanding of the present invention.

Detailed Description Of The Invention

The method and process of thalassotherapy according to the present invention comprises four bathing pools (i.e. pool N°l, pool N°2, pool N°3 and

pool N°4) having each one sufficient dimensions to permit to a human being (subject in therapy) to plunge into the liquid contained therein.

It is obvious that each of said bathing pools may have dimensions sufficient to contain a plurality of people and become an actual swimming pool or thermal basin.

The first bathing pool (pool N°l) is filled with magnesium chloride in solution, pre-heated at a temperature comprised between 35°C and 39°C. Said magnesium chloride in solution has a density comprised between 28° and 30° of Baumie scale (corresponding to about 1.340 Kg/dm'), which causes a floating of the human body very higher than the normal floating in an untreated sea water or fresh water which, as known, have a density comprised between 8° and 9° of Baumie scale.

In this manner the magnesium chloride in solution increases the antigravitational action which normally has also the sea water at its own low density. Moreover the effect of the high floating of such liquid compound (the magnesium chloride in solution) permits its use for therapeutic purposes of functional rehabilitation. The high concentration of magnesium (Mg++) in the liquid compound also determines a certain transdermal absorption of the same compound by the plunged subject, which absorption, as well known, has an antispastic and myorelaxing action; in fact its antagonizes Ca++.

The magnesium chloride in solution, due to its high concentration of magnesium (Mg++) and its myorelaxing action, can be used also in the

skeleton-muscle pathology and for help and increasing the general, muscular relaxation, first step in any relaxing training techniques. In addition to the foregoing, said liquid compound performs a myorelaxing action also in the desmenorrheic syndrome and in the women premestrual tensions. The magnesium chloride in solution, for the aforementioned properties, is suitable to be used also in the psychophysical preparation to childbirth, because it helps the relaxation of pelvic and perineal musculature; relaxation which can be obtained by means of any technique, which effects are amplified and increased by the plunge in said first bathing pool (pool N°l) containing the magnesium chloride in solution obtained from the sea water.

For the same reasons, also any stretching exercise, for which the reaching of the muscular relaxation must be pursued for psychological and pathological objectives, is facilitated and developed by means of the plunge of the human body into the liquid compound contained into said first bathing pool (pool N°l).

The magnesium chloride in solution, for its above mentioned properties and for its particular saline concentration, can also be utilised both for topical use in some dermal pathologies (psoriasis) and as dehydrating antiedemigenic action and, therefore, also as antihypertensive agent in massotherapy applications, either pure or as drug vehicle.

The second bathing pool (pool N°2) is filled with sea water previously added with other integral salt, so as to increase the saline concentration and density (about 18°-20° of Baumie scale), and pre-heated at a temperature

comprised between 36°C and 38°C. Also in this case a high floating of the subject in therapy and an increased ionic exchange between the plunged body and the hypersalt water is obtained. The hypersalinity of the sea water put into the second bathing pool (pool N°2) allows the utilisation of such a water for curative and preventive therapeutic scopes, as dermal pathology (psoriasis), osteo muscle tendinous and joints pathology; this due both to the physical effect of the water (floating) with rehabilitative therapeutic action and to the chemical action of salts absorbed by ionic exchanges, with myorelaxing and decontracturing action. Into said second bathing pool (pool N°2) can also be accomplished the already known technique of childbirth into water, facilitated by the myorelaxing action of said hypersalt water with respect to the water normally used for such purpose, with the advantage to shorten the labour time before childbirth, the expulsive stage and fetus coming out, owing to the floating action.

The third and fourth bathing pools (pool N°3 and pool N°4) are filled with sea water previously pre-heated at temperatures comprised between 33°C and 35°C (pool N°3), and respectively between 28°C and 30°C (pool N°3).

The sequential plunge of the subject in therapy in the four bathing pools for predetermined periods of time (10-20 minutes), starting from pool N°-l and ending to pool N≤4, permits to increase the already well known positive effects of thalassotherapy on human organism. In fact the sea water, treated as described above and contained in the four bathing pools, allows and facilitate the exchange between the organism and the liquid, owing to the high

concentration of some essential compound as the magnesium and sodium salts. The different concentrations permit to obtain different degrees of floating, which can be exploited for rehabilitation purposes in chronic and intense pathology, and also in physiological situations associated to the physical and muscular general preparation.

The different and suitable temperatures of liquids contained in the four bathing pools, associated to the different concentrations of the salts contained therein, allows and favours the ionic and water exchanges with the organism, also exploiting a vasal gymnastics with vasodilating and vasoconstictive action.

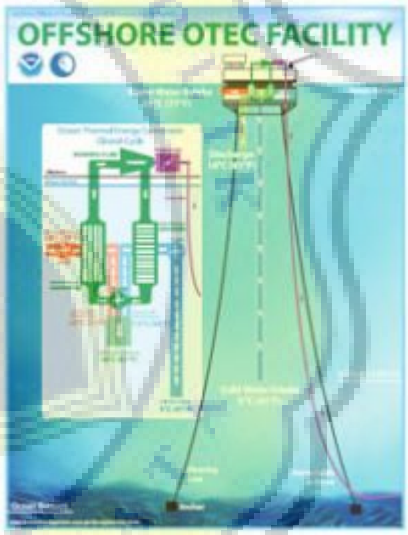
It is obvious that various modifications of the above-described method and process of thalassotherapy are possible, within the scope of the invention hereinbefore described.

Ocean Thermal Energy Conversion

The vast ocean, tens of thousands of kilometers long coastline, the equator, and a splash of sunshine throughout the year. What does it mean? Hot country, whose population is separated islands so that the development of the country becomes difficult. However, all of these factors is a potential energy to support Ocean Thermal Energy Conversion (OTEC), which in the future can be considered to be developed because it is supposed to be realized, that Indonesia is not rich in fossil energy sources and still hanging on imported energy supply.

What is OTEC?

Ocean Thermal Energy Conversion or OTEC is a method of generating electrical energy using the temperature difference between the seabed and seawater surface to run a heat engines. Like heat engine as always, the greatest energy efficiency generated by a great temperature difference, according to the Second Law of Thermodynamics. Typically used rule-of-thumb temperature difference of 20 ° C to ensure OTEC facilities can run well. The biggest challenge is the efficiency of heat engines are still below 6% because there are operations on small temperature differences, meaning that more than 90% of the heat energy is extracted from sea level "wasted". For the construction of generating facilities can be done on the ground or with a floating platform in the middle of the ocean, the farther the source of energy of the shoreline of the cost will be even greater.



There are 3 types of cyclic heat engines used, closed-cycle, open-cycle, and hybrid systems.

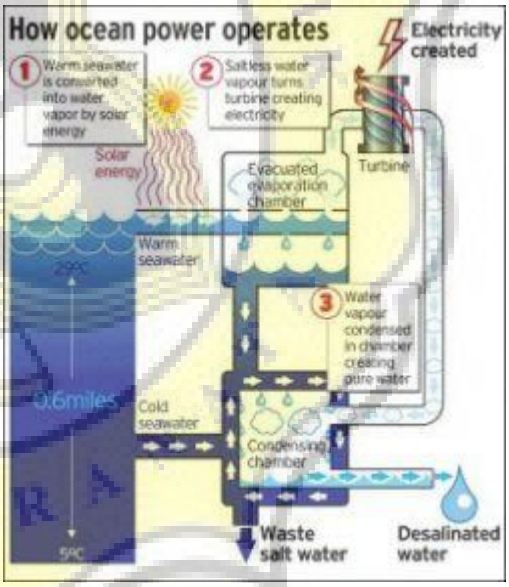
1. Closed-Cycle (Closed Cycle):

   The first is the concept of OTEC system. To obtain high efficiency, the working fluid that is used to turn a turbine to generate electricity in a gas phase (system Rankin). Because it is difficult to boil sea water with the

surface temperature in a closed-cycle systems use fluid with a low boiling point (such as ammonia or Fluorocarbon refrigerants). Warm water is used for mengevaporasi working fluid and cold water from the ocean floor is used as a condenser, so as to create conditions of temperature differences are ultimately converted into kinetic energy turbine player. Disadvantages of this system is the heat exchanger of this model is expensive, besides generating fluid category of hazardous materials that are at risk in the event of a system leak.

2. Open-Cycle (Cycle Open):

To overcome the shortcomings of a closed-cycle system, it is developing an open-cycle using warm surface ocean water as a working fluid to generate electricity. The sea water was given under vacuum, causing flash evaporation, this steam is used to turn turbines.



Disadvantages of this system is the efficiency of the engine, less than 0.5% by mass of warm water that can be evaporated, so it takes a large flow rates are accommodated with large components, but still the system is to cut the cost of expensive heat exchangers closed-cycle.

3. Hybrid System (Combined Cycle):

Cycle hybrid uses the advantages of open and closed cycle system. Hybrid cycle using sea water is placed in a low-pressure tank (vacuum chamber) for dijaikan steam. Then the steam is used to evaporate the low boiling fluid (ammonia or other) that will drive a turbine to generate electricity. Sea water vapor is then condensed to produce fresh water desalination.

Environmental Benefit and "Product Side" OTEC technology

As a source of renewable energy and environmentally friendly, the use of OTEC reduce the adverse effects of fossil energy use such as clearing land for exploitation, emissions of fossil fuels and other waste generated, and ecologically positive impact it will enrich the nutrients in surface sea water. However, there has been no comprehensive analysis of the impact of development on the environment OTEC facilities.

Although the initial investment cost of OTEC is deemed too expensive, but the latest research shows various potential OTEC useful byproducts, thus increasing the value of all economies of OTEC technology. "Product Side" of OTEC include:

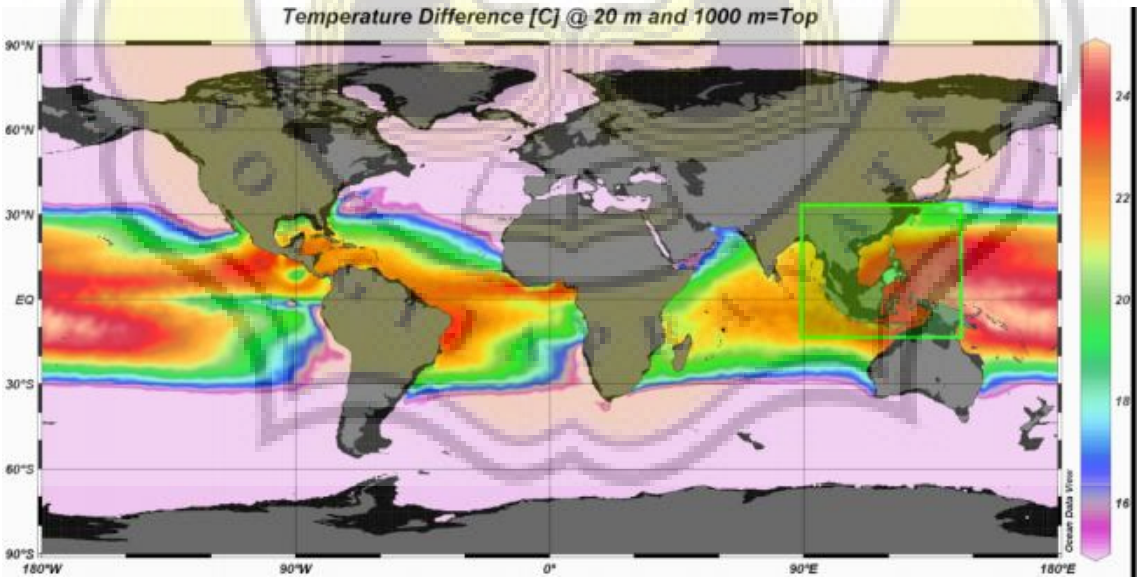
Surface temperature cooling. The concept is the residue of cold water that is pumped from the sea floor can be used to cool the surface temperature and reduce the effects of global warming, let alone the temperature of hot

tropical regions. Its application can vary, ranging from use as a residential air conditioner, can also as agriculture and fisheries applications, so it is possible the cultivation of products which require cool temperatures in the cultivation process. Moreover, it can be reduced the adverse effects such as surface temperature rising storm.

Freshwater. Fresh water resulting from vaporization and condensation process can be used as a consumption or agricultural irrigation, especially for small island about facilities that difficult to get access to fresh water.

Nutrients in the sea water. Sea water in the nutrient rich and low pathogenic, so it is good for the cultivation of marine organisms.

Potential OTEC development in Indonesia



Indonesia is an archipelago situated in the tropics, where the waters of Indonesia generally have different water temperature and sea surface in a very high, as well as the intensity of ocean waves and the possibility of a small storm, so it fits in the development of OTEC technology. potential heat

generated ocean heat of 2.5 x 1023 joules with electrical efficiency of 3 percent or nearly equivalent of 240,000 MW.

In addition, the demographics of people living in small islands or remote coastal areas still untouched by development of electricity infrastructure, which is difficult to develop plants in such areas. With the development of infrastructure and its byproducts such as this, the expected development of the nation is also felt in rural areas, with more evenly.

Typical of Indonesia in and have a high temperature difference. So OTEC can be developed in the area south of the island of Sumatra, Java, and Bali to the development of the large market and almost all the islands of the central and eastern regions of Indonesia to reach rural areas with small markets.

Some of the private sector in Indonesia actually has developed this technology to reach commercial stage, but is still limited to the use of this technology has not provided a great share. In addition, the need for attention and involvement of big government for the development and utilization of alternative energy from the sea, in an effort to confront the energy crisis that occurred in the present.

One more obstacle is the dependence on fossil fuel power plants. Even for the conversion of coal to oil or natural gas, the reserves and the potential is huge in this country, and even then requires a long process, and is still a great reluctance to develop renewable energy generation. The solution is still subsidized, and very large subsidies associated with the policy, which may be changed every 5 years.