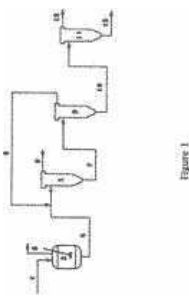
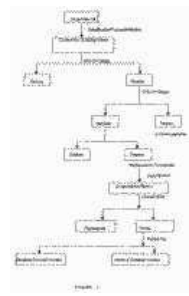
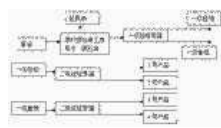
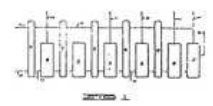
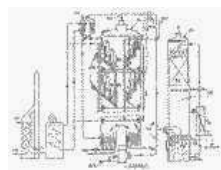
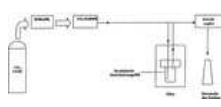
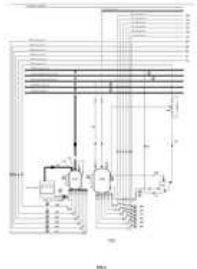
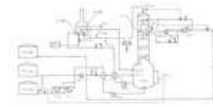
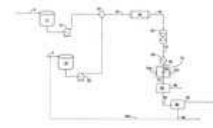
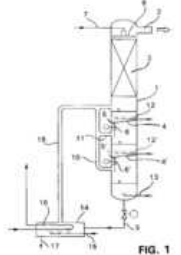
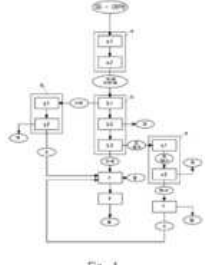
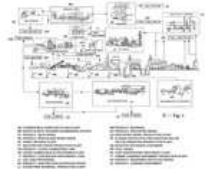
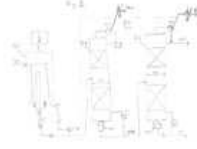


3546 results for 2 AND (COLUMN OR STAGE) - Collection: FAMPAT

#	Title	Publication number	1st app. date	Applicant/Assignee	
1.	Process for the production of tocopherol and tocopherol/tocotrienol concentrates	IL115888	1994-11-07	EASTMAN CHEMICAL*	100 %
Disclosed is an improved process for the preparation of tocopherol and tocopherol/tocotrienol concentrates from vegetable oil distillates. Tocopherol concentrates are obtained containing 20-80 % tocopherol by weight, with an overall recovery of tocopherol of 72 % to 97 %. The process is comprised first of an esterification reaction where the more volatile alcohols are converted to their less volatile fatty acid esters, followed by a series of distillation steps where components boiling higher and lower than the tocopherols are separated from tocopherols and other like boiling substances. Advantages of the process are that tocopherol and tocopherol/tocotrienol concentrates are produced efficiently and economically in a minimum number of steps without the use of solvents and with a relatively small capital investment. 					
2.	Extraction of vitamin e, phytosterols and squalene from palm oil	CN1477147	2002-08-20	MALAYSIAN PALM OIL BOARD* MALAYSIAN PALM OIL BOARD KAJAN MALAYSIAN PALM OIL BOARD MPOB	99 %
Phytosterols, squalene and Vitamin E are recovered from phytonutrients concentrate derived from crude palm oil by the disclosed invention via esterification, transesterification, vacuum distillation, saponification, crystallization and organic solvents partitioning. Crude palm oil is subjected to esterification and transesterification for the production of crude palm oil methyl esters. Phytonutrients concentrate containing phytosterols, squalene, Vitamin E and unreacted monoglycerides is recovered from crude palm oil methyl esters by multi-stages vacuum distillation in which components with higher molecular weight are filtered during second stage vacuum distillation. The purified phytonutrients concentrate is subjected to saponification process and the unsaponifiable matter is added to a combination of solvents for crystallization of phytosterols. The filtrate enriched in squalene and Vitamin E is separated to its individual squalene-rich layer and vitamin E-rich layer via organic solvents partitioning. <IMAGE> 					
3.	Refining of edible oil rich in natural carotenes and vitamin e	EP0839896	1996-10-31	GLOBAL PALM PRODUCTS* GLOBAL PALMITIC PRODUCTS HAI LOO TRADING PTE	99 %
The invention discloses a process for the production of a natural carotene rich refined and deodorised oil by subjecting the oil to a pressure in the range 0.003 mbar to 0.08 mbar and a temperature in the range 160 DEG C to 200 DEG C in a short path distiller, and removing free fatty acids (FFA) in the oil by condensation within the distiller. The FFA is preferably removed by subjecting the mixture of the oil and the FFA to an internal condenser system operating at a temperature greater than the melting point of FFA in the oil. The process yields a refined, deodorised oil, in particular palm oil, where the carotene and Vitamin E contained in the feed oil is substantially retained in the processed oil.					
4.	Heavy oil short-path distillation (molecular distillation) continuous production process	CN102719266	2012-07-03	NINGBO BOHUI PETROLEUM CHEMICAL*	99 %
A heavy oil short-path distillation (molecular distillation) continuous production process includes the steps of subjecting heavy oil raw materials of residual oil, wax oil, oil slurry, fuel oil and the like to pretreatment; preheating the raw oil, removing water and dissolvable gases from the raw oil in a degassing dry tower, continuing to heat the raw oil, feeding the raw oil into a rectifying tower and removing light oil; then feeding the raw oil into a first-stage short-path distiller, using conduction oil to heat the raw oil and subjecting the raw oil to cutting and separation to obtain first-stage light phase oil and first-stage heavy phase oil; feeding the first-stage light phase oil into a second-stage short-path distiller and separating the first-stage light phase oil to obtain a 2# mixed aromatic oil product and a 3# mixed aromatic oil product; and feeding the first-stage heavy phase oil into the second-stage short-path distiller, heating the first-stage heavy phase oil and separating the first-stage heavy phase oil to obtain a 4# mixed aromatic oil product and a raffinate superheavy aromatic product. Compared with conventional distillation processes, the heavy oil short-path distillation (molecular distillation) continuous production process is low in operation temperature and distillation pressure, short in heating time, high in separation degree, small in investments of fields and devices and the like. 					
5.	Methods and apparatus for dynamically refining and deodorizing fats and oils	EP0235422	1986-03-05	RIVERS	99 %
A method and apparatus for distilling, especially vacuum refining and deodorizing edible oils and fats utilizing sheets of oil driven downwardly in a distiller with a vacuum source at its top Fig 3.4. A nozzle includes pressure equalization chambers, cantilever adjustment screws, and a central drag sheet to produce longer lasting and more uniform thin oil sheets to be driven in the distiller Fig. 5 and 11. A continuous process deaerates, dehydrates, degums Fig. 1 and 10, bleaches Fig. 1 and 12, refines Fig. 1 and 14, removes tocopherol Fig. 1 and 16, deodorizes Fig. 1 and 18, and strips peroxides and hydroperoxides Fig. 1 and 20, from raw oil in a series of isothermally staged utilizing driven sheet distillers. No stripping steam is used except in the stage which strips peroxides and hydro peroxides. The method produces valuable, pure products such as tocopherol and fractionated fatty acids. It is especially efficient in heat exchange and low in waste and pollution producing products. A steam sparging nozzle for distributing steam in the stripping of peroxides and hydroperoxides includes a plurality of small tubes with openings which restrict steam flow so as to produce a uniform distribution of optimum size steam bubbles in the steam stripping column of oil Fig 12 and 13. A microwave excitation device radiates the oil immediately prior to forming the driven sheets to excite the more volatile components of the oil for distilling. 					
6.	An improved method and process of distillation/deodorisation of oils, fats and fatty acids.	EP0520097	1991-06-19	PANCHAL MULSHANKAR SABURBHAI*	99 %
An improved method and process of distillation and deodorisation of oils, fats or fatty acids is disclosed. It comprises the steps of first pre-heating (90) a feedstock, further preheating (20) the feedstock, then cascading (80) the feedstock in a series of processing tray members, followed by cooling the same through a final heat exchange means (90), and then recovering (30) whatever fatty matter remained in the issuing vapours: The movement of the feedstock is achieved under the influence of vacuum. The invention discloses several improvements in the members and apparatus. <IMAGE> 					
7.	Extraction of carotene, vitamin e and other minor components from natural oils and fats, for use in pharmaceuticals and food products, involves extraction of a concentrate with supercritical fluid, preferably carbon dioxide	DE102004041612	2003-08-27	MALAYSIAN PALM OIL BOARD*	99 %
Extraction with a supercritical fluid is used for extracting carotenes, Vitamin E and other minor components such as squalene and phytosteroids from natural oils and fats. A method for the extraction of carotenes, Vitamin E and other minor components such as squalene and phytosteroids from natural oils and fats, by (I) making a concentrated mixture containing the above components and (II) extracting the mixture with a supercritical fluid (SCF), preferably at 28-120 [deg]C and 60-600 bar, to give a concentrate of the carotenes, a concentrate of Vitamin E and/or concentrates of the other components. An independent claim is also included for preparations of the above substances obtained by this method. 					
8.	Composition containing vegetable oils, animal oils or purified compounds rich in omega-3 and a refined avocado oil rich in triglycerides	WO2007057439	2006-11-17	LAB EXPANSIENCE LABORATOIRES EXPANSIENCE*	99 %
Process for obtaining triglyceride rich refined avocado oil, comprises controlled dehydration of fresh avocado fruits having undergone preliminary transformations preferably at -50-120[deg]C, extraction of the oil from the dehydrated fruits, fractionation of oil to its triglyceride rich fraction and refining of the triglyceride rich oil fraction. Independent claims are included for: (1) the triglyceride rich refined avocado oil comprising a unsaponifiable fraction rich in sterols; and (2) a composition comprising the triglyceride rich avocado oil at 5-95 wt.%. ACTIVITY : Dermatological; Cardiovascular-Gen; Antiarthritic; Osteopathic; Antirheumatic; Antiinflammatory. MECHANISM OF ACTION : None given. 					

9.	Method for obtaining phytosterols and/or tocopherols from residue of a distillation of the esters of vegetable oils, preferably from distillation residue from a transesterification of vegetable oils	DE102011117510	2011-11-02	VERBIO VEREINIGTE BIOENERGIE*	99 %	
The invention relates to a method for obtaining and purifying phytosterols and/or tocopherols from distillation residue from a transesterification of vegetable oils, in particular from the vegetable oil-based fatty acid methyl ester production for the field of use of biodiesel (FAME), comprising a first transesterification stage for converting partial glycerides contained in the distillation residue; separating the glycerin phase from a reaction mixture resulting from the first transesterification stage ; a second transesterification stage for converting sterol esters contained in the reaction mixture; adding water to the reaction mixture after the second transesterification stage in order to generate a multiphase system; simultaneously or sequentially separating the phases of the multiphase system into a substantially sterol-containing phase; a substantially glycerin- and methanol-containing aqueous phase; and a tocopherol-containing methyl ester phase; and obtaining phytosterols from the sterol-containing phase; and optionally obtaining tocopherols from the tocopherol-containing methyl ester phase. The invention further relates to a method for purifying a phytosterol phase and/or phytosterols.						
10.	Oil refining system, method for refining rice bran oil by using system, and prepared rice bran oil	CN104194929	2014-09-04	CHEN HANQING	99 %	
An oil refining system, a method for refining rice bran oil by using the system, and prepared rice bran oil. The oil refining system comprises a water circulation system, a deacidification and deodorization system, and a decoloration system. The water circulation system comprises a chilled water circulation unit, a hot water circulation unit and a room-temperature water circulation unit. The chilled water circulation unit comprises a chilled water device and a chilled water pipeline. The hot water circulation unit comprises a hot water device and a hot water pipeline. The room-temperature water circulation unit comprises a room-temperature water pipeline. The deacidification and deodorization system comprises a preheating unit, an evaporation unit, a first condensation unit, a first heat-conducting oil pipeline and a second heat-conducting oil pipeline. The decoloration system comprises a first reheating unit, a first distillation unit, a second condensation unit, a third heat-conducting oil pipeline and a fourth heat-conducting oil pipeline. The method for refining rice bran oil comprises deacidification and deodorization, decoloration, three-step refining, and defatting by winterization.						
11.	Process of converting rendered triglyceride oil from marine sources into bland, stable oil	CA2260397	1999-01-29	ATLANTIS MARINE*	99 %	
Triglyceride oil derived from marine sources, mammalian and fish, is treated with a silica at relatively low temperature under vacuum and is then further treated with a bleaching clay under vacuum and at higher temperature. The silica and the bleaching clay are then separated from the oil. The oil treated by this method is essentially free of proteinaceous materials, phosphatides and mucilage, pro-oxidant metals and very low in colored compounds, and is suitable for deodorizing. The deodorized oil is completely bland, unchanged in the concentration of the long-chain highly unsaturated fatty acids (EPA, DPA and DHA), very low in color, peroxides and secondary oxidation products, free of pesticides and has very good flavor stability. The method avoids the use of any chemicals, such as in the acid and base treatments required in conventional degumming and alkali refining of oils of marine origin. This avoids the formation of artifacts in the oil and trace contamination with chemicals. It also reduces the number of process steps required to produce deodorized food oil from marine sources, which is advantageous in respect to oil quality, process losses and processing costs. The method is especially environmentally advantageous, since it avoids the need for soapstock and waste water processing entirely. Refined oil produced by the method is useful as a nutritional supplement and in methods of therapy or medical treatment.						
12.	Wellbeing oil	KR20090024000	2007-09-03	CHUN HYUN CHUL;JEON WON CHAN;JEON BYUNG KYUN	99 %	
A compound of healthful oil and a manufacturing method thereof are provided to prevent oxidation and absorb smell of cooking oil. A manufacturing method of a compound of healthful oil includes a step for determining a material and a mixing ratio and a step for performing a selecting process, a crushing process, a mixing process, a squeezing process, a steaming process, a deodorization bleaching process, a concentration controlling process, a sterilizing process, and a packing process of the material. The compound of the healthful oil contains 60-70 weight% of cooking oil, 33-20 weight% of green tea, 5-8 weight% of stevia, 0.8-1.2 weight% of a citric acid, and 1.2-0.8 weight% of vitamin C on the basis of total weight.						
13.	A thermal cracking process for manufacturing the cracking gas oil from the used oil	KR20010108725	2000-05-31	KANG HO KEUN*	99 %	
PURPOSE: A method for producing cracking gas oil from used oil is provided to remove various harmful materials including heavy metals and to economically improve quality and yield of the cracking gas oil by thermal decomposition of oxides, heavy metals and slurry contained in the used oil at high temperature. CONSTITUTION: The method comprises using a used oil or a mixture obtained after blending the used oil with a cracking heavy oil produced by removing colloid materials in high boiling point hydrocarbon oil generated at bottom portion of a distillation column in a first separation device as a raw material; circulating the raw material through a vertical thermo-decomposition heater comprising multiple pipes and passing the decomposed material through a sieve tray type distillation column and removing water content in a condenser; using off gas on top portion of the column as a heat source of the thermo-decomposition heater; and condensing hydrocarbons having a lower boiling point to be vaporized out of the distillation column to result in a reformed oil, that is, the cracking gas oil. (C) KIPO 2002						
14.	Method for reducing trans fatty acid content in vegetable oil grease by two-stage type deodorization tower	CN101993779	2010-11-12	NORTHEAST AGRICULTURAL UNIVERSITY*	99 %	
The invention relates to a method for reducing trans fatty acid content in vegetable oil grease by a two-stage type deodorization tower, belonging to the technical field of food safety. The method comprises the following steps of: using decolored soybean oil as a raw material, selecting a heating-type stripping distillation deodorization tower, using the two-stage deodorization process so that most materials with higher vapour pressure of ketone, aldehydes, and the like are removed in an upper-segment plate-type tower, and heating the oil grease to high temperature under the limited vacuum state so that the fatty acid and hydrocarbon with high boiling point are removed in a lower-segment plate-type tower. Compared with the traditional plate-type decoloration tower, the invention reduces the heating time of the oil grease under the condition of not reaching limited vacuum state, reduces the content of trans fatty acid, decreases the trans isomer, improves the quality of refined oil product and ensures that the content of trans fatty acid in the refined oil product is controlled below 1.0%.						
15.	Combined type deacidification and deodorization tower suitable for deodorizing edible oil in oil industry	CN103409236	2013-09-03	HENAN GRAIN TECHNOLOGY*	99 %	
The invention discloses a combined type deacidification and deodorization tower suitable for deodorizing edible oil in an oil industry. The combined type deacidification and deodorization tower comprises four parts in all from top to bottom; the combined type deacidification and deodorization tower particularly comprises a filler type fatty acid collecting section, a filler previous-deodorization section, a drum membrane deodorization section and a mammoth pump deodorization and decolouration section which are sequentially connected together hermetically and fixedly from top to bottom, wherein the mammoth pump deodorization and decolouration section is position at a bottom. The combined type deacidification and deodorization tower disclosed by the invention can be suitable for different types of oil by combining with the advantages of the traditional towers, such as a plate column , a filled tower and a tray tower, and has the outstanding characteristics of high deodorization capacity, steam saving (about 40% of the air consumption of an original plate tower) and low content of trans-fatty acids (a main oil index, the less content, the better, the substance is easy to generate under the condition of high temperature).						
16.	Process to upgrade highly waxy crude oil by hot pressurized water	US20090139715	2008-11-24	ARAMCO SERVICES SAUDI ARABIAN OIL*	98 %	
A continuous process for upgrading highly waxy crude oil by contacting the highly waxy crude oil with supercritical water fluid to produce low pour point, high value crude oil having low sulfur, low nitrogen, and low metallic impurities for use as hydrocarbon feedstock.						

17.	Vacuum distillation	NL46159	1936-02-15	KODACK* KODAK	98 %
In the high-vacuum short-path distillation of substances yielding fractions containing vitamins, sterols, hormones or unsaturated glycerides, or a fraction obtained therefrom still requiring distillation, another liquid is added to the distilland having a vapour pressure lower than that of the distillate under the conditions appertaining, so as to prevent deposition of non-volatile residuum upon the distilling surface. Original materials specified comprise animal oils such as salmon, menhaden, cod - liver, herring, halibut, and mackerel oils; vegetable oils such as linseed, walnut, wheat-germ, cotton-seed, and soya-bean oils, waxes containing unsaturated glycerides; and germinal gland hormone concentrates. Examples of suitable added liquids comprise esters such as benzyl, butyl, amyl, and octyl phthalates, triacetine, methyl oleate, methyl stearate, oils such as olein or castor oil; high boiling-point hydrocarbons; high boiling-point alcohols; and the lowest vapour pressure fraction of the material being distilled. The proportions of distilland and added liquid may vary from 1/200 part to 25 parts of the latter to 1 of distilland. The added liquid may be separated from the distilland and re-used and this separation is facilitated by using a liquid immiscible at ordinary temperatures, but miscible with the distilland at the temperature of distillation. Molecular distillation may be used, and the temperatures, pressures, and distance apart of the evaporating and condensing surfaces may all be varied according to the particular distilland. In an example, linseed oil is subjected to molecular distillation at temperatures between 140-225 DEG C. and four fractions withdrawn leaving 5 per cent of the oil as a viscid mass in the last column. Distillation of fresh material is continued until the latter accumulates. This viscous oil is then returned and mixed with the oil entering the same column. U.S.A. Specifications 1,925,559, 1,942,858, and 1,955,321 are referred to. ALSO: In the high-vacuum short-path distillation of substances yielding fractions containing vitamins, or sterols, or a fraction obtained therefrom still requiring distillation, another liquid is added to the distill and having a vapour pressure lower than that of the distillate under the conditions appertaining so as to prevent deposition of non-volatile residuum upon the distilling surface. Original materials specified comprise animal oils such as salmon, menhaden, cod liver, herring, halibut, mackerel; and vegetable oils such as linseed, walnut, wheat-germ, cotton-seed, soya bean. Examples of suitable added liquids comprise esters such as benzyl, butyl, amyl, and octyl phthalates, triacetine, methyl oleate, methyl stearate; oils and hydrocarbons such as olein, castor oil, high boiling point hydrocarbons; high boiling point alcohols; and the lowest vapour pressure fraction of the material being distilled. The proportions of distilland and added liquid may vary from 1/200 part to 25 times of the latter to 1 of distilland. The added liquid may be separated from the distilland and re-used and this separation is facilitated by using a liquid immiscible at ordinary temperatures but miscible with the distilland at the temperature of distillation. Molecular distillation may be used, and the temperatures, pressures and distance apart of the evaporating and condensing surfaces may all be varied according to the particular distilland. In an example, linseed oil is subjected to molecular distillation at temperatures between 150-225 DEG C. and four fractions withdrawn leaving 5 per cent of the oil as a viscid mass in the last column. Distillation of fresh material is continued until the latter accumulates. This viscous oil is then returned and mixed with the oil entering the same column. U.S.A. Specifications 1,925,559, 1,942,858, and 1,955,321 are referred to. ALSO: In the high vacuum short-path distillation of substances yielding fractions containing hormones or a fraction obtained therefrom still requiring distillation, another liquid is added to the distilland having a vapour pressure lower than that of the distillate under the conditions appertaining so as to prevent deposition of non-volatile residuum upon the distilling surface. Original materials specified comprise germinal gland hormone concentrates. Examples of suitable added liquids comprise esters such as benzyl, butyl, amyl, and octyl phthalates, triacetin, methyl oleate, methyl stearate; oils and hydrocarbons such as olein, castor oil, high boiling point hydrocarbons; high boiling point alcohols; and the lowest vapour pressure fraction of the material being distilled. The proportion of distilland and added liquid may vary from 1/200 part to 25 parts of the latter to 1 of distilland. The added liquid may be separated from the distilland and re-used and this separation is facilitated by using a liquid immiscible at ordinary temperatures but miscible with the distilland at the temperature of distillation. Molecular distillation may be used, and the temperatures, pressures and distance apart of the evaporating and condensing surfaces may all be varied according to the particular distilland. U.S.A. Specifications 1,925,559, 1,942,858, and 1,955,321 are referred to. (From GB490433 A)					
18.	Deodorisation plant for fatty oils	SE9602625	1996-07-03	ALFA LAVAL*	98 %
A deodorisation plant for treatment of fatty oils comprises a vessel (1) connected to a vacuum source. In the vessel there is a distillation column filled with structured packing material through which column the oil which shall be deodorised is brought to flow under influence of gravity and to meet a deodorisation gas in counter-current. In the vessel there is also a number of trays for collection of oil provided with drainage outlets in their lower part. The oil is treated with deodorisation gas in a batchwise way in these trays. The vessel is provided with an inlet (7) for oil and a connection (2) to a vacuum source in its upper part. In its lower part there is an outlet (9) for oil.  FIG. 1					
19.	Process for the extraction of squalene, sterols and vitamin e contained in condensates of physical refining and/or in distillates of deodorization of plant oils	FR2933403	2008-07-07	SOPHIM* SOPHIUM FRANCE PALEUI F 0 4 3 1 0 PARC DE LA CACINE	98 %
The invention describes an overall process for the extraction of sterols, vitamin E, squalene and other plant-based hydrocarbons from deodorization distillates of plant oils. After an esterification of the free fatty acids, then a transesterification of the combined fatty acids (glycerides and sterides) by the same short alcohol, three successive distillations make it possible to successively recover a first fraction of hydrocarbons, the main fraction of alkyl esters, then the heaviest alkyl esters with squalene. The third distillate will be used for the production of squalene and a second fraction of hydrocarbons. The residue of the third distillation will be used for the production of sterols and vitamin E. By using bioethanol, plant-based glycerol and the plant-based hydrocarbons of the process, the process makes it possible to extract each of the four unsaponifiable substances without any solvent of oil-based origin and to claim the seals of approval for products obtained by natural physical and chemical processes.  Fig. 1					
20.	Plasma photocatalyst negative ion air deodorization and sterilization apparatus	CN103060100	2013-01-31	SOUTH CHINA REBORN RESOURCES SOUTH CHINA REBORN RESOURCES ZHONG SHAN* SOUTH CHINA REBORN RESOURCES ZHONGSHAN	98 %
An air deodorization and sterilization apparatus comprising an air transfer conduit (3), a negative ion apparatus, a photocatalysis main processor (5), and an activated carbon air filter (12). The negative ion apparatus is provided within the air transfer conduit (3). The photocatalysis main processor (5) is provided therein with an air passage. The air passage has arranged therein one or more ultraviolet light tubes (7) and titanium dioxide photocatalysis contact plates (9) fixedly arranged at the rear ends of the ultraviolet light tubes (7). The tail end of the air passage is in communication with the activated carbon air filter (12). Air is outputted via the activated carbon air filter (12). 					
21.	A process to prepare a tocopherol concentrate	EP2810940	2013-06-06	SULZER*	98 %
A process to prepare a concentrate comprising a tocopherol compound is disclosed. The process comprises the following sequence of steps: (i) an evaporation step 10 in a first evaporator 20 of a feed stream 30 comprising a fatty acid or its ester, and a tocopherol compound 1, wherein a first residue stream 50 and a first volatile stream 60 are separated in the evaporation step 10, (ii) a first distillation step 70 in a first distillation apparatus 80 of the first volatile stream 60 to remove a second residue stream 90 and a second volatile stream 100 and to form a volatile product concentrate stream 110, characterized in that the first evaporator 20 is a thin film or short-path evaporator, the distillation apparatus 80 comprises at least two columns 81, 82, and wherein the concentration of the tocopherol compound 1 in the feed stream is from 1 to 30 % on a weight basis. The present invention also relates to a process to prepare said concentrate from a vegetable oil 160 and an apparatus 1000 for said process to prepare said concentrate from said vegetable oil. [FIG. 1] 					
22.	Edible oil blended by peony seed oil and almond oil as well as preparation method	CN104026259	2013-03-29	LUOYANG CHUNKUI AGRICULTURAL DEVELOPMENT*	98 %
The invention relates to edible oil blended by peony seed oil and almond oil as well as a preparation method, the raw materials are composed of peony seed oil and almond oil. The preparation method comprises the following steps: 1)preparing peony seed oil; 2)preparing almond oil; and 3)preparing the blend oil, weighting 38-45% of almond oil and 55-62% of peony seed oil according to weight percentage, uniformly mixing to prepare the blend oil. The edible oil solves the problems of short maintenance stage, low oiling rate and unbalanced nutrition of the current blend oil, no peculiar smell is generated during oil manufacture, nutrition is ensured, and shelf life can be simultaneously increased.					

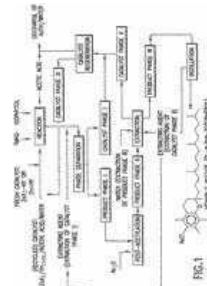
23.	Tocotrienols and tocotrienol-like compounds and methods for their use.	MX9206735	1992-11-20	AC HUMKO LIPOGENENICS LIPOGENICS* LIPOGENICS A****NAME OR NAME ORIGINAL LANGUAGEA**** LIPOGENICS	98 %
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The present invention relates to novel tocotrienols and tocotrienol-like compounds displaying biological activity. The tocotrienols and tocotrienol-like compounds of this invention may be conveniently obtained from biological sources or by chemical synthesis and may be used in pharmaceutical compositions, foodstuffs and dietary supplements. This invention also relates to the use of tocotrienols, tocotrienol-like compounds, and mixtures thereof, as hypocholesterolemic, antithrombotic, antioxidant, antiatherogenic, antiinflammatory and immunoregulatory agents, or as agents useful to decrease lipoprotein (a) concentration in the blood or to increase feed conversion efficiency.

FIG. 1A			
Layer	Area	Area	Area
11 (Control) (wt.-%)	11.20	10.00	1.20
12 (Control) (wt.-%)	11.20	10.00	1.20
13 (Control) (wt.-%)	11.20	10.00	1.20
14 (Control) (wt.-%)	11.20	10.00	1.20
15 (Control) (wt.-%)	11.20	10.00	1.20
16 (Control) (wt.-%)	11.20	10.00	1.20
17 (Control) (wt.-%)	11.20	10.00	1.20
18 (Control) (wt.-%)	11.20	10.00	1.20
19 (Control) (wt.-%)	11.20	10.00	1.20
20 (Control) (wt.-%)	11.20	10.00	1.20
21 (Control) (wt.-%)	11.20	10.00	1.20
22 (Control) (wt.-%)	11.20	10.00	1.20
23 (Control) (wt.-%)	11.20	10.00	1.20
24 (Control) (wt.-%)	11.20	10.00	1.20
25 (Control) (wt.-%)	11.20	10.00	1.20
26 (Control) (wt.-%)	11.20	10.00	1.20
27 (Control) (wt.-%)	11.20	10.00	1.20
28 (Control) (wt.-%)	11.20	10.00	1.20
29 (Control) (wt.-%)	11.20	10.00	1.20
30 (Control) (wt.-%)	11.20	10.00	1.20
31 (Control) (wt.-%)	11.20	10.00	1.20
32 (Control) (wt.-%)	11.20	10.00	1.20
33 (Control) (wt.-%)	11.20	10.00	1.20
34 (Control) (wt.-%)	11.20	10.00	1.20
35 (Control) (wt.-%)	11.20	10.00	1.20
36 (Control) (wt.-%)	11.20	10.00	1.20
37 (Control) (wt.-%)	11.20	10.00	1.20
38 (Control) (wt.-%)	11.20	10.00	1.20
39 (Control) (wt.-%)	11.20	10.00	1.20
40 (Control) (wt.-%)	11.20	10.00	1.20
41 (Control) (wt.-%)	11.20	10.00	1.20
42 (Control) (wt.-%)	11.20	10.00	1.20
43 (Control) (wt.-%)	11.20	10.00	1.20
44 (Control) (wt.-%)	11.20	10.00	1.20
45 (Control) (wt.-%)	11.20	10.00	1.20
46 (Control) (wt.-%)	11.20	10.00	1.20
47 (Control) (wt.-%)	11.20	10.00	1.20
48 (Control) (wt.-%)	11.20	10.00	1.20
49 (Control) (wt.-%)	11.20	10.00	1.20
50 (Control) (wt.-%)	11.20	10.00	1.20
51 (Control) (wt.-%)	11.20	10.00	1.20
52 (Control) (wt.-%)	11.20	10.00	1.20
53 (Control) (wt.-%)	11.20	10.00	1.20
54 (Control) (wt.-%)	11.20	10.00	1.20
55 (Control) (wt.-%)	11.20	10.00	1.20
56 (Control) (wt.-%)	11.20	10.00	1.20
57 (Control) (wt.-%)	11.20	10.00	1.20
58 (Control) (wt.-%)	11.20	10.00	1.20
59 (Control) (wt.-%)	11.20	10.00	1.20
60 (Control) (wt.-%)	11.20	10.00	1.20
61 (Control) (wt.-%)	11.20	10.00	1.20
62 (Control) (wt.-%)	11.20	10.00	1.20
63 (Control) (wt.-%)	11.20	10.00	1.20
64 (Control) (wt.-%)	11.20	10.00	1.20
65 (Control) (wt.-%)	11.20	10.00	1.20
66 (Control) (wt.-%)	11.20	10.00	1.20
67 (Control) (wt.-%)	11.20	10.00	1.20
68 (Control) (wt.-%)	11.20	10.00	1.20
69 (Control) (wt.-%)	11.20	10.00	1.20
70 (Control) (wt.-%)	11.20	10.00	1.20
71 (Control) (wt.-%)	11.20	10.00	1.20
72 (Control) (wt.-%)	11.20	10.00	1.20
73 (Control) (wt.-%)	11.20	10.00	1.20
74 (Control) (wt.-%)	11.20	10.00	1.20
75 (Control) (wt.-%)	11.20	10.00	1.20
76 (Control) (wt.-%)	11.20	10.00	1.20
77 (Control) (wt.-%)	11.20	10.00	1.20
78 (Control) (wt.-%)	11.20	10.00	1.20
79 (Control) (wt.-%)	11.20	10.00	1.20
80 (Control) (wt.-%)	11.20	10.00	1.20
81 (Control) (wt.-%)	11.20	10.00	1.20
82 (Control) (wt.-%)	11.20	10.00	1.20
83 (Control) (wt.-%)	11.20	10.00	1.20
84 (Control) (wt.-%)	11.20	10.00	1.20
85 (Control) (wt.-%)	11.20	10.00	1.20
86 (Control) (wt.-%)	11.20	10.00	1.20
87 (Control) (wt.-%)	11.20	10.00	1.20
88 (Control) (wt.-%)	11.20	10.00	1.20
89 (Control) (wt.-%)	11.20	10.00	1.20
90 (Control) (wt.-%)	11.20	10.00	1.20
91 (Control) (wt.-%)	11.20	10.00	1.20
92 (Control) (wt.-%)	11.20	10.00	1.20
93 (Control) (wt.-%)	11.20	10.00	1.20
94 (Control) (wt.-%)	11.20	10.00	1.20
95 (Control) (wt.-%)	11.20	10.00	1.20
96 (Control) (wt.-%)	11.20	10.00	1.20
97 (Control) (wt.-%)	11.20	10.00	1.20
98 (Control) (wt.-%)	11.20	10.00	1.20
99 (Control) (wt.-%)	11.20	10.00	1.20
100 (Control) (wt.-%)	11.20	10.00	1.20

24.	Process for the production of alpha-tocopherol acetate by condensation of trimethylhydroquinone with isophytol	BRPI0100935	2000-03-09	EVONIK INDUSTRIES*	98 %
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Process for the production of alpha-tocopherol acetate in a recirculating process by condensation of trimethylhydroquinone and isophytol in the presence of a catalyst system consisting of a zinc halide and an aqueous protonic acid and optionally an elemental metal in a polar solvent/water mixture extractable or miscible with water and subsequent acylation of the resultant alpha-tocopherol and recirculation of the catalyst system.

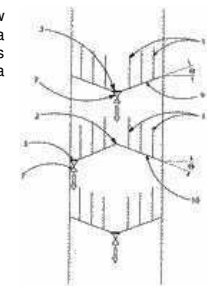


25.	A process for the epoxidation of an olefin with improved energy balance	US20060161010	2005-01-18	BASF* BASF DOW DOW CHEMICAL*	98 %
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The invention relates to a process for the epoxidation of an olefin comprising (a) reacting the olefin with hydrogen peroxide in the presence of methanol as solvent in at least two reaction stages to obtain a mixture (M-a) comprising olefin oxide, unreacted olefin, methanol and water, wherein between at least two reaction stages, olefin oxide is separated by distillation; (b) separating unreacted olefin from the mixture (M-a) by distillation to obtain a mixture (M-bi) comprising at least 80 wt.-% of olefin and a mixture (M-bii) comprising methanol, water and at least 7 wt.-% of olefin oxide; (c) separating olefin oxide from the mixture (M-bii) in at least one distillation stage to obtain a mixture (M-ci) comprising at least 99 wt.-% of olefin oxide and a mixture (M-cii) comprising water and at least 55 wt.-% of methanol; (d) separating methanol from the mixture (M-cii) in at least one distillation stage to obtain a mixture (M-di) comprising at least 85 wt.-% of methanol and up to 10 wt.-% of water, and a mixture (M-dii) comprising at least 90 wt.-% of water; wherein a vapor top stream (Td) obtained from at least one distillation column used in (d), said vapor top stream (Td) comprising at least 85 wt.-% methanol, is used to operate at least partially at least one vaporizer used in at least one distillation column used in at least one of stages (a), (b) and (c).

26.	Method for deodorisation	SE0501009	2005-04-29	ALFA LAVAL* ALFA LAVAL CORPORATE ACTIVE BORGET	98 %
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The present invention relates to a method for deodorising organic fluids or inorganic fluids, which comprises creating a continuous flow or semi continuous flow of the fluids through a column having one or more trays, creating a plug flow of the fluids through a labyrinth of passages on each tray by regulating the flow through the passages by use of a regulating valve at an exit in the tray, introducing sparging gas on the bottom level of each tray, contacting the fluids with the sparging gas in the plug flow, removing volatiles from the fluids, and transferring the sparging gas and the volatiles in ducts inside the column or outside the column. The present invention relates also to a plug flow tray, a column, a deodorising plant, and use thereof.

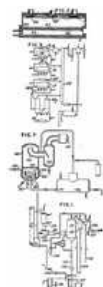


27.	Medicinal composition, dry powder vapor, nebula, nebula auxiliary preparation for use through mouth and nose and its preparation method	CN1475204	2003-06-29	CONG FANZI	98 %
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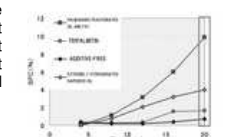
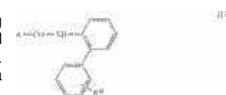
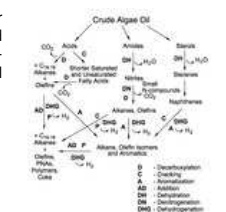
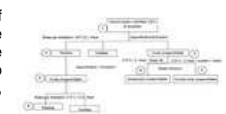
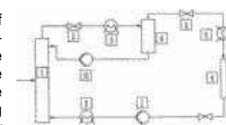
A composition, dry-powder inhalant, spray, or spray aided medicine for treating cold, cough, angina pectoris, etc by applying it via mouth or nose is mainly prepared from natural milk and plant extract oil with fragrant therapy function. Its preparing process is also disclosed. Its advantages are less irritation to nasal mucose, long stay time in nasal cavity, high enzyme suppressing action, and high biological utilization rate.

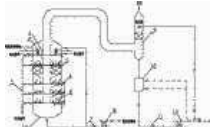
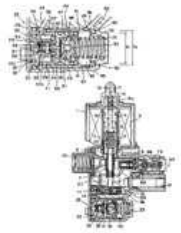
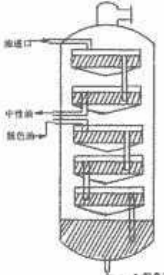
28.	Improvements in or relating to a process of deodorizing a glyceride oil and the products resulting therefrom	GB701631	1949-10-17	KRAFT FOODS*	98 %
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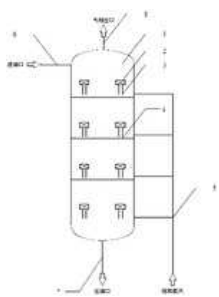
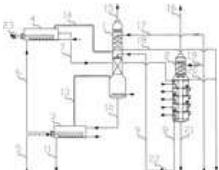
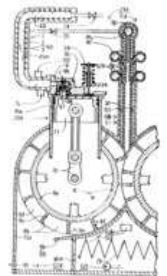
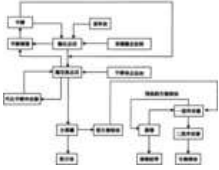
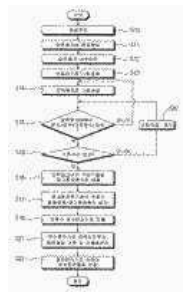
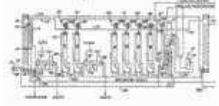
Edible glyceride oils are deodorized by treating a shallow body of the oil with steam at a temperature which is raised in stages to 500-600 DEG F. and under a pressure not above 5mm. of mercury while withdrawing steam and other vapours from above the oil during each deodorization stage. The term "steam" includes any gas which is inert to the oil, such as carbon dioxide. In the continuous apparatus shown in Fig. 9, the oil is passed in succession through a heater 19, a deodorizing chamber 14, a second heater 21, a second deodorizing chamber 16, a third heater 22 and a third deodorizing chamber 17, the third heater raising the temperature of the oil to 500-600 DEG F. Each deodorizing chamber comprises, as shown in Fig. 2, a cylinder 63 containing a shallow layer of oil fed from pipe 62 and a screen 67 above the layer of oil. Steam is passed through the oil from a perforated pipe 66, and vapours are withdrawn through vents 64 fitted with baffles 681 to a vacuum manifold 115, Fig. 9. The oil from the final deodorizing chamber 17 is passed to a tank 92b, wherein it is partly cooled, and then to a tank 92g, wherein it is further cooled, the oil in each of these cooling stages being treated with steam under high vacuum and the vapours from each tank being passed to the vacuum manifold 115. Finally, the oil is discharged through a cooler 18. The vapours withdrawn from the chambers 14, 16, 17 and tanks 92b and 92g into the vacuum manifold 115 are condensed in a system comprising vacuum boosters 24, 26, Fig. 1, and jet condensers 27, 28, 29 arranged in series, residual gases from the condenser 29 being discharged by means of jet ejectors 126, 127. Condensates from condenser 27 is withdrawn by pump 132 through a pipe 133 in which a constant liquid level is maintained by a float-controlled valve 134 in the pipe 136 which supplies water to the condensers. Condensate from condenser 28 is returned by pipe 143 to the condenser 27. Condensate from condenser 29 is discharged through pipe 152. The condensates from condensers 27, 28, which contain vitamins, tocopherol, sterols and fatty acids, are collected in a settling tank 38, from which the supernatant layer is withdrawn to a tank 147. Condensate from the vacuum manifold 115, which may have a cooling jacket 168, is also collected in tank 38. Fig. 7 shows an apparatus for the treatment of a single batch of oil. The oil is supplied through a pipe 189 to a vessel 182 having a screen 183 above the surface of the oil and a heating coil 184 immersed in the oil. External heating units 186 may also be provided. Steam is supplied through a pipe 187 having a perforated end 188, and vapours are withdrawn through a duct 192 and trap 193 connected at 24 to a vacuum condensation system similar to that described above. The oil is discharged through a pipe 191 and tank 199. In a typical method of operation, oil preheated to 410 DEG F. is fed through pipe 189 to form a shallow body (less than 20 inches deep) in the vessel 182, and the temperature is then raised to 420 DEG F., held at this point for about 5 minutes raised rapidly to 480-500 DEG F., held again for about 5 minutes, and raised again to 540-580 DEG F., where it is held again for about 5 minutes. The oil is then rapidly cooled while the passage of steam through the oil is continued. The process is particularly applicable to soya-bean oil, but other oils which may be treated are cottonseed, corn, peanut, sunflower-seed, rapeseed and sesame-seed oils, and fish or fish-liver oils. The oil may have been preliminary refined, e.g. with alkali and (or) an adsorbent, and may have been hydrogenated. After the deodorization treatment, the cooled oil may be filtered. Specifications 589,534, 701,632 and 701,633 are referred to.

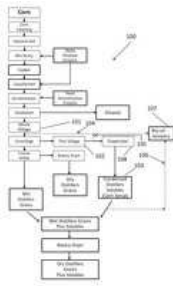
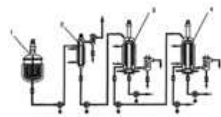
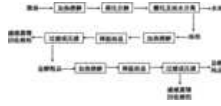
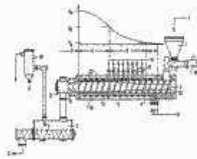
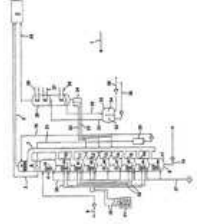


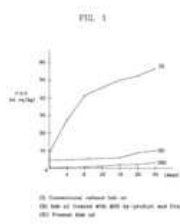
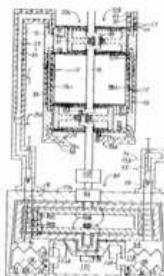
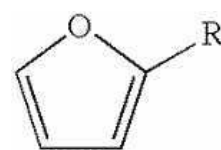
29.	Process for preparing an adsorbent which is loaded with an oil	NO20000348	2000-01-20	DSM* DSM IP ASSETS DSM NUTRITIONAL PRODUCTS F A. HOFFMANN LA ROCHE U GEE *****NAME OR NAME ORIGINAL LANGUAGE NOTATION***** F HOFFMANN L A ROCHE HOFFMANN LA ROCHE	98 %
The invention relates to a process for preparing a highly loaded adsorbent, which process comprises the steps of a) extracting an oil from an oil crude product by means of supercritical fluid extraction thus, obtaining a loaded supercritical fluid (SCF); b) expanding the loaded SCF of step a) followed by heating to obtain a liquid phase and an in-loading reduced SCF phase; c) optionally decreasing the pressure and/or raising the temperature of the SCF phase of step b) to conditions of adsorption; d) introducing the SCF of step b) or step c) into a fixed bed adsorber to obtain an adsorbent loaded with the purified oil and pure SCF; e) feeding the liquid phase of step b) as a reflux to the extraction device of step a); f) compressing and tempering the pure SCF of step d) to extraction conditions; g) recycling the pure SCF to the extraction device of step a). The invention further comprises a process for purifying an oil from an oil crude product by desorbing the adsorbed oil. The invention further comprises 16 A process for purifying an oil, optionally combined with a process for preparing a highly loaded adsorbent, which process comprises the steps of: A) extracting a fraction containing the oil together with high volatile components from a crude synthetic or natural oil mixture by means of supercritical fluid extraction (SFE) thus, obtaining a loaded supercritical fluid (SCF) and a raffinate containing the low volatile components of the crude product; B) expanding the loaded SCF of step A) followed by heating to obtain a liquid phase containing the oil and high volatile components and an unloaded gas phase (step B-1) or to obtain an in-loading reduced SCF and a liquid phase (step B-2); C) optionally decreasing the pressure and/or raising the temperature of the in-loading reduced SCF phase of step B-2) to conditions of adsorption; D) optionally introducing the in-loading reduced SCF of step B-2) or of step C) into a fixed bed adsorber to obtain an unloaded gas phase and an adsorbent loaded with oil; E) collecting the unloaded gas phase of step B-1) or of step D) in a vessel and controlling the content of the gas components; F) optionally feeding pure gas into the vessel of step E) to guarantee the same gas composition over the whole process time; G) feeding part of the liquid phase of step B-1) or all of the liquid phase of step B-2) at the same temperature and pressure of the column as a reflux to the extraction device of step A); H) pressurizing the gas phase of step E) or of step F) followed by cooling to separation conditions; I) recycling the SCF of step H to the extraction device of step A); J) optionally feeding the liquid phase of step B-1) to a second extraction device; K) extracting a fraction of high volatile components from the extract of step B-1) by means of SFE thus obtaining a loaded SCF and the pure oil as raffinate; L) treating the reflux and the SCF as described in the steps B-1 - I); M) collecting the oil at the bottom of the column as a raffinate.					
30.	Blend oil containing peony seed oil and preparation method thereof	CN103815059	2014-03-06	LUOYANG CHUNKUI AGRICULTURAL DEVELOPMENT*	98 %
The invention relates to blend oil containing peony seed oil and the preparation method thereof. The blend oil comprises 20 to 38 percent of the peony oil, 25 to 30 percent of corn germ oil, 25 to 30 percent of peanut oil, 3 to 5 percent of tea-seed oil, 4.5 to 7 percent of wheat germ oil, 0.5 to 2 percent of catechinic acid and 4 to 6 percent of a luffa extract; the preparation method of the blend oil comprises the preparation of peony seed oil, the mixing of the main raw material, the formation of an emulsification system and final formation of a clean and dirty-free blend oil product, wherein the peony seed oil is treated through the combination of sub-critical fluid extraction and molecular distillation technologies, the operating temperature is low, the heating time is short, grease oxidation and rancidity caused by high temperature are avoided, the separating degree and the product yield are higher, and the acid value of the peony seed oil can be lowered through molecular distillation; the blend oil is reasonable and healthy in matching up, the nutrition is balance, the blend oil with high stability and less oil-fume output can be formed, and the health of a cook person can be maintained for a long time.					
31.	Use of at least one coproduct from the vegetable-oil refining industry for obtaining a purified total unsaponifiable vegetable oil product	FR2970971	2011-01-31	LABORATOIRES EXPANSCIENCE*	98 %
The invention relates to the use of at least one coproduct of the vegetable-oil refining industry for obtaining a purified total unsaponifiable vegetable oil product which is free of the impurities initially found in said coproduct, and which is advantageously free of sapid and odorant compounds and/or of chemical compounds resulting from the breakdown and decomposition of vegetable oils. The invention also relates to a method for obtaining a purified total unsaponifiable vegetable oil product from at least one coproduct from the vegetable-oil refining industry. The invention also relates to a purified total unsaponifiable vegetable oil product that can be obtained by said method, and to compositions containing such an unsaponifiable product. The invention further relates to such unsaponifiable products or such compositions for the use thereof as a drug, medical device, dermatological agent, cosmetic agent, or nutraceutical agent for humans or animals.					
32.	Thermal treatment of crude algae oil	WO2013006578	2012-07-02	SAPPHIRE ENERGY*	98 %
Crude algae oils are thermally-treated at temperature(s) in the range of 300 - 600 °C, without catalyst and/or the addition of hydrogen, to produce a higher grade, cleaner algae oil with, for example, reduced oxygen, boiling range, viscosity and/or density, and acid number, in addition, because the thermal treatment reduces metals in the oil and produces carbonaceous solids, it is expected that catalyst deactivation by algae oil feedstocks will be greatly reduced if the crude algae oil or fractions thereof are thermally-treated prior to catalytic upgrading. Oxy gen, fatty acids, metals, and metaloids are reduced/removed by the thermal treatment, so that RBI) processing of the crude bio-oil may be reduced or eliminated, and requirements for further deoxygenation and hydrotreating of the thermal products are reduced or eliminated.					
33.	Method and technological apparatus for recovering waste high-boiling-point heat-transfer oil	CN104178210	2013-05-27	SHANDONG HENGLI HEAT CARRIER ENGINEERING TECHNOLOGY*	98 %
A method for recovering waste high-boiling-point heat-transfer oil comprises the steps: 1, pre-processing waste heat-transfer oil; 2, performing hydrogenation refining on the waste heat-transfer oil pre-processed in the step 1; and 3, performing fractional distillation on the waste heat-transfer oil subjected to hydrogenation refining in the step 2. Concretely, fractional distillation in the step 3 is performed according to the following steps: 1), enabling liquid-phase oil separated out from hydrogenation low-pressure separation composition to enter a reduced-pressure flash-evaporation tower, cooling a gas phase getting out from the top of the reduced-pressure flash-evaporation tower by a condenser, and enabling the cooled gas phase to enter a reflux tank at the tower top, pumping and exhausting the gas phase into atmosphere, pumping out a liquid phase via a reflux pump and taking the liquid phase as naphtha and sending to a storage tank; and 2) pressurizing falling-film distillation tower bottom distillates and conveying to a reduced-pressure distillation tower by a conveying pump, cooling a gas phase getting out from the top of the reduced-pressure distillation tower by a condenser and enabling the cooled gas phase to enter a reflux tank at the tower top for oil-gas separation, enabling the liquid phase to be as reduced-pressure tower-top oil and enter a condenser for cooling, one branch of the reduced-pressure tower-top oil is used for column-plate refluxing, one branch of the reduced-pressure tower-top oil is used as 7# white oil and conveyed to an irrigated-area storage tank for self use and export sale, and one branch of the reduced-pressure tower-top oil is used 15# white oil and conveyed to an irrigated-area storage tank for self use and export sale. The method has the characteristics of low energy consumption, cleaning, environmental protection, high economic benefit economic benefit and high yield.					
34.	Use of fungicides for increasing the quality and optionally the quantity of oil-plant products	WO2007090788	2007-02-01	BASF*	98 %
The invention relates to the use of specific fungicides for increasing the quality and optionally the quantity of oil-plant products and to the use of said fungicides for reducing the brittleness of the seed coats of seed-oil plants. The invention also relates to oil-plant products obtained from oil plants that have been treated with said fungicides, e.g. oil or seeds from treated oil plants. The invention further relates to regenerative fuels, which contain the oil according to the invention and/or the conversion products thereof. Finally the invention relates to a method for improving combustion in motors and combustion plants, according to which the motors and plants are at least partly operated by a suitable oil-plant product, produced according to the invention.					
35.	Palm fractionated oil, and oil composition and food product containing same	TW201240604	2012-02-01	J OIL MILLS* JAY OIL MILLS	98 %
The present invention provides an oil and fat composition having superior operability and processability, in terms of a liquefying phenomenon of sugar, tackiness and texture of fried doughnuts, filling condition and hardness of shortening, and solidifying time of coating chocolate, by the superior crystallization-promoting effect; and a food product using the same. A palm-based fractionated oil and fat has 70-90% by weight of the tripalmitin content to triglyceride and 1-8% by weight of the unsaturated fatty acid content to total fatty acid. The oil and fat comprises a hard part obtained by, for example, performing a crystallization operation of palm super stearin with iodine value 10-17 so that the slurry SFC is 20% or less, and fractionating the slurry so that the hard part yield is 26% by weight or less. The fractionation is preferably performed so that a numerical value of the hard part yield/the slurry SFC is 10 or less.					

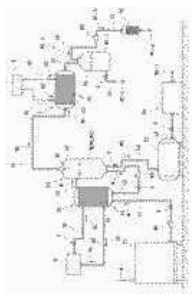
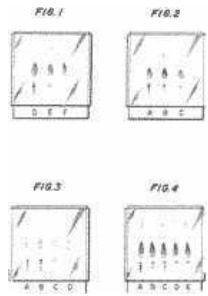


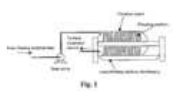
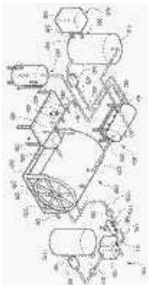
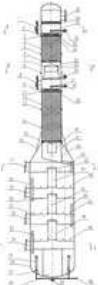
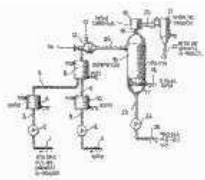
36.	Method and equipment for low-temperature short-time deodorization of plant oil	CN102311872	2011-08-16	QINGDAO BOHAI AGRICULTURAL DEVELOPMENT* QINGDAO BOHAI HEHE ENGINEERING TECHNOLOGY* QINGDAO BOHAI TECHNOLOGY* SHANDONG BOHAI INDUSTRIAL*	98 %
The invention provides a method and equipment for low-temperature short-time deodorization of plant oil. The method is characterized in that a plate-filling-plate type complex tower is utilized as a deodorization device; an optimal deodorization technology and parameters are confirmed through a research of influences of a deodorization temperature, time and direct steam consumption on vitamin E and sterol loss, trans-fatty acid generation amounts and first-grade oil quality; and the method can reduce trans-fatty acid generation amounts and the loss of vitamin E and sterols in oil on condition that the quality of the oil is guaranteed. Through the method, a deodorized plant oil product with low trans-fatty acid content below 1.0% and low vitamin E and sterol loss rates (wherein a vitamin E loss rate is below 12% and a sterol loss rate is below 17%) is obtained.					
					
37.	Topical compositions comprising an oil-in-water emulsion and a retinoid	WO9731620	1997-02-25	JOHN & JOHN CONSUMER PRODUCTS JOHNSON & JOHNSON JOHNSON & JOHNSON CONSUMER* JONSON & JONESON CONSUMER COMPANIES UNITED STATES NEW JERSEY 0 8 5 8 SKILLMAN A· GRAND VIEWE ROAD	98 %
Skin care compositions comprising an oil-in-water emulsion base containing retinoids and possessing good physical and chemical stability, comprising a stabilizing system selected from the group consisting of: a) at least one oil-soluble antioxidant; b) a chelating agent and at least one oil-soluble antioxidant; c) a chelating agent; and d) a chelating agent and an antioxidant present in each of the oil and water phases of said emulsion.					
					
38.	Vacuum distillation	FR845957	1937-11-13	KODACK* KODAK	98 %
521,227. High vacuum distillation. EASTMAN KODAK CO. Nov. 14, 1938. No. 33030. Convention date, Nov. 13, 1937. [Class 32] In a process of high vacuum unobstructed path distillation, the material to be distilled is subjected to a temperature substantially higher than that necessary to ensure high vacuum short path, and particularly molecular, distillation of such material, a distance of at least five times the mean free path of the molecules separating distilling and condensing surfaces, and the pressure of the distillate vapour stream generated, whilst being less than 1 mm. Hg., always exceeding the pressure of residual gas. Specified materials which may be treated are fatty acids, sterols, hormones, vitamins, and animal. vegetable and mineral oils, e.g., pollack liver oil, soya bean oil and coconut oil. Stills of the type described in Specifications 482,882 and 482,883 may be employed, and fractionation may be obtained by operating in a plurality of successive stills. In an example, pollack liver oil is distilled in a molecular still of conventional design, comprising 5 columns in which the operating conditions are as follows:- The first and second columns are thus operated under non-molecular conditions, the pressure of residual gas being greater than that of the distilling vapour. The third column is operated under true molecular conditions, and here vitamins A and D are recovered. In columns 4 and 5, rapid saturation distillation of the main bulk of fatty glycerides takes place, according to the process of the present invention. Further examples are given, of the separation of colouring matters, essential oils and sterols from soya bean oil in a centrifugal type still, and of the distillation of rancid coconut oil in five stages. (From GB521227 A)					
39.	Automatically pressure-adjusting type electromagnetic pump with pressure rise time-adjusting mechanism	KR19900005069	1988-09-17	NIPPON CONTROL INDUSTRY*	98 %
PURPOSE:To decrease the stroke of the piston in an electromagnetic pump so as to reduce its vibration and noise by sharply increasing the discharge pressure in rising characteristic at the earliest stage of the start-up of the pump, then by moderating the pressure, and by adjusting the pressure by means of a pressure-reducing valve in a passageway on the discharge side. CONSTITUTION:The start of an electromagnetic pump 1 is followed by a sharp increase of the pressure downstream from a discharge valve 11 because the passage between a chamber on the high pressure side 42 and a chamber on the low pressure side 43 is shut off by a valve 54 in a pressure rise time-adjusting device 23. Then, with movement of a plunger 39 to a fixed value a valve 54 opens so that the increase of the discharge pressure is moderated. Next, with movement of the plunger 39 to the maximum a valve 60 reduces the communication between the chamber on the low pressure side 43 and a passageway on the suction side 46 so that the discharge pressure assumes a specified rising characteristic and is made to rise to a specific pressure set in a pressure-adjusting mechanism 65 containing a pressure-reducing valve 66. At this time, the pressure-reducing valve 66 undergoes displacement by the action of a pressure-receiving plunger 69 so that the degree of the throttling is adjusted and the stroke of the piston 7 is reduced. As a result, a reduction can be achieved not only in the pulsation of the discharge pressure and the vibration and noise of the electromagnetic pump but also in the pulsating sound of the combustion.					
					
40.	Pre-distillation-composite decolorization refining method for controlling color reversion of salad oil and generation of trans-fatty acid	CN101564064	2009-05-26	JIANGNAN UNIVERSITY*	98 %
The invention relates to a pre-distillation-composite decolorization oil and fat refining method for controlling color reversion of salad oil and generation of trans-fatty acid, and belongs to the technical field of oil and fat refining. The method adopts a pre-distillation-composite decolorization method to perform two-step decolorization and two-step high-temperature treatment on vegetable oil, and the operation procedure is as follows: primary decolorization, pre-distillation deacidification, composite decolorization and deodorization. The method improves the refining process of the vegetable oil on the basis of the prior deodorization process and the prior deodorization equipment, shortens the high-temperature treatment time of oil and fat in the refining process and reduces the adverse effect of the activity of gumbine on the oxidation stability of oil products through double decolorization, pre-distillation deacidification and general deodorization treatment so as to reduce the generation of the trans-fatty acid in the oil and fat, simultaneously makes the color and luster of the salad oil meet the national standard requirement, controls the color reversion degree of the salad oil within the shelf life, and solves the common technical problem of color reversion in the refining of soybean salad oil, vegetable seed salad oil and corn salad oil.					
					
41.	Pretreatment method to separate tocopherol from greatesoymilk deodorization distillation quantity	KR20050101601	2004-04-19	THAREX*	98 %
PURPOSE: A pretreatment method for separating tocopherol from soy oil scum is provided to effectively separate sterol with the same organic solvent in sterol precipitation and free fatty acid esterification, and reduce the free fatty acid content in the soy oil scum. CONSTITUTION: The pretreatment method for separating tocopherol from soy oil scum comprises the steps of: adding anhydrous alcohol into the soy oil scum, cooling the solution at -5 to -8 deg. C to precipitate sterol and separating the precipitated sterol; esterifying the free fatty acid in the sterol-removed solution with acid catalyst at 25-70 deg. C for 20 minutes to 3 hours; and esterifying the first esterified solution with alkali catalyst and acid catalyst to remove remained sterol and esterify trace amount of free fatty acid, wherein the anhydrous alcohol is methanol, ethanol, n-propanol, isopropanol, n-butanol or isobutanol; the acid catalyst is 98% or more sulfuric acid, or 35% or more hydrochloric acid; and the alkali catalyst is sodium methylate or caustic soda. © KIPO 2006					

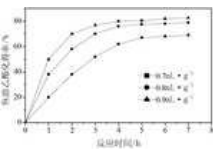
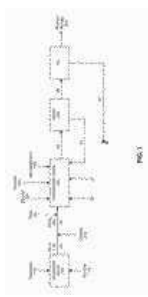
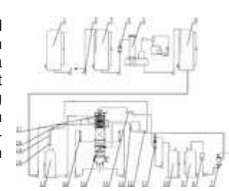
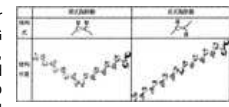
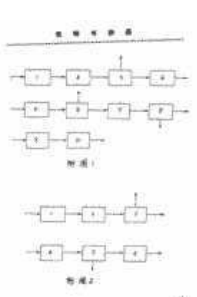
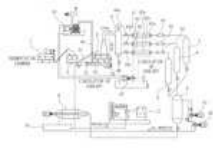
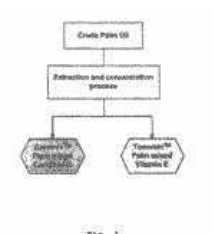
42.	Oil deodorization device, deodorization method thereof and packing stripping pump mechanism	CN103060087	2013-01-23	SHANGHAI JIAOER ENGINEERING TECHNOLOGY*	98 %	
The invention discloses an oil deodorization device, comprising a tower body, a multilayer tower disc and a plurality of packing stripping pump mechanisms, wherein each packing stripping pump mechanism comprise a stripping pump and a packing, the stripping pump is arranged on the tower disc, and the packing is arranged at the top end of the stripping pump. The invention further discloses a deodorization method of the oil deodorization device, comprising the following steps of: vacuumizing the interior of the tower; injecting vegetable oil in the tower body via a centrifugal pump; opening the tower body and directly conveying steam in the stripping pump; lifting the vegetable oil into the packing at the top of the stripping pump from the bottom of the tower disc, separating a steam phase from a liquid phase in the packing; continuously lifting the vegetable oil on the bottom of the tower disc into the packing at the top of the stripping pump and separating; and extracting odour substances out of the tower with a gas phase via a vacuum tube, and pumping the pure and high-quality vegetable oil out of the tower body from the bottom of the tower body via a shield pump. According to the oil deodorization device and the deodorization thereof disclosed by the invention, deodorization consumption and cost are reduced, and the characteristics of energy conservation and consumption reduction are achieved; deodorization time, investment cost, the floor area of equipment, and construction cost are reduced; and deodorization efficiency is high, and the quality of refined oil product is improved.						
43.	Method for producing diacylglycerol-rich fat and/or oil	WO2009019893	2007-08-08	KAO*	98 %	(i) $y \geq -2.59x + 566$
It is intended to provide a method for efficiently producing a diacylglycerol-rich fat and/or oil that has a low content of trans-unsaturated fatty acids and has a good color and a good flavor characteristic to diacylglycerols. A method for producing a diacylglycerol-rich fat and/or oil, by hydrolyzing a raw fat and/or oil by an enzymatic splitting method, and subjecting the fatty acids and glycerin obtained thereby to an esterification reaction, wherein a raw fat and/or oil containing undeodorized fat and/or oil in an amount of 50% by weight or more is used, and a deodorization treatment is carried out after the esterification reaction, to the extent that the relationship between the deodorization time (x) and the deodorization temperature (y) satisfies the following conditions (i) and (ii): (i) $y \geq -2.59x + 566$ (ii) $y \leq 617x - 0.0455$ (provided that $475 \leq y \leq 563$) wherein x represents the deodorization time (minutes), and y represents the deodorization temperature (K).						
44.	Technology for deodorizing vegetable oil with high content of unsaturated acid	CN101649250	2009-08-20	JIANGSU MUYANG MYANDE FOOD MACHINERY*	98 %	
The invention relates to technology for deodorizing vegetable oil with high content of unsaturated acid, belonging to the technical field of vegetable oil refining. In the technology, two vacuum heat exchangers with the same structure are employed for heat exchanging and heating; a tray deodorization tower and a packing deodorization tower are employed to form double towers for deodorization in sequence. The obvious characteristics of adopting the vacuum heat exchangers for heat exchanging and heating are as follows: the energy is saved and the oil is slowly heated under high vacuum. By adopting the double towers for deodorization in sequence, such indexes as acid value, smoke point, color and the like of the vegetable oil with high content of unsaturated acid can be effectively improved, thus strongly ensuring that the final oil products satisfy the high standard requirements of the clients. The technology is suitable for processing the vegetable oil which has high content of unsaturated acid and is easily decomposed at high temperature, such as corn oil, and features good deodorization effect, simple operation and high comprehensive benefits.						
45.	Various energy conservation cycle combined engine	JP2006144780	2004-12-06	TANIGAWA HIROYASU; TANIGAWA KAZUNAGA	98 %	
PROBLEM TO BE SOLVED: To solve a problem wherein great loss occurs because an existing rocket is constituted by improving the outdated invention at the time when it is sufficient with the generation of reaction and injecting high temperature combustion gas having 1/1,517 weight of water to bring reaction close to 1/1,517 of water. SOLUTION: This energy conservation cycle combined engine is constituted by storing water in a combustion part and an outer peripheral vessel, providing a plug in a nozzle injection port part for combustion by ignition, and discharging the plug when pressure rises to the optimum pressure. The center of the plug is constituted by metal having large weight to increase reaction. Since mercury is mixed into water in a combustion part bag to inject starting from the heaviest substance, recovery of mercury and the plug becomes possible to bring the maximum reaction close to $1,517 \times 13.5 = 21,208.5$ times that of high temperature combustion gas. Pressure in the outer peripheral vessel is combustion gas explosion pressure, and friction loss is made the minimum by water repellent action and repulsive force of a high temperature vaporized film and a magnet for injection. Upon completion of injection of water and the bag in the combustion part, combustion gas injection is performed, and high temperature water in the outer peripheral vessel is absorbed, injected, and accelerated based on the principle of combustion gas explosion speed and spraying to increase reaction to 10 to 100 times that of the existing rocket using the same fuel. COPYRIGHT: (C)2006,JPO&NCIPI						
46.	Middle and low temperature preparation method for biological diesel oil by using plants fruits and seeds oil and special-purpose distillation tower for the same	CN101215475	2008-01-18	HENAN ZHONGYING YUDING SCIENCE & TECHNOLOGY*	98 %	
The invention discloses a process for preparing biological diesel oil through utilizing plant fruit seed oil in medium-low temperature and specific distilling tower. The process for preparation comprises following steps: adding raw oil, benzene sulfonic acid and auxiliary agent into an esterification reaction still, heating, then, continuously adding carbinol to generate esterification reaction, the raw oil which is after the esterification reaction is cooled and preserved heat, then adding carbinol, simultaneously, slowly dropping sodium methoxide, generating the esterification reaction, inputting the compound which is after the esterification reaction into a separating tank, separating out coarse biological diesel oil and coarse glycerin, inputting the coarse biological diesel oil into the specific distilling tower to distill and separate, and inputting the biological diesel oil and plant asphalt into respective storing tank. The specific distilling tower comprises a heating chamber, a gas chamber and a residue chamber, wherein a heater is installed on the lower portion of the heating chamber, a material inlet is arranged on the upper portion of the heating chamber, and a feeding layer and an anti-shocking plate are arranged on the upper portion of the gas chamber. The invention prepares the biological diesel oil under normal pressure in the medium or low temperature catalysis condition with low energy consumption, high efficiency, high equipment availability ratio and good social and economic benefits.						
47.	Extraction apparatus method for essential terpene-oil	KR20020046394	2000-12-13	HANKOOK NISSO*	98 %	
PURPOSE: Provided is a method of extracting plant terpene essential oil used as a functional material in cosmetics, pharmaceuticals, sanitizing agent, deodorizing material and foods. The method enables mass production of the above essential oil with good oil recovery percentage in contrast to the conventional extraction method of boiling with water and extracting. CONSTITUTION: The extraction method comprises: grinding the plant raw materials for terpene essential oil; introducing the above raw materials into a pressure tank(200) of a certain size; pressurizing and vacuuming the above tank to 30-40 torr pressure to expand the air cell of the plant; spraying high temperature/high pressure steam into the above tank to make the basic inside temperature of not more than 130°C and pressure of not more than 2.0kg/m ² and extracting the plant terpene essential oil from the raw materials into a steam; delivering the above steam containing extracted essential oil and water to the heat exchanging condenser(400) which is connected to the above pressure tank and cooled by the cooling medium(500); and moving the above condensed water to the w/o separator(600) and separating water, the plant terpene essential oil and impurities.						
48.	Methods and apparatus for dynamically refining and deodorizing fats and oils	CA1279029	1986-02-28	RIVERS JACOB B	98 %	
A method and apparatus for distilling, especially vacuum refining and deodorizing edible oils and fats utilizing sheets of oil driven downwardly in a distiller with a vacuum source at its top. A nozzle includes pressure equalization chambers, cantilever adjustment screws, and a central drag sheet to produce longer lasting and more uniform thin oil sheets to be driven in the distiller. A continuous process deaerates, dehydrates, degums, bleaches, refines, removes tocopherol, deodorizes, and strips peroxides and hydroperoxides from raw oil in a series of other mal stages utilizing driven sheet distillers. No stripping steam is used except in the stage which strips peroxides and hydro peroxides. The method produces valuable, pure products such as tocopherol and fractionated fatty acids. It is especially efficient in heat exchange and low in waste and pollution producing products. A steam sparging nozzle for distributing steam in the stripping of peroxides and hydroperoxides includes a plurality of small tubes with openings which restrict steam flow so as to produce a uniform distribution of optimum size steam bubbles in the steam stripping column of oil. A microwave excitation device radiates the oil immediately prior to forming the driven sheets to excite the more volatile components of the oil for distilling.						

49.	Methods and systems for bio-oil recovery and separation aids therefor	US20140171670	2013-09-26	BUCKMAN* BUCKMAN LABORATORIES INTERNATIONAL BUCKMAN LABORATORIES INTERNATIONAL	98 %	
A method and system for bio-oil recovery from biomass are provided which includes adding at least one separation aid to stillage that contains oil to form a treated stillage prior to centrifuging the stillage, and centrifuging the treated stillage in at least one centrifuge to separate at least a portion of the oil from the treated stillage. The separation aid can contain at least one lecithin and at least one oil and optionally at least one surfactant having an HLB value of at least 6. Treated stillage products are also provided which can contain the indicated separation aid and recovered oil.						
50.	Method for refining cosmetic camellia oil by adopting short-path distillation	CN101717691	2009-10-30	SOUTH CHINA UNIVERSITY OF TECHNOLOGY*	98 %	
The invention discloses a method for refining cosmetic camellia oil by adopting short-path distillation, which is characterized by adopting a first-stage film distillator and a second-stage short-path evaporator to carry out deacidification on crude camellia oil. In the step of first-stage film distillation, dehydration and removal of the substances with low boiling point are carried out, in the step of second-stage distillation, removal of free fatty oil is carried out on the camellia oil processed on the first stage and in the step of third-stage distillation, removal of free fatty oil is carried out on the camellia oil processed on the second stage. The three-stage distillation is carried out under the conditions of working temperatures controlled between 60 DEG C and 180 DEG C and the pressure between minus 0.6MPa and 0.1Pa, and oleic acid with high acid value and camellia oil with ultralow acid value are obtained. The process with high pollution of wastewater drained after soda soap washing and water washing in the chemical processes of alkali refining and neutralizing does not exist during processing the camellia oil. The flow is simple, the oleic acid with high value and the camellia oil with ultralow acid value are separated by distillation, the separation process is a physical process, and the camellia oil is free of loss, thus having very high yield.						
51.	Method for extracting and purifying natural phytosterol from oil deodorization distillate residual oil and technique thereof	CN101607977	2009-06-12	TIANJIN POLYTECHNIC UNIVERSITY*	98 %	
The invention relates to a catalytic decomposition and solvent crystallization technique for extracting and purifying natural phytosterol from oil deodorization distillate. The technique comprises the process as follows: vegetable oil and fat deodorization distillate residual oil and solvent are put into a reaction kettle to be heated for catalytic decomposition; after water layers are separated, oil phase is transferred into a cold separation tower and added with organic solvent for dynamic gradient cooling crystallization; after being processed by curing heat preservation and filtration, the crude product of phytosterol can be obtained; finally, the crude product is processed by secondary solvent crystallization, and the purified product of the phytosterol can be obtained. Phytosterol ester in the residual oil can be transformed into phytosterol by catalytic decomposition; as the dynamic gradient crystallization technique is adopted, the quality and the yield of the product can be improved. The phytosterol prepared by the technique has the purity being more than 90%, so as to meet the market demand. The yield of the phytosterol reaches to 5-40% of the raw material residual oil, and after the solvent of the filtrate of the separated phytosterol is recovered, residue can be taken as rust preventive oil. The technique is simple, convenient in operation, good in controllability, low in cost and easy in industrialization.						
52.	Process and apparatus for the thermal conditioning and the pretreatment of oil seeds and oil fruits, particularly leguminous seeds	EP0212391	1986-08-01	AMANDUS KAHL NACHF*	98 %	
A process for the treatment of vegetable raw material such as soy beans is disclosed wherein the vegetable raw material is subjected to one of the following: (1) an extraction step, (2) a compressing step, and (3) an extraction step and a compressing step. In addition to one of the three aforementioned procedures, the vegetable raw material is also subjected to a thermal conditioning step in which the material is heated to a temperature above 100 degrees Celsius and a pressure above atmospheric pressure in an oxygen-free atmosphere. According to the process of the present invention, the thermal conditioning step is carried out at a pressure of 2.0 to 25 bar for a time period of between 0.1 and 5 seconds and, after the time period, the process calls for suddenly releasing the pressure, moving the heated material into an oxygen-free zone, and cooling the heated material to a temperature below 100 degrees Celsius in the oxygen-free zone. (From US4794011 A)						
53.	Deodorization and stabilization of marine oils	WO2008138575	2008-05-09	DSIPEERS SETS V V DSM DSM IP ASSETS*	98 %	
The invention relates to a process for the preparation of deodorized and stabilized food-grade marine oils by submitting marine oils to a counter-current steam distillation (CCSD) in a thin film column containing a structured packing and, if desired, adding antioxidant(s), to the food-grade marine oils thus obtained and to their uses in the food/feed, cosmetic and/or pharmaceutical industry.						
54.	Process for deodorizing edible oil	WO2011103846	2010-02-26	AIR LIQUIDE GLOBAL E & C SOLUTIONS AIR LIQUIDE GLOBAL E & C SOLUTIONS GERMANY* LURGI	98 %	
In a process for deodorizing edible oil by means of a semicontinuous steam distillation plant, comprising a stripping column with a plurality of separating stages which can be closed off from one another, a degassing stage upstream of the stripping column , and a downstream vapor scrubber, a vacuum generation plant connected to the degassing stage , the separating stages and the vapor scrubber, one feed line for stripping steam opening into each of the degassing stage and the separating stage , indirect heat exchange surfaces each arranged in the separating stages of the upper and lower sections of the stripping column , and a vapor outlet line which is connected to the separating stages arranged in the upper and lower sections of the stripping column and opens into the vapor scrubber, a vacuum is generated in the distillation plant and fills the degassing stage with a batch of edible oil feed which passes through the degassing stage and the separating stages in succession and is treated at the same time with stripping steam, and the batch preheated in the degassing stage is heated in the separating stages of the upper section of the stripping column to 150 to 180°C, heated in the separating stages of the middle section to 230 to 260°C, and cooled in the separating stages of the lower section to 90 to 120°C, the vapors departing from the separating stages of the upper and lower sections are scrubbed with fatty acid in the vapor scrubber and condensed to give a mixed fatty acid distillate. In order to be able to obtain a fatty acid phase rich in sterols and tocopherols and a fatty acid phase low in sterols and tocopherols separately from one another, there is indirect heating at least of the batch present in the first separating stage in flow direction in the middle section of the stripping column , said batch having condensed out of the vapors departing from the separating stages of the middle section of the stripping column in indirectly cooled form and having been fractionated selectively into a fatty acid phase rich in sterols and tocopherols and a fatty acid phase low in sterols and tocopherols.						

55.	Method for manufacturing refined fish oil	WO200142403	1999-12-13	JOO YEON LEE LEE JU YOUNG SOUTH KOREA 3 6 1 3 0 2 CHONJU FUNDAC KU BONMYONG 2 DON HYUN DE SEMICONDUCTOR APARTMENT G 7 0 5 LEE SANG HAK SOUTH KOREA 7 9 0 3 5 0 POHANG NAM KU INDAK DONG 7 WO BAN APARTMENT 1 0 6 2 0 5 NEOMEGA PRODUCT NEOMEGA PRODUCTS* SANG HAK LEE	98 %
Phospholipid-deprived fish oil is obtained by mixing fish oil with water and a monosodium glutamate (MSG) by-product with stirring, fermenting the mixture in the presence of urea, processing the mixture with steam, and centrifuging the mixture to separate water and phospholipides from the fish oil. Further steps are neutralizing the separated fish oil with NaOH, washing and drying the washed fish oil in vacuum; mixing the dehydrated fish oil with powders of earthworm excrement, subjecting the mixture to reaction at least 30 DEG C or higher for 0.5-1 hour, bleaching the fish oil absorbed into the earthworm excrement powders by use of activated clay, and filtering the bleached fish oil through a filter, and deodorizing the bleached and filtered fish oil under a steam atmosphere in a high vacuum, deodorizing apparatus, cooling and filtering the fish oil and packaging it into a closed vessel. The refined fish oil is significantly improved in acid value and peroxide value.					
					
56.	Various energy conservation cycle combined engine	JP2009191838	2007-09-27	TANIGAWA HIROYASU;TANIGAWA KAZUNAGA	98 %
PROBLEM TO BE SOLVED: To generate power of 13,000 times that of an existing engine by a solar gravitational acceleration power generation though existing engines are said to be the theoretically best ones. SOLUTION: Steel balls are gravitationally accelerated by a vertical, all moving blade gravitational turbine in a large specific gravity object solar gravitational acceleration power generation. An atmospheric pressure equal speed power is increased by 1,700 × 7.8= approximately 13,000 times that of an existing steam turbine. A gravity acceleration of 9.8 m/sec vertically downward is added to the gravitational acceleration in vacuum to enhance the acceleration. A head is increased to 1000 m to increase the power generation amount by driving a steel ball speed turbine. The power generation amount is ten times the power generation amount of the world by operating the steel ball solar gravitational acceleration power generation. By this gravitational acceleration power generation, various automobiles, various ships, and various fully electrical houses driven by the extremely inexpensive solar gravitational acceleration power generation battery can be easily and widely used for zeroing fuel cost, exhaustion of CO<sub>2</sub>, and rise of temperature of seawater by everybody for preventing global warming. COPYRIGHT: (C)2009,JPO&INPIT					
					
57.	Vitamin ae maize oil and preparation method thereof	CN102210352	2011-04-12	SHANDONG SANXING CORN INDUSTRY TECHNOLOGY*	98 %
The invention relates to the field of edible oils and fats, in particular to maize oil containing vitamin A and vitamin E and a preparation method thereof. The vitamin AE maize oil contains the vitamin A and the vitamin E, so that the maize oil simultaneously meets double requirements of people on the vitamin A and the vitamin E. The maize oil contains over 65 percent of linoleic acid and rich phytosterol, so that the maize oil can provide sufficient nutrient substances for all using crowds; and the maize oil product being prepared by the method and containing the vitamin A and the vitamin E is oily liquid, is light yellow in color, has good mouthfeel, and meets the production requirement.					
58.	Novel method for extracting natural vitamin e, phytosterol, fatty acid methyl ester by enzyme catalysis and molecular distillation	CN101225414	2008-01-09	HENAN UNIVERSITY OF TECHNOLOGY*	98 %
The invention relates to a method to extract a natural vitamin E, a phytosterin, and a fatty acid methyl ester by the enzyme catalysis and the molecular distillation, which is characterized in that a triglyceride in a distillate which is deodorized from a vegetable oil is hydrolyzed into a fatty acid through a lipase, a methanol is catalyzed by the lipase and the fatty acid is esterified and generated into a fatty acid methyl ester, and the natural vitamin E and the phytosterin are produced when the methanol and the fatty acid methyl ester are processed by filtering, desolventizing, freezing and removing the phytosterin, and removing the fatty acid methyl ester through the secondary molecular distillation. The the extraction method of natural vitamin E, phytosterin, and fatty acid methyl este, compared with the prior art, has the advantages of adopting the process that the oil is catalyzed and hydrolyzed first and then the enzyme catalyzes the fat to be esterified and to be processed by the secondary molecular distillation, no producing wastewater, shortening the esterification time, increasing the natural vitamin E content, deploying the secondary freezing and crystallization to remove the phytosterin with high recovery rate of phytosterin, and beneficially increasing the purity of the vitamin E.					
59.	Production method of high purity natural vitamin e and separation method of tocopherol homologues	CN101445498	2008-11-14	TIANJIN UNIVERSITY*	98 %
The invention relates to a method of producing high purity natural vitamin by soybean oil deodorized distillates and to a method of separating tocopherol homologues, comprising the steps of: (1) distilling alcohol after alcoholysis of the deodorized distillates; (2) crystallizing distillates; extracting and filtering undissolved substances to obtain crude sterol; (3) performing a first-stage molecular distillation on filtrate to remove low boiling components, performing a second-stage molecular distillation on the resulting heavier components to remove free fatty acid; (4) performing the molecular distillation on the second-stage heavier components to collect tocopherol in a light phase; wherein evaporation temperature reaches 170 to 230 DEG C, feeding rate reaches 4 to 16 ml/min, film-scratching rotating speed reaches 100 to 300 rpm, absolute pressure reaches 0.1 Pa, temperature of condensing surfaces is 25 to 30 DEG C, purity of the vitamin E reaches over 50%; (5) distilling crude products to be subjected to ion exchange, elution, removal of eluent and solvent by means of distillation of stripping liquid, so as to obtain the natural vitamin E having a content of more than 85%; (6) after eluting the natural vitamin E via displacement chromatography, collecting different cut fractions to obtain high purity [beta]-[gamma]-tocopherol and [delta]-tocopherol.					
60.	Deodorising process for diglyceride-rich fat or oil	EP1674559	2004-12-24	KAQ*	98 %
Provided is a preparation process of a diglyceride-rich fat or oil, which includes,bringing a fat or oil containing diglycerides in an amount of 50 mass% or greater and having a transition metal content of 5 ppm or less into contact with steam while forming a thin film of the fat or oil. This process makes it possible to prepare a diglyceride-rich fat or oil having a reduced odor and good color efficiently.					
61.	Method for extracting unsaponifiable matters from vegetable oils using chloro-1-butane, composition containing said unsaponifiable matters	FR2803598	2000-01-12	LABORATOIRES EXPANSCIENCE* PHARMASCIENCE LAB PHARMASCIENCES LAB	98 %
The invention concerns a method for extracting usaponifiable matters from a vegetable oil comprising at least a saponification step whereby the oil is transformed into a hydroalcoholic solution, an step for extracting the hydroalcoholic solution with an organic solvent such as chloro-1-butane, preferably the treated vegetable oil is avocado or soya oil.					
					
62.	Rice bran first-level oil refinement production method	CN101455242	2008-12-26	HENAN HUATAI FOOD & OIL MACHINERY ENGINEERING*	98 %
The present invention relates to a manufacturing method of refining rice bran top oil, which can effectively refining top oil from the rice bran and satisfy the people requirement to the health dieting. The invention includes the following steps: (1) crude oil filtering; (2) phosphoric acid degumming and light alkali alkali refining; (3) washing, drying; (4) dewaxing; (5) a primary decolorizing; (6) physical deacidification; (7) secondary alkali refining; (8) iron removing; (9) washing; (10) drying; (11) secondary decolorizing; (12) deodorization; (13) degreasing. The invention adopts a mode of combining the physical refining and chemical refining to realize a large-scale production of the rice bran top oil, provides a favorable technique to the rice bran deep-processing, improves the extraction rate from traditionally 55-60% to 75-80%, saves materials and reduces environmental pollution, has huge economic and social benefits. The invention is a major innovation to the edible rice bran oil production.					
					

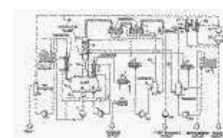
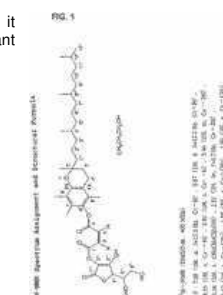
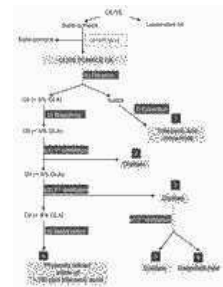
63.	Method for extracting natural vitamin e from vegetable oil and fat refining and deodorizing distillate	CN1775771	2005-11-18	COFCO*	98 %	
This invention publicized one kind to withdraw the natural Vitamin E method from the vegetable oil fining air sweetening distillate, its characteristic was to include the following step: (1) the distillation depickling, is under 117°C-190°C, link speed 3m/s-5m/s condition carries on vacuum degree 0.5Pa~50Pa and temperature the raw material vegetable oil fining air sweetening distillate the distillation removing fatty acid; (2) esterification response; (3) Leng Xi, causes the major part sterol separation; (4) filtration separation except sterol; (5) dehydration; (6) the molecular distillation, will dehydrate the liquid to carry on four levels of molecular distillations after the different temperature and vacuum degree, obtains natural Vitamin E, this invention is conducted through the distillation method the fatty acid in air sweetening distillate the separation elimination, then carries on the disposable junction esterification response production fatty acid methyl ester, this craft reduced an esterification process, reduced the consumption of consumption and energy of accessory material, reduced the production cost, raised the output.						
64.	Method for detecting restaurant and kitchen waste oil mixed in edible vegetable oil	CN102539551	2011-12-07	SHANGHAI LIANGYOU* SHANGHAI MUNICIPAL INSTITUTE OF GRAIN SCIENCES*	98 %	
The invention provides a method for detecting restaurant and kitchen waste oil mixed in an edible vegetable oil. The method comprises the following step of: detecting the content of oxidized triglyceride polymer (TGP) in the edible vegetable oil. The characteristic index selected for the detection method provided by the invention has strong specificity, and the magnitude range fully represents the characteristics of restaurant and kitchen waste oil. The method is suitable for detection and judgment of all secondary oils including gutter oil, swill oil (hogwash oil) and frying oil, with high accuracy rate.						
65.	Method for extracting vitamin e and phytosterin from cottonseed oil deodorizer distillate	CN101643467	2009-09-14	TIANJIN UNIVERSITY*	98 %	
The invention discloses a method for extracting vitamin E and phytosterin from cottonseed oil deodorizer distillate, comprising the following steps that: methanol is added by taking cottonseed oil deodorizer distillate as raw material, reaction is proceeded by taking strong-acid cation exchange resin as catalyst so that free fatty acid in the raw material is converted into relative methyl ester; the catalyst is filtered; the filtrate is evaporated and is then formulated into mixed solution with ethanol after methanol and water are removed, after the mixed solution passes through an adsorption column filled with adsorbent, bed is washed with ethanol until the effluent solution is transparent and clear, and the effluent solution is collected; the adsorption column is eluted with acetic acid ethanol solution, the eluant is collected and then subjected to reduced pressure evaporation, and vitamin E is acquired after the solvent is removed; the material of the effluent solution in which ethanol is removed by evaporation is dissolved in methanol, crystals are separated subsequent to temperature reduction and standing under stirring, and phytosterin crystals are acquired by filtering separation. The invention simplifies the steps for reaction and has the characteristics of small corrosiveness to equipment, no environmental pollution, simple operation and less equipment investment.						
66.	Glyceride oil composition from fish oil and preparation method thereof	KR100684642	2006-09-14	ILSHIN WELLS* ILSHINWELLS IRSHIN WELLS	97 %	
Provided are a glyceride oil composition derived from a fish oil and a preparation method thereof. The composition includes docosahexaenoic acid (DHA) and docosapentaenoic acid (DPA) with a content of 45 to 95% by weight and eicosapentaenoic acid (EPA) with a content of 0.001 to 13% by weight among constituent fatty acids, and a saturated fatty acid having 16 to 18 carbon atoms, which is bonded at 1- and 3-positions, with a content of 0.001 to 5% by weight among constituent fatty acids, in which a weight ratio of docosahexaenoic acid (DHA)/docosapentaenoic acid (DPA) is 0.5 to 8 and a weight ratio of docosahexaenoic acid (DHA)/eicosapentaenoic acid (EPA) is 3.5 to 15. The glyceride oil composition derived from fish oil has nutritional and physiological superiority due to containing a great amount of polyunsaturated fatty acids such as DHA and DPA in a form of glyceride, and can minimize disadvantages of EPA such as inhibition of ?-6 fatty acid metabolism by containing a low amount of EPA. The glyceride oil composition is excellent in digestion and absorption of polyunsaturated fatty acids into a human body by containing a low amount of saturated fatty acids at 1- and 3- positions and process characteristics such as an oxidation stability and water-dispersibility.						
67.	Health-giving foodstuff containing ethyl esters of fatty acids of linseed oil, and method for obtaining the same	PL395052	2011-05-30	3 EL INVENTO SP ZET O OH 3 L INVENT SP ZO O 3L INVENT SP Z O O* LEENLIFE PHARMA LEENLIFE POLSKA LEENLIFE POLSKA S A LEENLIFE POLSKA SPÓLKA AKCYJNA LINLAJF FARMA	97 %	
The subject of invention is the health-giving foodstuff containing ethyl esters of fatty acids of linen oil or linen oil and fish oil, characterised in that it constitutes of microcapsules in form of powder, which contains, in a protein-carbohydrate matrix, a nutraceutical with bioactive ethyl esters of acids ALA, LA or ALA, LA, DHA, EPA with not more than 4 percent by weight addition of ethanol, based on at least 99.8% anhydrous pharmaceutical ethanol, in form of drops of diameter less than 2µm. The nature of the invention is also a method for obtaining of the health-giving foodstuff containing ethyl esters of fatty acids, namely of linen oil or linen oil and fish oil, by mixing of ingredients, their homogenisation, drying, characterised by that after obtaining liquid protein-carbohydrate matrix, a nutraceutical containing bioactive ethyl esters of acids ALA, LA or ALA, LA, DHA, EPA is introduced into it, followed by carrying out of dispersion of ester phase by mechanical agitation until stable form of emulsion is obtained, which is then treated with two-steps and two-stages pressure homogenisation: in 1st stage - at pressure of at least 20 MPa on the 1st step and 4 MPa at the 2nd step, and in 2nd stage - at pressure of at least 30 MPa on the 1st step and 10 MPa at the 2nd step, whilst homogenisation during the 1st stage is carried out in process coupled with thermal processing of the emulsion, which is then spray dried in atmosphere of temperature 160-190°C in the inlet of to drying cabinet and the powder is dispensed in neutral gas atmosphere.						
 						
68.	Apparatus and method for purifying waste-water using a distillation under reduced pressure	KR20090018403	2007-08-17	YOO JIN HI TECHNOLOGY* YUJIN ENC*	97 %	
An apparatus and a method for treating wastewater of food waste using distillation under reduced pressure are provided to simply separate and remove various sludges from the wastewater of food waste using distillation under reduced pressure without using chemicals or expensive forced separation equipment. An apparatus for treating wastewater of food waste using distillation under reduced pressure comprises a heater(D1), a reduced pressure evaporator(D2), and a heat exchanger. The heater heats wastewater of food waste with heat of steam. The reduced pressure evaporator generates water vapor by evaporating the wastewater of food waste heated by the heater in a reduced pressure state. The heat exchanger obtains condensed wastewater by cooling the water vapor discharged from the reduced pressure evaporator.						
						
69.	Purification of nutritive oils	SE7509201	1975-07-26	PHARMACIA* VITRUM	97 %	
Parenterally administrable oil-in-water emulsions formed from nutritive oils, such as soybean and sunflower oils, are improved first by treating the nutritive oil with silicic acid to remove undesirable components such as peroxides, pigments, thermal and oxidative decomposition products, certain unsaponifiable matter such as sterols, and polymers. Purification is effected by treating the oil with silicic acid or silica gel either directly, or as a solution thereof in a suitable solvent, such as hexane. Autoxidation of the purified oil is prevented by adding to the purified oil a tocopherol antioxidant, gamma.-tocopherol being preferred. There is also added a metal scavenging agent such as ascorbyl palmitate.						
						

70.	Process for producing fuel for diesel engine	WO200238708	2001-04-26	FRONTIER JAPAN* FUJITA HIDEYUKI Fujita Hideyuki (I) HIDEYUKI FUJITA MURAKAMI SEISHIRO MURAKAMI Seishiro Murakami Seishiro (I) SEISHIRO MURAKAMI	97 %	
A fuel for a diesel engine is produced by using a fish waste oil or a mixture of a vegetable waste oil and the fish waste oil which have conventionally been wasted as a starting material. Fish oil (virgin oil or fish waste oil) or a mixture of the fish oil and vegetable oil (virgin oil or vegetable waste oil) (hereinafter referred to as starting material) is subjected to stirring treatment while introducing ozone, and an oxidation-reduction agent and a polymerization inhibitor are added during the stirring treatment. Moreover, it comprises the respective steps of a first treatment step in which a stirring treatment is carried out while introducing ozone to the above-mentioned starting material, and an oxidation-reduction agent and a polymerization inhibitor are added during the stirring treatment, a second treatment step in which the material obtained in the above-mentioned first step is filtered and a stirring treatment is further carried out while introducing ozone again, and a step of introducing a vegetable additive to the resulting material by the second treatment step.						
71.	Method for distilling and refining high-grade oil by rice bran oil molecules	CN103320220	2013-07-19	HENAN HUATAI FOOD & OIL MACHINERY ENGINEERING*	97 %	
The invention relates to a method for distilling and refining high-grade oil by rice bran oil molecules; and the problems of high energy consumption, large refining loss, high cost and environmental pollution of the prior art can be effectively solved. The invention adopts the technical scheme including the following steps of: heating crude oil, freezing by a freezing system, entering a filter system, enabling the obtained rice bran oil to enter a degassing system after being heated by a heater; heating to 220-255 DEG C to enter a deacidification system, cooling to enter into a molecular still; pumping a light component into a condensation system by high vacuum of 5-30 Pa; flowing into a light-component collecting tank, and enabling a heavy component to be separated and flow into a heavy-component collecting tank at the same time; heating by an efficient heater, pumping the light component into the condensation system by high volume of 0.1-10 Pa; flowing into the light-component collecting tank, enabling the heavy component to be separated and flow into the heavy-component collecting tank at the same time; cooling by a fatty acid assurance device and an efficient condenser, entering a crystallizing tank to crystallize, and filtering by a filter to obtain the high-grade oil. The method is high in yield of product, and free of waste water discharge, and is an innovation in the method for refining the high-grade oil by rice bran oil.						
72.	Method for deodorization, deacidification, and benzopyrene removal of edible vegetable oil	CN102640805	2011-02-18	FENGNING JINGBEI FIRST PRAIRIE ORIGINAL ECOLOGICAL FOOD SCIENCE & TECHNOLOGY DEVELOPMENT*	97 %	
A method for deodorization, deacidification, and benzopyrene removal of edible vegetable oil comprises the following steps: A. selecting a molecular distillation device; B. setting working conditions of the molecular distillation device; C. performing deodorization of the vegetable oil; D. performing deacidification of the vegetable oil; and E. removing benzopyrene from the vegetable oil. Molecular distillation is new technology for liquid-liquid separation in high vacuum, and has the advantages of less material heat loss and good separation effect. The invention adopts a three-level falling-film molecular distillation device with a vacuum degree of 0.2-20 Pa and an adjustable heating temperature of 0-300 DEG C, and a method for deodorization, deacidification, and benzopyrene removal of edible vegetable oil is developed. The method has the advantages of energy saving, water saving, no pollution during the processing process, no damage to the nutritional components of the oil, and capability of continuous automatic production. The method is low-carbon and clean production technology.						
73.	Extraction apparatus for essential terpene-oil	KR20020046393	2000-12-13	HANKOOK NISSO*	97 %	
PURPOSE: Provided is an extraction device for plant terpene essential oil which enables the extraction of highly pure plant terpene essential oil in a short period of time, making the increased oil recovery percentage and reducing the extraction cost. CONSTITUTION: The device comprises: a pressure tank(200) which keeps the plant terpene essential oil; a vacuum pump(300) which is connected to the above pressure tank(200) and reduces the pressure in the above pressure tank(200); the steam supplying device to supply high temperature steam to the above pressure tank(200); a heat-exchanging condenser(400) connected to the above pressure tank(200) which condenses the high temperature/high pressure steam containing the extracted terpene essential oils from the above raw material; a cooling water device(500) to cool the above heat-exchanger condenser; and a separator of oil and water(600), connected to the above heat-exchanging condenser, which separates terpene essential oil, water and impurity from the condensed water in the heat-exchanging condenser.						
74.	Combined deacidifying and deodorizing tower applicable to deodorizing edible oil in oil industry	CN203419908	2013-09-03	HENAN GRAIN TECHNOLOGY*	97 %	
The utility model discloses a combined deacidifying and deodorizing tower applicable to deodorizing edible oil in the oil industry. The tower specifically comprises the following four parts from top to bottom: a filler type fatty acid capturing section, a filler pre-removing section, a drum membrane deodorizing section and a mammoth pump deodorizing and decoloring section at the bottom sequentially, hermetically and fixedly connected. The tower disclosed by the utility model combines the advantages of conventional plate type tower, filler tower, tray tower and the like, can be applicable to different variety of greases, and the remarkable characteristics of strong deodorizing capacity, steam saving (about 40% of gas consumption of the original plate type tower) and low content of trans-fatty acids (the most important grease index, wherein the less the content, the better the grease; oil is easy to generate the matter under a condition of high temperature).						
75.	Method of and device for distilling off secondary substances from oily liquids	IL49764	1975-06-16	SCHUMACHER HEINZ*	97 %	
Impurities or unwanted by-products are distilled off from an oily liquid by means of an ancillary stripping agent. The vaporization temperatures of the impurities and of the ancillary stripping agent lie below that of the oily liquid. Spontaneous distillation takes place in a decompressor to which the materials to be treated are supplied from a mixer or contactor. The decompressor comprises two nozzles arranged in series. In the decompressor the materials to be treated are subjected to a pressure considerably below the mixer pressure and somewhat below the separator pressure. Decomposition of the oil stream occurs in the decompressor into a non-volatile liquid phase and a vapor phase containing the ancillary stripping agent and the impurities originally in the oil feed. The mixed vapor/liquid stream enters the separator which is at a pressure which lies considerably below the pressure obtaining in the mixer.						

76.	Method for extracting ethyl ester enriched fish oil from fish oil refining byproduct	CN103509651	2012-06-27	ZHEJIANG OCEAN UNIVERSITY*	97 %	
The invention relates to a method for extracting ethyl ester enriched fish oil from a fish oil refining byproduct, which comprises the following steps: by taking soapstock and solid lipid of the fish oil refining byproduct as raw materials, recovering the soapstock through an acid-based ethyl ester catalysis process, recovering the solid lipid through an alkali-based ethyl ester catalysis process, performing a secondary three-stage molecular distillation and primary urea inclusion combined process, and enriching to obtain the ethyl ester fish oil having high EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid) content. According to the invention, the process is simple and low in cost, solves the byproduct recovery problem during fish oil refining, avoids environmental pollution, changes the wastes into valuable substances, and greatly increases the value of the product; and the physical and chemical indices of the extracted ethyl ester fish oil product conform to the standard, the fish oil has no rancid flavor, the total content of EPA and DHA is respectively increased to 78.42% and 76.15%, and the fish oil achieves better economic benefits.						
77.	Extraction solvents derived from oil for alcohol removal in extractive fermentation	CA2823222	2011-06-17	BUTAMAX ADVANCED BIOFUELS* DU PONT DE NEMOURS PORUMAX ADVANCED BIOFUELS	97 %	
In an alcohol fermentation process, oil derived from biomass is hydrolyzed into an extractant available for in situ removal of a product alcohol such as butanol from a fermentation broth. The glycerides in the oil can be catalytically (e.g., enzymatically) hydrolyzed into free fatty acids, which form a fermentation product extractant having a partition coefficient for a product alcohol greater than a partition coefficient of the oil of the biomass for the product alcohol. Oil derived from a feedstock of an alcohol fermentation process can be hydrolyzed by contacting the feedstock including the oil with one or more enzymes whereby at least a portion of the oil is hydrolyzed into free fatty acids forming a fermentation product extractant, or the oil can be separated from the feedstock prior to the feedstock being fed to a fermentation vessel, and the separated oil can be contacted with the enzymes to form the fermentation product extractant. The fermentation product extractant can be contacted with a fermentation broth for in situ removal of a product alcohol.						
78.	A method for deodorization of fish oil from squids	KR20110085512	2010-01-20	DONGWOO INDUSTRY* SILLA UNIVERSITY*	97 %	
PURPOSE: A deodorizing method of cuttlefish fish oil capable of removing the unique fishy smell from the cuttlefish fish oil is provided to improve the deodorizing effect for the cuttlefish fish oil compare to a conventional steam distillation method. CONSTITUTION: A deodorizing method of cuttlefish fish oil comprises the following steps: degumming cuttlefish fish oil; de-acidifying the degummed cuttlefish fish oil; de-colorizing the de-acidified cuttlefish fish oil; and passing the de-colored cuttlefish fish oil through a column filled with glutamic acid for deodorizing.						
79.	Distillation and deodorization method for production of biodiesel	CN103468400	2013-09-25	SHAANXI HENGSHENG BIODIESEL TECHNOLOGY DEVELOPMENT*	97 %	
The invention provides a distillation and deodorization method for production of biodiesel. The distillation and deodorization method is characterized in that raw oil is reacted with methanol to generate coarse methyl ester containing glycerine soap; the coarse methyl ester containing glycerine soap is subjected to water washing and then transferred into a disk centrifugal separator to quickly separate coarse methyl ester and a glycerine soap water mixture; then the centrifuged coarse methyl ester enters a falling film dehydrating tower to remove residual moisture; the distillation product is taken out from a distillation column in two parts; a cycle oil cooling system is arranged at the upper part of the column; a distillation cooling substance taken out from the upper part of the column is the finished product of biodiesel; another distillation cooling substance taken out from the top part of the column is an odor substance (light-component oil); the afterheat is comprehensively recycled, thus over 20% of the production cost on heat exhaustion can be decreased; a vacuum cold well used for protection is provided for a distillation system, so that the yield of the odor substances (light-component oil) can be increased, and a vacuum set is able to work smoothly; the yield of the biodiesel can reach more than 92%; the acid value is not greater than 0.5mgKOH/G; no foreign odor is generated.						
80.	Edible vegetable oil with lower trans fatty acid and refining method thereof	CN102273522	2010-06-13	SHENZHEN LAM SOON EDIBLE OILS*	97 %	
The invention relates to fully refined edible vegetable oil with lower trans fatty acid and a refining method thereof. The vegetable oil is rapeseed oil, soybean oil, corn oil or blending oil with any ratio; the trans fatty acid content of the vegetable oil is less than or equal to 1 weight percent; and the oil smoke point is more than or equal to 210 DEG C. The refining method comprises the steps of selecting crude oil, degumming, deacidifying, removing saponin, dehydrating, decoloring, removing impurities, deoxygenizing, deodorizing, cooling and obtaining finished products. The refining method is characterized in that: at the decoloring state, the removing grain size of the impurities is reduced from 25 mu m to 10 mu m; and at the deodorizing stage, the deodorizing temperature is controlled to be between 230 and 245 DEG C and the vacuum degree is controlled to be within 2 tau. Oil is refined at lower temperature and a lowest trans fat structure is realized by controlling the grain size of the impurities and the vacuum degree; after being refined, the vegetable oil has good quality, namely the trans fatty acid is reduced to be lower than 60 percent of the normal level; and the refined vegetable oil has light color, high smoke point, high purity and storage resistance and is beneficial to people's long-term health.						
81.	Process for separating vitamin E from vegetable oil refining	CN1034367	1987-09-17	TSINGHUA UNIVERSITY*	97 %	
The technological process for separating vitamin E product of low vitamin E content from foots of vegetable oil refining falls into the field of comprehensive utilization of oil-bearing crops. According to this invention, the technological process comprises extraction and refining. The extraction process is composed of esterification, washing, vacuum distillation, secondary esterification, secondary washing, secondary vacuum distillation, extraction and separation after cooling. The refining of vitamin E is realized via adsorption over silica gel column and treating by anionic ion exchange resins. This invention can provide a 50-60% pure vitamin E obtained from the foots of vegetable oils refining. The said vitamin E is widely used in the pharmaceutical, food and fodder industries. The said technological process is simple and easy to be carried out with significant economic effectiveness.						
82.	Apparatus for treating food waste and extracting bio oil	KR101137758	2011-08-24	G & AMP P BIOTECH G & P BIOTECH*	97 %	
The present invention relates to an apparatus for treating food waste and extracting bio oils. More particularly, the present invention relates to an apparatus for treating food waste and extracting bio oils, which is configured such that food waste is injected into a fermentation dryer and a fermentation chamber (referred to as a "fermentation dryer") in which microorganisms are injected so as to ferment, dry, and decompose the food waste to reduce the weight thereof, the dried and decomposed organic substances are crushed into small particles using a crusher, the crushed particles are heated at a low pressure and low temperature within a distillation tank so that vapor and oil can be gasified by means of a low temperature thermal decomposition and then separated and discharged, the discharged gas is cooled in a distillation tower so that moisture (carbon liquid fertilizer) and oil are separated during liquefaction, the separated oil is collected in a vacuum storage tank, and the collected oil is supplied to a centrifugal separator so that the oil can be refined. Thus, the apparatus of the present invention may extract a liquid fertilizer (carbon liquid fertilizer), bio oils, and activated carbon (carbon) while treating organic substances such as food waste, residual product compost, etc.						
83.	Process for production of highly enriched fractions of natural compounds from palm oil with supercritical and near critical fluids	EP1818388	2006-02-10	CAROTECH* CAROTECH B H D CAROTECH CHEMOR	97 %	
From palm oil valuable compounds like the tocopherols, carotenoids, phytosterols, and others can be derived. Enrichment to highly concentrated fractions is hindered by the enormous number of components involved, the very low volatility, the very low solubility of many of the compounds in organic solvents, and the high viscosity of the mixtures to be processed. Starting materials for the new process are enriched fractions of tocopherols (about 20 to about 50 wt.-%) and/or carotenoids (about 10 to 30 wt.-%) from palm oil obtained by conventional processes, or by counter current multistage processes with supercritical carbon dioxide. These processes, not addressed here, may comprise: Removal of free fatty acids, transesterification of the triglycerides to methyl or ethyl esters, removal of the esters, e.g. by short path distillation, separation of the tocopherol fraction from the carotenoid fraction by cooling. In the new process, fractions derived from crude palm oil, already enriched to some extent in tocopherols, carotenoids, phytosterols, and others, are being treated by supercritical fluid technology in a unique combination of counter current separation with selective adsorption and desorption using supercritical fluids. A first enrichment, comprising one or more separation steps by application of a near critical or a supercritical fluid in a single or multistage (counter current) separation process is combined appropriately with a second enrichment step wherein the product of the first enrichment step is directly adsorbed on an adsorbent (silicagel) by passing the product flow over a fixed bed of adsorbent without substantial pressure change, and subsequent desorption with the same (or an other) near critical or supercritical fluid at the same or a different pressure as in the first separation, or by a pre-designed sequence of pressures and temperatures. For the tocopherol enrichment, carbon dioxide at near critical conditions above the critical temperature of carbon dioxide is used. For the carotenoid enrichment, propane at near critical conditions below the critical temperature of propane is used (fig. 2).						

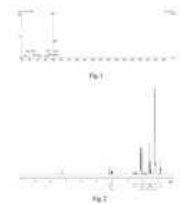
84.	Process for the rectification of mixtures of high-boiling air- and/or temperature-sensitive useful products	WO2006018256	2005-08-13	DSM* DSM IP ASSETS	97 %	
According to the invention, a process for the rectification of mixtures of high-boiling air- and/or temperature-sensitive substances which require a high separation efficiency is proposed, in particular a process for the working-up of a VE- or VEA-containing product stream. The process is characterized in particular in that, in a first purification stage , low-boiling products and unspecified isomers of the useful product are separated from the product stream virtually without loss of useful product and that, in a second purification stage , the useful product is removed in a stream having a purity of > 97 % by weight and a further stream having a purity of > 92 % by weight. A preferred embodiment of the process serves for working up VEA, in which the loss of useful product in the first purification stage is less than 5 %, based on that amount of VEA in the feed which is added to the purification stage per unit time. Furthermore, the first purification stage may comprise a rectification column (1), from the top (1a) of which the low-boiling products and the unspecified isomers of VEA are taken off, a stream containing the useful product in purified form being taken off at the side (15) and/or at the bottom (1 b) of the column (1).						
85.	Method for refining camellia oil by adopting short-path distillation	CN101717690	2009-10-30	SOUTH CHINA UNIVERSITY OF TECHNOLOGY*	97 %	
The invention discloses a method for refining camellia oil by adopting short-path distillation, comprising two- stage distillation. During first- stage distillation, firstly the crude camellia oil is directly poured into a buffer tank, then the crude camellia oil is introduced into a first- stage film evaporator through a pump to undergo primary dehydration and degasification under the conditions of temperature between 60 DEG C and 120 DEG C and pressure between minus 0.8MPa and minus 0.95MPa. During second- stage distillation, the camellia oil after undergoing dehydration and degasification is introduced into a second- stage short-path distillator through a pump to undergo deacidification under the conditions of temperature controlled between 100 DEG C and 180 DEG C and pressure between 100Pa and 0.1Pa, thus obtaining oleic acid with high acid value and camellia oil with low acid value. The process with high pollution of wastewater drained after soda soap washing and water washing in the chemical processes of alkali refining and neutralizing does not exist during processing the camellia oil. The flow is simple, the oleic acid with high value and the camellia oil with low acid value are separated by distillation, the separation process is a physical process, and the camellia oil is free of loss, thus having very high yield.						
86.	Process for producing microbial fat or oil having lowered unsaponifiable matter content and said fat or oil	WO2004033698	2003-10-09	NIPPON SUISAN NIPPON SUISAN KAISHA* SUNTORY	97 %	
A process for producing oil comprising a highly unsaturated fatty acid as a constituent fatty acid. A microorganism such as Mortierella is cultured in a medium containing nitrogen source at a concentration of 2 to 15% in a culture tank equipped with an agitation impeller. The nitrogen source is previously sterilized at a pH of not more than 5.						
87.	Processing method of high-paraffin-content sunflower seed crude oil	CN103966019	2014-05-22	SHANGHAI LIANGYOU SEA LIONS OIL INDUSTRY*	97 %	
The invention provides a processing method of high-paraffin-content sunflower seed crude oil, naturally standing high-paraffin-content sunflower seed crude oil, directly refining the supernatant sunflower seed crude oil with the oil content of higher than 80%, and refining the understratum sunflower seed crude oil with the oil content of lower than 80% after pretreatment. The method solves the problem that the high-paraffin-content sunflower seed crude oil can not be processed according to the normal refining technique (alkali refining, decolorizing, deodorizing and winterizing). The processing method is simple to operate, fully utilizes the high-paraffin-content sunflower seed crude oil, and obviously enhances the economic benefit of the enterprise. The quality indexes of the prepared first-grade sunflower seed oil satisfy the national first-grade sunflower seed oil standard; the freezing test (0 DEG C) proves that the sunflower seed oil is clear and transparent after being stored for 36 hours and is beyond the requirements for clarity and transparency in the first-grade sunflower seed oil freezing test (stored at 0 DEG C for 5.5 hours) in national standard GB10464.						
88.	Extractive distillation of alcohols obtained from olefins	BE494834	1948-12-07	EXXONMOBIL RESEARCH & ENGINEERING STANDARD OIL*	97 %	

91.	Brucea javanica oil obtained by reducing content of protein, and medicine composite and preparation method thereof	CN102133245	2011-03-16	SHENYANG YAODA PHARMACEUTICAL*	97 %
The invention relates to brucea javanica oil and medicine composite and preparation method thereof. The brucea javanica oil is obtained by reducing the content of protein in brucea javanica fatty oil by protein removing process, so that the obtained brucea javanica oil has good stability, does not have anaphylactic reaction and other side effects, and is safe and effective in clinical medication. The invention further relates to an safety and effective fatty oil emulsion by taking the brucea javanica oil as main ingredients, and a preparation method thereof.					
92.	Procedure of physical refining utilised for obtainment of edible olive pomace oil concentrated in triterpenic acids and recovery of functional components present in the crude oil	WO2010010219	2008-07-22	CONCEJO SUPERIOR DE INVESTIGASIOESSIENTIKAS CONSEJO SUPERIOR DE INVESTIG CIENTIFICAS CONSEJO SUPERIOR DE INVESTIG CIENTIFICAS CSIC* CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS ESPAÑA OLEAKOLA EL TEJAR OLEICOLA EL TEJAR*	97 %
Procedure of refining crude olive pomace oil obtained through centrifuging or decantation of the pomace, comprising the stage of filtration of the starting crude olive pomace oil carried out through filters having a pore size comprised in the interval from 0.1 to 20 microns and at a temperature below 70 °C, preferentially between 35 and 45 °C.					
93.	L-ascorbic acid-2-o-maleic acid-a-tocopherol diester 1-propanol adduct and process for producing the same	WO03006460	2002-06-05	NISSHIN PHARMACEUTICAL SENJU PHARMA* SENJU PHARMACEUTICAL	97 %
The present invention provides a novel industrially excellent and ecological process for producing methylcobalamin which is useful as a medicament etc. More specifically, it provides a process for producing methylcobalamin by reducing cyanocobalamin or hydroxocobalamin in the presence of a reducing agent, and then methylating the reductant by adding a water-soluble methylating agent.					
94.	Protein extraction from canola oil seed meal	WO2004000031	2003-06-19	BARKON N JUTRASAJNS KORP MB BURCON NUTRA SCIENCE BURCON NUTRASCIENCE*	97 %
The recovery of protein from canola oil seed meal and other oil seed meals in the preparation of canola or other oil seed protein isolate is improved in comparison to conventional toasted meal by the use of a meal which has been air-desolventized at a temperature below about 50 °C.					
95.	Process for the preserving distillation of fatty acids	GB8414230	1983-06-23	COGNIS* HENKEL	97 %
A process for the nondegenerative distillation of C6-C24-fatty acids, of the type obtained by splitting natural fats and oils or by synthetic processes, such as for example the oxidation of paraffins, the crude product is thermally dried under reduced pressure, the dried and heated crude product is subjected to fractional evaporation in falling-film evaporators, optionally in the presence of superheated steam, and the various vapor fractions are deposited in condensers. The thermal drying process is conducted at a temperature of 60 DEG -80 DEG C. and a pressure of 90-100 mbars. The de-watered crude product is fractionated in a film-forming evaporator and, after distillation, passes to a rectification column which condenses the low boiling constituents as the main runnings. (From US4595461 A)					
96.	Method for separating tall oil	CN103897009	2014-04-14	XI AN HEALTHFUL BIOTECHNOLOGY*	97 %
The invention relates to a method for separating tall oil. The method comprises the steps of thin film distillation, first- stage molecular distillation, second- stage molecular distillation, saponification and esterification, washing and the like. By adopting the method disclosed by the invention, tall oil fatty acid, refined phytosterol and tall oil rosin are obtained by separating the tall oil, wherein the fatty acid content of tall oil fatty acid is more than 90%, and the recovery rate of tall oil fatty acid reaches more than 90%; the phytosterol content of refined phytosterol is more than 90%, and the recovery rate of refined phytosterol reaches more than 80%.					



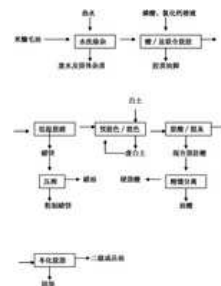
97.	Water-soluble vitamin e derivative modified fat-soluble anti-cancer drug compound and formulation, preparation method and use thereof	CN102516258	2011-11-11	CHIA TAI TIANQING PHARMACEUTICAL* CHIA THAILAND TIAN JIN PHARMACEUTICAL NANJING MEI XINING MEDICAL SCIENCE & TECHNOLOGY	97 %
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Disclosed is a trolox derivative-modified fat-soluble anti-cancer pharmaceutical compound having a structure as represented by formula I or II. An active moiety of the anti-cancer pharmaceutical compound, camptothecins or a camptothecin derivative, is covalently bonded to a lipophilic moiety, a trolox ester or a trolox amide, by a linking group to form the fat-soluble anti-cancer pharmaceutical compound. Also disclosed are a preparation, preparing method and use of the pharmaceutical compound.



98.	Rice bran oil refinement and byproduct production method	CN102492546	2011-12-05	EZHOU HUATIAN EQUIPMENT ENGINEERING* WUHAN POLYTECHNIC UNIVERSITY* WUHAN SCIENCE RESEARCH DESIGN INSTITUTE OF STATE ADMINISTRATION OF GRAIN*	97 %
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The invention relates to a rice bran oil refinement and byproduct production method, and solves the problems of poor quality, low product and byproduct yield, low purity, complex technique, small production scale and the like in the existing product oil refined from rice bran oil. The technical scheme is as follows: the method comprises the following steps: carrying out acid/salt combined degumming on rice bran raw oil, dewaxing at low temperature, decolorizing, deacidifying/deodorizing, and degreasing by winterization to obtain tertiary rice bran oil and byproducts (crude wax cake, mixed fatty acids and solid grease). The technique provided by the invention is simple to control, can stably obtain Chinese standard tertiary rice bran oil and byproducts thereof, and can implement large-scale production.



99.	Oil or fat composition	WO2011074575	2010-03-31	KAQ*	97 %
100.	Method for extracting squalene from vegetable oil deodorized distillate	CN101830770	2010-06-02	TIANJIN UNIVERSITY*	97 %

Provided is an oil or fat composition, which has an MCPD-FS content (ppm) of 13 ppm or less, the content being measured by a Deutsche Gesellschaft für Fettwissenschaft (DGF) standard method C-III 18(09), has a diacylglycerol content of 15 mass% or more, and is subjected to deodorization treatment.

$$\text{Lipo ratio (\%)} = \text{LPC} = (\text{PC} + \text{LPC}) \times 100$$

The invention relates to a method for extracting squalene from vegetable oil deodorized distillate. A process method of combining molecular distillation with extraction and crystallization is used to extract high-concentration squalene and recover natural vitamin E and phytosterol with a certain purity from vegetable oil deodorized distillate. The method comprises the following steps of: carrying out a saponification reaction of the raw material; twice molecularly distilling unsaponifiable matter obtained by extraction; using the distillate obtained during the second distilling as a raw material for cold crystallization to obtain phytosterol; recovering squalene and mixed tocopherol from the filtrate; and extracting with multi-stage solvents to respectively enrich squalene and vitamin E in two phases. The process has simple flows, low-prices raw material and higher separation efficiency and recovery rate and comprehensively utilizes useful contents in the deodorized distillate.

