

(43) International Publication Date
5 November 2015 (05.11.2015)

(51) International Patent Classification:

A61K 8/11 (2006.01) *A61P 17/00* (2006.01)
A61K 9/50 (2006.01) *A61Q 19/00* (2006.01)

(21) International Application Number:

PCT/SG2015/050095

(22) International Filing Date:

4 May 2015 (04.05.2015)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10201402009V 2 May 2014 (02.05.2014) SG

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P.O. Box 1531, Robinson Road Post Office, Singapore
903031 (SG).(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG,
MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM,
PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC,
SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ,
TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU,
TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE,
DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,
LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

— with international search report (Art. 21(3))

(54) Title: DERMAL TREATING FACIAL MASK

[Fig. 1]

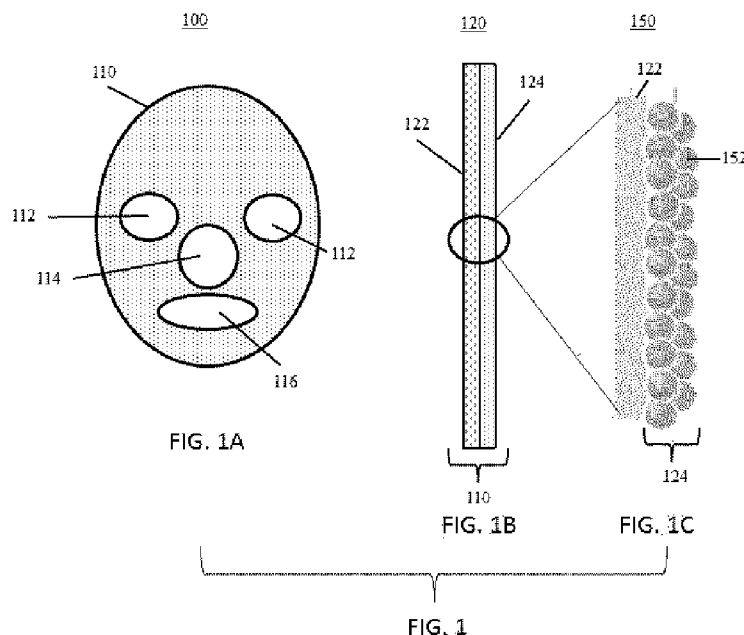


FIG. 1

(57) Abstract: A system and method for targeted dermal treatment is provided. The system includes a facial mask for targeted facial dermal treatment which includes a substrate and a layer formed on the substrate and including a plurality of pH sensitive encapsulating structures. Each of the plurality of encapsulating structures is configured to become water soluble only when contacting a facial surface having a pH substantially equaling or exceeding a predetermined pH threshold.

Description

Title of Invention: Dermal Treating Facial Mask

Priority Claim

[0001] The present application claims priority to Singapore Patent Application No. 10201402009V, filed 02 May, 2014.

Technical Field

[0002] The present invention relates to dermal treating facial masks. In particular, it relates to dermal treating facial masks including pH sensitive encapsulating layers.

Background Art

[0003] A popular type of facial treatment mask includes a substrate and a liquid wetting agent. The substrate typically includes non-woven paper and biocellulose paper cut into a face shape. The liquid wetting agents include a combination of ingredients, which are absorbed into the substrate. The mask is then applied onto a user's face and allowed to dry over a time of approximately five to fifteen minutes before being removed.

[0004] In this manner, it is claimed that the ingredients are absorbed into the epidermal and, possibly, the dermal layers of the skin thereby having a treatment effect on the skin. However, such liquid based mask have a major disadvantage in that the ingredients for facial treatment are diluted in the wetting agents and therefore the effectiveness of skin treatment by these ingredients is lessened. Furthermore, any absorbance of ingredients by the skin is non-targeted such that target areas and non-target areas receive the same treatment effect. In addition, only water soluble ingredients are absorbed into the substrate.

[0005] Thus, what is needed a system and method for targeted dermal treatment which delivers both water soluble and water insoluble active ingredients to the skin in a non-diluted form and delivers these active ingredients only to targeted areas of the skin needing treatment. Furthermore, other desirable features and characteristics will become apparent from the subsequent detailed description and the appended claims, taken in conjunction with the accompanying drawings and this background of the disclosure.

Summary of Invention

[0006] According to the Detailed Description, a system for targeted dermal treatment is provided. The system includes a substrate and one or more layers of a pH sensitive dermal treatment substance encapsulating system formed on the substrate. The one or more layers of the pH sensitive dermal treatment substance encapsulating system include a plurality of encapsulating structures, each of the plurality of encapsulating

structures configured to become water soluble only when contacting a surface having a pH substantially equaling or exceeding a predetermined pH threshold.

[0007] Additionally, in accordance with the detailed description, a facial mask for targeted facial dermal treatment is provided. The facial mask includes a substrate and a layer formed on the substrate which includes a plurality of pH sensitive encapsulating structures. Each of the plurality of encapsulating structures is configured to become water soluble only when contacting a facial surface having a pH substantially equaling or exceeding a predetermined pH threshold.

[0008] Further, in accordance with the detailed description, a method for facial treatment is provided. The method includes providing a facial mask comprising a substrate on a first surface of the facial mask and a plurality of pH sensitive encapsulating structures on a second surface of the facial mask opposite the first side. Each of the plurality of pH sensitive encapsulating structures is configured to encapsulate active nutrients and to become water soluble only when contacting a facial surface having a pH substantially equaling or exceeding a predetermined pH threshold. The method further includes soaking the facial mask in a water solution and applying the facial mask to a user's facial skin surface with the second surface of the facial mask in contact with the user's facial skin surface. Finally, the method includes removing the facial mask from the user's facial skin surface only after a predetermined time calculated to allow ones of the plurality of pH sensitive encapsulating structures in contact with targeted portions of the user's facial skin surface having a pH substantially equaling or exceeding a predetermined pH threshold to become water soluble and release sufficient amounts of the active nutrients encapsulated therein for maximum and effective absorption by the targeted portions of the facial skin surface.

Brief Description of Drawings

[0009] The accompanying figures, where like reference numerals refer to identical or functionally similar elements throughout the separate views and which together with the detailed description below are incorporated in and form part of the specification, serve to illustrate various embodiments and to explain various principles and advantages in accordance with a present embodiment.

[0010] **Fig. 1**

[Fig. 1] comprising FIGs. 1A, 1B and 1C, illustrates a facial mask in accordance with a present embodiment, wherein FIG. 1A is a front planar view of the facial mask, FIG. 1B is a side planar view of the facial mask, and FIG. 1C is a side planar view of a magnified portion of the facial mask.

[0011] **Figs. 2A-2B**

FIG. 2A illustrates a front planar view of the facial mask in accordance with the

present embodiment and a face of a user of the facial mask wherein the arrow indicates that the exposed surface of the facial mask is placed against the face of the user. FIG. 2B illustrates a front planar view of the facial mask covering the face of the user in accordance with the present embodiment.

[0012] **Fig. 3**

Fig. 3 comprising FIGs. 3A, 3B, 3C and 3D, depicts magnified side planar views of the process of targeted facial dermal treatment by the facial mask of FIG. 1 in accordance with the present embodiment, wherein FIG. 3A illustrates a side planar view of the facial mask, FIG. 3B illustrates a side planar view of the plurality of pH sensitive encapsulating structures coming into contact with the skin, FIG. 3C illustrates a side planar view of the pH value of the skin triggering release of the active ingredients from the plurality of pH sensitive encapsulating structures at a targeted high pH skin location, and FIG. 3D illustrates a side planar view of time-controlled release of the active nutrients from the plurality of pH sensitive encapsulating structures to ensure maximum and effective absorption by the skin at the targeted high pH skin location.

[0013] **Fig. 4**

Fig. 4 depicts a flow chart of a method for facial treatment using the facial mask of FIG. 1 in accordance with the present embodiment.

[0014] Skilled artisans will appreciate that elements in the figures are illustrated for simplicity and clarity and have not necessarily been depicted to scale. For example, the dimensions of some of the elements in the illustrations, block diagrams or flowcharts may be exaggerated in respect to other elements to help to improve understanding of the present embodiments.

Description of Embodiments

[0015] The following detailed description is merely exemplary in nature and is not intended to limit the invention or the application and uses of the invention. Furthermore, there is no intention to be bound by any theory presented in the preceding background of the invention or the following detailed description. Herein, a system and method for targeted dermal treatment is presented in accordance with present embodiments having the advantages of delivering active ingredients in smart, pH sensitive encapsulation systems to provide a localized high concentration the active ingredients at targeted locations on a user's skin surface. Based on the pH value of the skin surface, the smart systems are triggered at high pH values in the targeted locations to release the active ingredients to these skin areas.

[0016] The present invention includes a facial mask used for facial treatments. In a present embodiment, the mask is made of a biocellulose substrate in a face shape and a pH

sensitive dermal treatment substance encapsulating system formed on the substrate. The pH sensitive dermal treatment substance encapsulating system includes a plurality of encapsulating structures having active ingredients encapsulated therein. The facial mask is soaked in a wetting agent containing a combination of various kinds of natural extracts. The pH sensitive dermal treatment substance encapsulating system acts as a smart encapsulation system which has triggered release of the active ingredients by neutral and basic pH value. Various kinds of active ingredients could be encapsulated into the smart system, preferably those ingredients with limited water solubility which are easily oxidized in water in their free states.

[0017] FIG. 1 includes FIGs. 1A, 1B and 1C and illustrates a facial mask in accordance with a present embodiment. Referring to FIG. 1A, a front planar view 100 depicts the facial mask 110 in accordance with the present embodiment which is formed in the shape of a human face and includes eye openings 112, a nose opening 114 and a mouth opening 116 so as to improve the conformity of the facial mask 110 to a human face while also allowing the user of the facial mask 110 to breathe, talk and do his/her usual work while wearing the facial mask 110. FIG. 1B depicts a side planar view 120 of the facial mask 110 which includes a biocellulose substrate layer 122 on a first surface of the facial mask 110, and one or more layers 124 of a pH sensitive dermal treatment substance encapsulating system formed on the substrate 122 and on a second surface of the facial mask opposite the first surface. Referring to FIG. 1C, a side planar view 150 illustrates a magnified portion of the facial mask 110 wherein the one or more layers 124 of the pH sensitive dermal treatment substance encapsulating system can be seen to include a plurality of pH sensitive encapsulating structures 152.

[0018] The pH sensitive encapsulating structures 152 can, for example, be comprised of interpolymer complex coated hollow silica vesicles wherein the porous silica walls of the silica vesicles may provide stability and feasibility to allow loading of content into and releasing of the content from the vesicle. Such an exemplary pH sensitive encapsulating structures 152 is disclosed in patent publication WO2014017981 A1, assigned to the assignee of the present application. The interpolymer complex layer provides stimuli-responsive properties depending on the pH of the environment in which the porous hollow silica vesicle having the interpolymer complex immobilized thereon is placed. For example, the interpolymer complex may (i) collapse on the porous hollow silica particle to seal the pores on the particle, or (ii) dissociate to open the pores on the particle. In this manner, the pH sensitive encapsulating structures 152, e.g., the silica vesicles, will react to the surrounding pH to unload pre-loaded active ingredients from the vesicles. The active ingredients can include nutrients or active ingredients for consumer care, such as skin care such as those water soluble and water insoluble active ingredients discussed herein. The pH sensitive encapsulating structures 152 are pH-

triggered such that they are stable structures in the presence of acidic pH but release the active ingredients encapsulated therein in the presence of neutral pH or basic pH.

[0019] FIG. 2 includes FIGs. 2A and 2B and illustrates use of the facial mask 110 in accordance with the present embodiment. Referring to FIG. 2A, a front planar view 200 depicts the facial mask 110 and a face 220 of a user of the facial mask 110. An arrow 230 indicates that the exposed surface 124 of the facial mask is to be placed against the face 220 of the user during use. FIG. 2B illustrates a front planar view 250 of the facial mask 110 in use covering the face 220 of the user and having the substrate side 122 away from the face 220.

[0020] FIG. 3, including FIGs. 3A, 3B, 3C and 3D, depicts magnified side planar views 300, 330, 360, 380 of the process of targeted facial dermal treatment by the facial mask 110 in accordance with the present embodiment. Referring to FIG. 3A, the side planar view 300 depicts the substrate 122 and the layers 124 of the plurality of pH sensitive encapsulating structures 152 of the facial mask 110. The arrow 310 indicates the application of the facial mask to a surface of facial skin 320 of the user's face 220. FIG. 3B illustrates the side planar view 330 of the plurality of pH sensitive encapsulating structures 152 coming into contact with the surface of the skin 320.

[0021] A pH value of the surface of the skin 320 of a human is determined by several factors including sex, age, body site and time of day. The physiological pH value of the surface of the skin 320 is typically acidic in the range of 4.0 to 6.5. The skin surface pH on a human cheek is higher than on a human forehead. With age or photo damage the skin surface pH increases to more than 6.5. An increased pH is due to reduced skin barrier integrity or epidermal cohesion, where the epidermal layer of skin is the surface layer of the skin which is largely responsible for the vital barrier function of the skin. Also, skin injuries can alter the skin surface pH, raising the skin surface pH higher. For instance, a pH of 7.4 has been detected in damaged areas of the skin due to the lack of *stratum corneum*, the outermost layer of the epidermis consisting essentially of layers of dead skin cells. And a mean pH value of 7.42 has been reported for chronic wounds. The higher pH values for these areas and aged skin can be used as a trigger for the encapsulating structures 152 to release the active ingredients encapsulated therein.

[0022] The side planar view 360 of FIG. 3C depicts the pH value of the skin 320 triggering release of active ingredients 362 from the plurality of pH sensitive encapsulating structures 152 at a targeted high pH skin location. The plurality of encapsulating structures 152 are configured to become water soluble only when contacting a facial skin 320 surface having a pH substantially equaling or exceeding a predetermined pH threshold, the predetermined threshold being neutral pH, a pH value of 7.0. Thus, the encapsulating structures 152 release the active ingredients encapsulated therein when contacting a skin 320 surface having a neutral or basic pH value.

- [0023] When the facial mask which contains the smart encapsulation system in accordance with the present embodiment is applied onto the skin surface 320, the encapsulating structures 152 of the smart encapsulation system (which are typically microencapsulated particles as depicted in the view 360) come into close interaction with the skin 320. At areas of high skin pH values, triggered release of the active ingredients 362 from the encapsulated structures 152 occurs. The released ingredients 362 are then absorbed by the skin 320.
- [0024] In accordance with the present embodiment, the active ingredients 362 can be advantageously delivered in sufficient quantity quantities to targeted portions of the skin surface 320 such as areas of injuries or wounds, damaged or aged areas, or reduced skin barrier areas. The active ingredients 362 may include water insoluble substances such as tocopherol, D-panthenyl triacetate, co-enzyme Q 10, capsaicin, tea tree oil, or ferulic acid and, in accordance with the present embodiment, such water insoluble substances can be delivered by the facial mask 110. Alternatively, the active ingredients 362 may include water soluble substances such as ascorbyl glucoside, ascorbyl palmitate, or glucosamine and, in accordance with the present embodiment, greater quantities of such water soluble substances can be delivered by the facial mask 110 to targeted areas of the skin 320.
- [0025] Referring to FIG. 3D, the side planar view 380 depicts time-controlled release of the active ingredients or nutrients 382 from the plurality of pH sensitive encapsulating structures 152 in sufficient quantities to ensure maximum and effective absorption by the skin 320 at the targeted high pH skin location.
- [0026] FIG. 4 depicts a flow chart 400 of a method for facial treatment using the facial mask 110 in accordance with the present embodiment. The facial mask 110 includes the substrate 122 on the first surface of the facial mask 110 and pH sensitive encapsulating structures 152 in layers 124 on the second surface of the facial mask opposite the first surface. Each of the pH sensitive encapsulating structures 152 is configured to encapsulate active nutrients and to become water soluble only when contacting a facial surface (e.g., a surface of the skin 320) having a pH substantially neutral or basic pH value. At step 410, the facial mask 110 may be presoaked in a water solution of dissolved wetting agents including one or more water soluble active ingredients such as ascorbyl glucoside, ascorbyl palmitate or glucosamine.
- [0027] Then, at step 420, the facial mask 110 is soaked in a water solution including one or more water soluble active nutrients before, at step 430, the facial mask 110 is applied to a user's facial skin 320 surface with the second surface of the facial mask in contact with the user's facial skin surface. The facial mask 110 remains on the skin 320 for a predetermined time calculated to allow the pH sensitive encapsulating structures 152 in contact with targeted portions of the user's facial skin 320 surface having a neutral or

basic pH value to become water soluble and release sufficient amounts of the active nutrients encapsulated therein for maximum and effective absorption by the targeted portions of the facial skin 320, after which, at step 440, the facial mask 110 is removed from the user's facial skin 320 surface. The solubilizing process of the pH sensitive encapsulating structures 152 reacting with the pH neutral or pH basic skin 320 opens the structures 152 and allows the encapsulated active nutrients 362 to be released.

[0028] Thus it can be seen that the facial treatment process in accordance with the present embodiment is an improvement over conventional facial treatment processes using typical facial masks. Firstly, the encapsulation provides high localized concentration for the active ingredients which would have been diluted in the liquid wetting agents. Secondly, encapsulated ingredients are expected to have enhanced stability in liquid which might otherwise be easily oxidized. Thirdly, unlike the blind delivery mechanism in other facial masks, the triggered release of ingredients in the smart encapsulation system in accordance with the present embodiment can target the delivery to skin surfaces with high pH values which need more such active ingredients/nutrients for adequate treatment. While exemplary embodiments have been presented in the foregoing detailed description of the invention, it should be appreciated that a vast number of variations exist.

[0029] It should further be appreciated that the exemplary embodiments are only examples, and are not intended to limit the scope, applicability, operation, or configuration of the invention in any way. Rather, the foregoing detailed description will provide those skilled in the art with a convenient road map for implementing an exemplary embodiment of the invention, it being understood that various changes may be made in the function and arrangement of elements and method of operation described in an exemplary embodiment without departing from the scope of the invention as set forth in the appended claims.

Claims

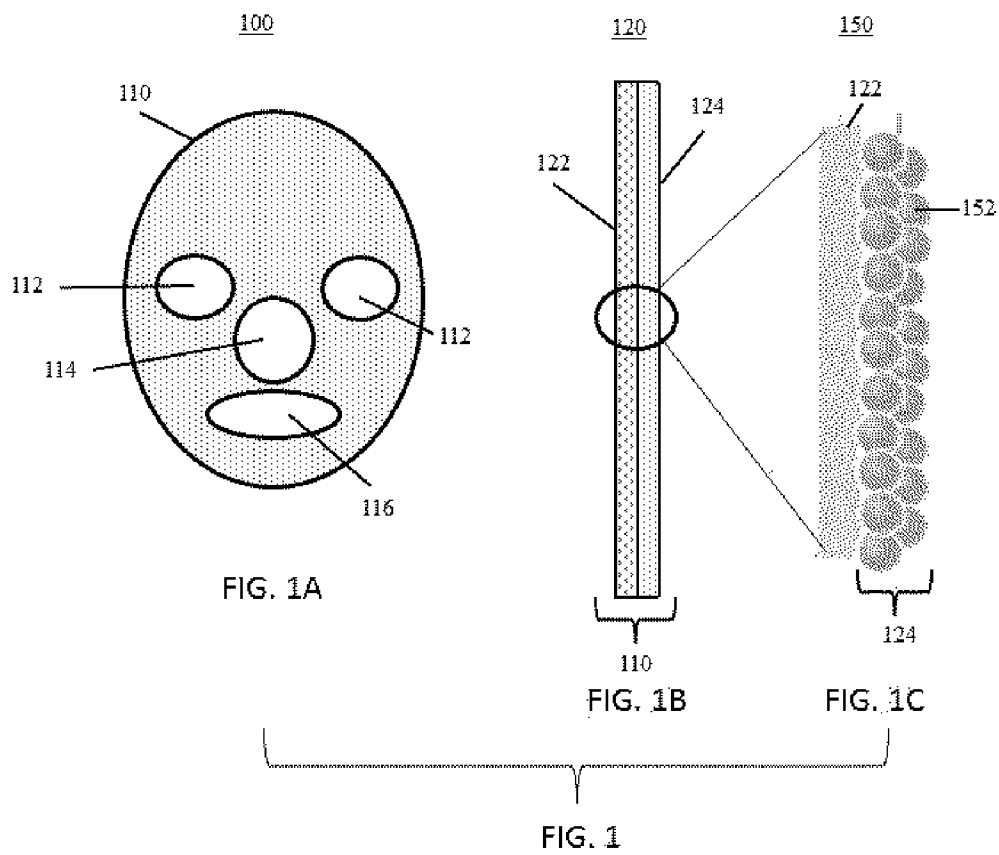
- [Claim 1] A system for targeted dermal treatment comprising:
a substrate; and
one or more layers of a pH sensitive dermal treatment substance encapsulating system formed on the substrate,
wherein the one or more layers of the pH sensitive dermal treatment substance encapsulating system comprise a plurality of encapsulating structures, each of the plurality of encapsulating structures configured to become water soluble only when contacting a surface having a pH substantially equaling or exceeding a predetermined pH threshold.
- [Claim 2] The system in accordance with Claim 1 wherein the predetermined pH threshold is pH neutral.
- [Claim 3] The system in accordance with Claim 1 or Claim 2 wherein each of the plurality of encapsulating structures encapsulates dermal treatment substances.
- [Claim 4] The system in accordance with Claim 3 wherein the dermal treatment substances comprise one or more water insoluble active nutrients selected from the group comprising tocopherol, D-panthenyl triacetate, co-enzyme Q 10, capsaicin, tea tree oil, and ferulic acid.
- [Claim 5] The system in accordance with Claim 3 or Claim 4 wherein the dermal treatment substances comprise one or more water soluble active nutrients selected from the group comprising ascorbyl glucoside, ascorbyl palmitate and glucosamine.
- [Claim 6] The system in accordance with any of the preceding claims wherein the substrate comprises a biocellulose material.
- [Claim 7] The system in accordance with any of the preceding claims wherein the substrate is presoaked with a solution of liquid wetting agents dissolved in water.
- [Claim 8] The system in accordance with Claim 7 wherein the liquid wetting agents comprise one or more water soluble active nutrients selected from the group comprising ascorbyl glucoside, ascorbyl palmitate and glucosamine.
- [Claim 9] A facial mask for targeted facial dermal treatment comprising:
a substrate; and
a layer formed on the substrate and comprising a plurality of pH sensitive encapsulating structures,
wherein each of the plurality of encapsulating structures is configured

- to become water soluble only when contacting a facial surface having a pH substantially equaling or exceeding a predetermined pH threshold.
- [Claim 10] The facial mask in accordance with Claim 9 wherein the predetermined pH threshold is pH neutral.
- [Claim 11] The facial mask in accordance with Claim 9 or Claim 10 wherein each of the plurality of encapsulating structures encapsulates dermal treatment substances.
- [Claim 12] The facial mask in accordance with Claim 11 wherein the dermal treatment substances comprise one or more water insoluble active nutrients selected from the group comprising tocopherol, D-panthenyl triacetate, co-enzyme Q 10, capsaicin, tea tree oil, and ferulic acid.
- [Claim 13] The facial mask in accordance with Claim 11 or Claim 12 wherein the dermal treatment substances comprise one or more water soluble active nutrients selected from the group comprising ascorbyl glucoside, ascorbyl palmitate and glucosamine.
- [Claim 14] The facial mask in accordance with any of Claims 9 to 13 wherein the substrate comprises a biocellulose material.
- [Claim 15] The facial mask in accordance with any of Claims 9 to 14 wherein the substrate is presoaked with a solution of liquid wetting agents dissolved in water.
- [Claim 16] The facial mask in accordance with Claim 15 wherein the liquid wetting agents comprise one or more water soluble active ingredients selected from the group comprising ascorbyl glucoside, ascorbyl palmitate and glucosamine.
- [Claim 17] A method for facial treatment comprising:
providing a facial mask comprising a substrate on a first surface of the facial mask and a plurality of pH sensitive encapsulating structures on a second surface of the facial mask opposite the first surface, each of the plurality of pH sensitive encapsulating structures configured to encapsulate active nutrients and to become water soluble only when contacting a facial surface having a pH substantially equaling or exceeding a predetermined pH threshold;
soaking the facial mask in a water solution;
applying the facial mask to a user's facial skin surface with the second surface of the facial mask in contact with the user's facial skin surface;
and
removing the facial mask from the user's facial skin surface only after a predetermined time calculated to allow ones of the plurality of pH

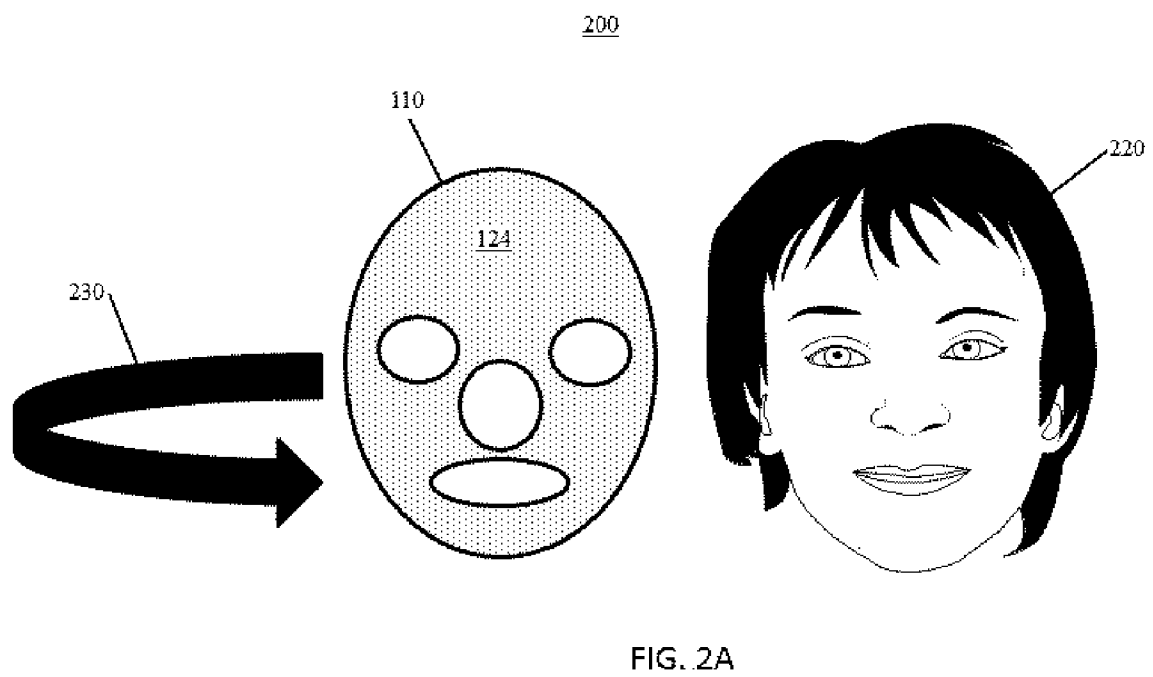
sensitive encapsulating structures in contact with targeted portions of the user's facial skin surface having a pH substantially equaling or exceeding a predetermined pH threshold to become water soluble and release sufficient amounts of the active nutrients encapsulated therein for maximum and effective absorption by the targeted portions of the facial skin surface.

- [Claim 18] The method in accordance with Claim 17 wherein one or more of the plurality of pH sensitive encapsulating structures encapsulate water insoluble active nutrients selected from the group comprising tocopherol, D-panthenyl triacetate, co-enzyme Q 10, capsaicin, tea tree oil, and ferulic acid.
- [Claim 19] The method in accordance with Claim 17 or Claim 18 wherein one or more of the plurality of encapsulating structures encapsulate one or more water soluble active nutrients selected from the group comprising ascorbyl glucoside, ascorbyl palmitate and glucosamine.
- [Claim 20] The method in accordance with any of Claim 17 to 19 wherein the step of soaking the facial mask in the water solution comprises soaking the facial mask in a water solution including one or more water soluble active nutrients selected from the group comprising ascorbyl glucoside, ascorbyl palmitate and glucosamine.
- [Claim 21] The method in accordance with any of Claims 17 to 20 further comprising before the step of providing the facial mask the step of presoaking the facial mask in a water solution of dissolved wetting agents.
- [Claim 22] The method in accordance with Claim 21 wherein the dissolved wetting agents comprise one or more water soluble active ingredients selected from the group comprising ascorbyl glucoside, ascorbyl palmitate and glucosamine.

[Fig. 1]



[Fig. 2A]



[Fig. 2B]

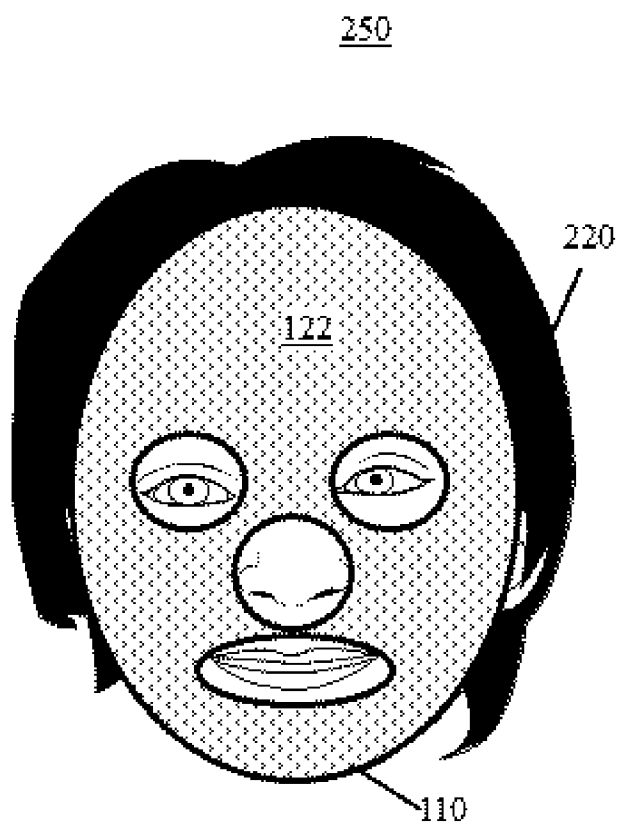
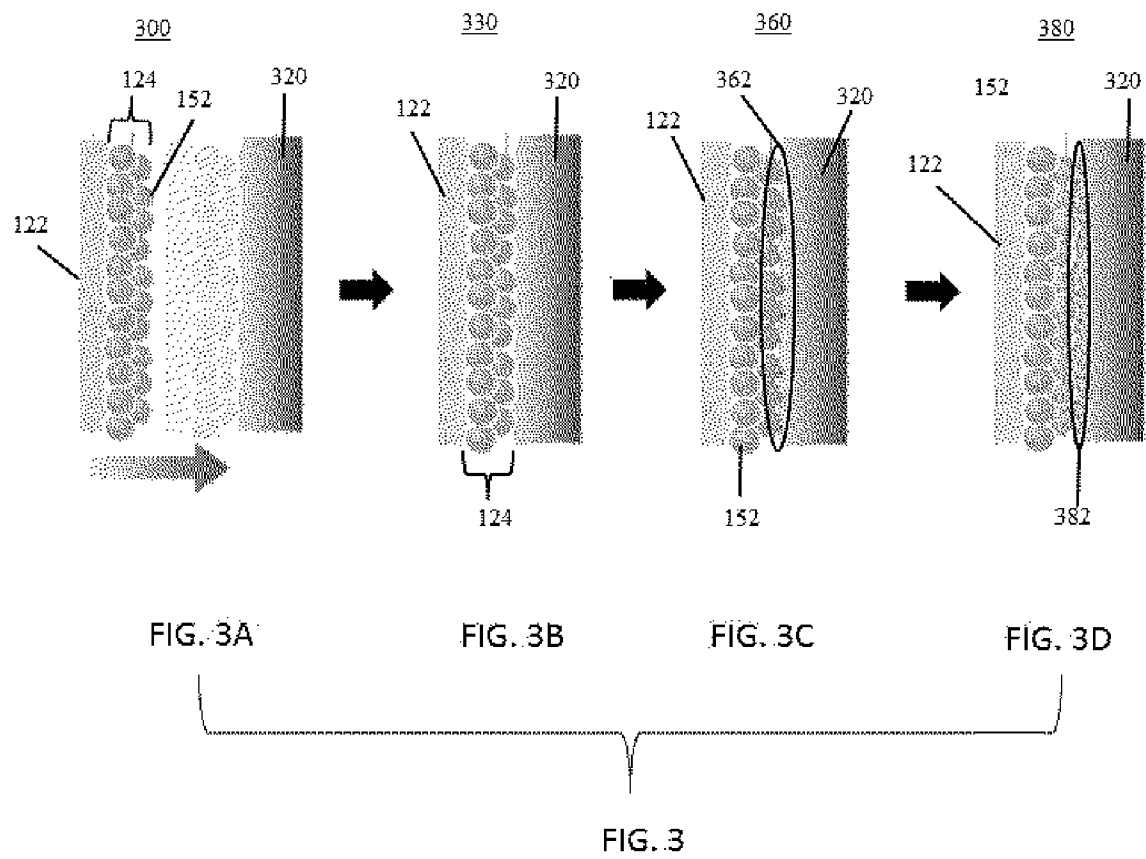


FIG. 2B

[Fig. 3]



[Fig. 4]

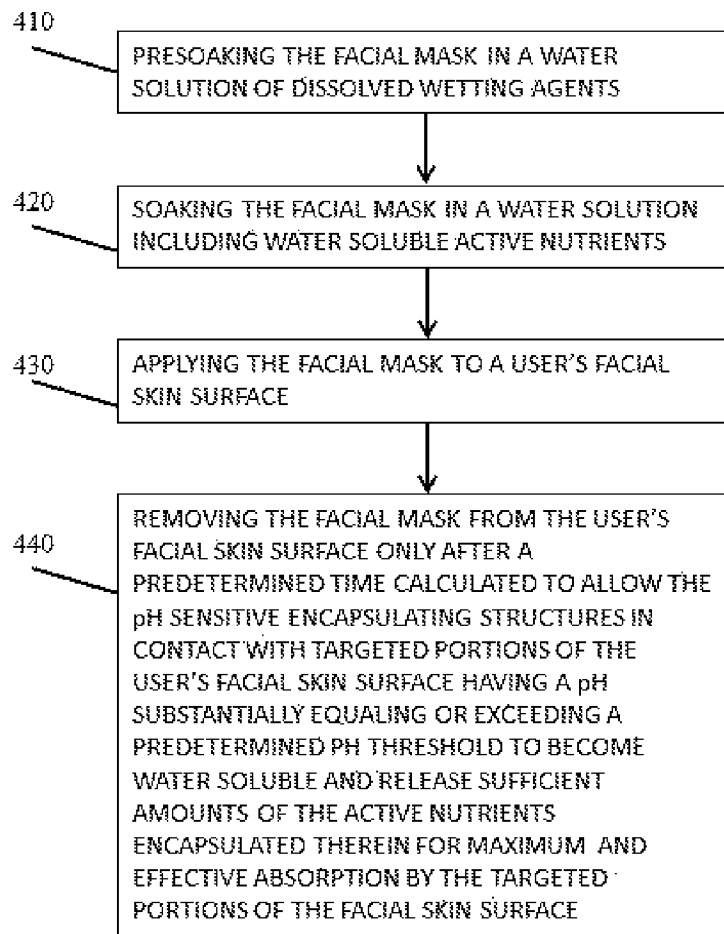
400

FIG. 4

INTERNATIONAL SEARCH REPORT

 International application No.
PCT/SG2015/050095

A. CLASSIFICATION OF SUBJECT MATTER

A61K 8/11 (2006.01) A61K 9/50 (2006.01) A61P 17/00 (2006.01) A61Q 19/00 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPOQUE and STN search - EPODOC, WPIAP, HCAPLUS, MEDLINE, BIOSIS;

Keywords - pH and sensitive/trigger/control/response/stimulate/release, capsule/colloid/liposome/porous silica/hollow silica, face or facial mask, dermal patch, Tocopherol, D-panthenyl triacetate, co-enzyme Q 10, ubiquinone, ubidecarenone, capsaicin, tea tree oil, melaleuca oil, ferulic acid, ascorbyl glucoside, ascorbyl palmitate, glucosamine, bio/microbial cellulose, wetting agent.

Patentscope; AusPat - Inventor and applicant name searches

Google Search Keywords - "acne skin pH", "elderly and baby skin pH"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	Documents are listed in the continuation of Box C	



Further documents are listed in the continuation of Box C



See patent family annex

* "A"	Special categories of cited documents: document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent but published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 24 July 2015	Date of mailing of the international search report 24 July 2015
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA Email address: pct@ipaustalia.gov.au	Authorised officer Joseph Ambrus AUSTRALIAN PATENT OFFICE (ISO 9001 Quality Certified Service) Telephone No. 0262223649

INTERNATIONAL SEARCH REPORT		International application No.
C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		PCT/SG2015/050095
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/0123596 A1 (KOHANE et al) 09 June 2005 [0007], [0049], [0054], [0084], [0088].	1-16
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A	Acne - The Skin Care Clinic [retrieved from the internet on 9 July 2015] <URL: http://web.archive.org/web/20130409163746/http://www.theskincareclinic.com.au/skin-advisor/acne > published on 9 April 2013 as per Wayback Machine. Refer to heading "The importance of the skin's pH and the acid mantle "	1-22

INTERNATIONAL SEARCH REPORT		International application No.	
Information on patent family members		PCT/SG2015/050095	
This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.			
Patent Document/s Cited in Search Report		Patent Family Member/s	
Publication Number	Publication Date	Publication Number	Publication Date
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