

---

## Review on: New Developments in Cosmetics & Skin Care Products

Ranubai Bharamu Pujari \*, Shirish B. Nagansurkar, Sanjay K. Bais  
Fabtech College of Pharmacy, Sangola, Solapur, Maharashtra, India  
\*Corresponding Author: pujariranubai@gmail.com

*Received Date: January 13, 2025; Published Date: 17, March, 2025*

---

### Abstract

*A portion cosmetic, an assortment that includes products for health and beauty, are used to alter along with enhance an individual's appearance in alongside take care of the body and face. Cosmetics contain a long the past reaching approximately in any scenario 7,000 the period, and they have used in almost all communities on earth. Among the often-used cosmetics are soaps, creams, and sunscreens. Even though a large portion of the world's population views cosmetics as beneficial, it is important to recognize the risks and toxicity of cosmetics. Some of the newest developments in cosmetics include release in reaction to biological signals, circular economy, and in silico modelling for cosmeceuticals. Cosmetics, also known are the skin care items of the future. These indicate the latest norms for skincare and the most recent advancements in the market for aesthetic items. The push developing pharmaceutical cosmetics could result. Different creation falls beneath specific transmission techniques, such as Vesicle, Particulate systems, Microemulsion, and others delivery devices. utilization of liposomes, several, colloid and microemulsions in the development of cosmic have attracted a lot of attention in recent years. These methods will offer new, simpler-to-apply formulations to the cosmetics industry. Formulations and delivery systems could progress and innovate as a result of nanotechnology. It has been discovered that the use of nanoparticles increases product efficacy and customer satisfaction. As a result, many conventional cosmeceuticals are being replaced by nano cosmeceuticals.*

**Keywords** - Cosmetics, Cosmeceuticals, Nanoparticulate, Microparticulate, Nano-cosmetics, skincare.

---

### INTRODUCTION

The element of beauty and health items called cosmetics can be used to alter either enhance an individual's glance or to considering proper care of your entire body and face. In addition to being used to alter a person's appearance; cosmetics are also used to take care of the skin and body and to enhance their odour. Cosmetics are commonly used for skin and body maintenance, but they also serve a variety of important and distinct purposes. [1,2,3,4,5,6] Cosmetics with physiologically active ingredients substances & make promises to provide pharmaceutical or similar advantages are known as cosmetic pharmaceuticals, or cosmeceuticals. Similar to cosmetics, skincare products are applied topically, but their contents have an impact on the skin's biological processes. [7] Consumers nowadays, everywhere, are searching as an individual need's product that suggestion several benefits via minimal labour. Not only do more and more men use cosmetics to improve their own face features, but also women.

---

Cosmetics are items designed to be applied to the body in order to enhance attractive traits, cleanse, beautify, or change look. Cosmetics are materials applied to the human body to improve its odor or appearance<sup>[8]</sup>. Recently, more people are looking for skincare products made from natural ingredients instead of chemicals. The retail prices of these natural items have increased as a result of this.<sup>[9]</sup> The report from Ecovia Intelligence predicts that worldwide sales of natural and organically produced personal care products will reach twelve billion dollars from twenty-first century through twenty-six. The biggest industry is in the nation of China. For these products in Asia, while in Germany, they already make up 10% of the market.<sup>[10]</sup> The way cosmetic formulations interact with the skin is one of their primary areas of research<sup>[11]</sup>.

The skin, the biggest organ within the human body, carrying out over 20 vital physiological functions. The epidermis produces cholecalciferol (D3), which is involved in endocrine function. Every part of the body acts as a physical barrier that is resilient to stress and injury. It recognizes sensations and distress, shields the body from the outside world, including pollution, radiation, and sunlight, and keeps out harmful microbes and chemicals. Skin care products are pharmaceutical formulations meant to come into contact with the body's numerous exterior regions in order to exhibit advantageous topical effects and offer defence against ageing skin diseases.<sup>[12]</sup> Cosmetics Additionally, individual hygiene products are frequently designed to enhance the barrier's performance, prevent the spread of infections, cleanse and moisturise the complexion's outer layer, and offer nutrients and protection to the epidermis, its plants, and its connected cells— all that are involved in the skin's overall wellness<sup>[13,14,15]</sup>. As baby boomers get older, a need for seeming more youthful and well is now a top concern for everyone. This has produced enormous commercial opportunities. The negative effects of using a lot of substances identified by products with environmental advantages about employing organic goods made with crops & additional resources found in nature

for health reasons have been brought to light by social media and the internet. Consequently, the cosmetics business is increasingly focusing more on natural goods<sup>[16]</sup>.

### History

At least 7,000 years have passed since the invention of cosmetics, which are used in nearly every society on the planet. It is believed that the first known example of a human custom is aesthetic physique art, involving makeup. Even though cosmetics were frowned upon in Rome at the time, some of the nobility there used them. It has been discovered that some Romans created cosmetics in the past. Kohl was used, for instance, to line the eyes. An unidentified American made the discovery of deodorant for cosmetic use in 1888, and it was sold under the brand name "Mum." Even in the year 1900, cosmetics were not embraced by the populace. The first roll-on and aerosol deodorants were introduced to the market in 1952 and 1965, respectively<sup>[17,18,19,20,21,22]</sup>. Ancient Egyptians and Sumerians were among the first people to employ cosmetics thousands of years ago. The Middle Ages saw a continual usage of cosmetics in Europe, with the cheeks being rouged and the face being whitened.<sup>[23]</sup> Although opinions on cosmetics have changed throughout time, using makeup was publicly frowned upon for a large portion of Western history.<sup>[24]</sup> One source claims that the following early significant advancements in cosmetics:

Ancient Egyptians used kohl. Ancient Egypt and also utilised Castor oil is used as a soothing agent as healing.

The appearance of the treatments with rosewater, avocado oil, and wax from bees were first reported by the Romans

In the nineteenth century, along with Vaseline and lanolin<sup>[25]</sup>

---

## Definition & Classification

### Definition

Chemical components that are synthesized or obtained from natural sources are mixed together to create cosmetics. Cosmetics are used for several things, such as skin care and personal grooming. They can also be used to accentuate natural traits and cover up flaws.<sup>[26]</sup> Cosmetics are also defined as the term "cosmetic" has its origins in the Greek term "Kosm tikos," such indicates "capable of arrangement, skilled in decoration." Its definition gives rise to the words "kosmein" for decoration and "kos-mos" for order and harmony.<sup>[27]</sup> Usually, medications are placed straight onto the skin of an individual. outside surfaces for serve the following four purposes:

Preserve excellent condition

Alter look

Safeguard

Address body odor<sup>[28,29]</sup>.

### Classification

A better classification would be as follows:

Products aimed at personal hygiene: conditioners, fragrances, and cleansers

Cosmetics, also known for skin and hair care: dental products, topical remedies

Embellishment products: - (lipstick hues and scents)

Defensive makeup, such as lotion and wrinkle-reduction elements

Remedial makeup, such as masks for the skin and hair colour

Treatments for repairs: (trimming creams and lotions moisturizers)

Energetic beauty items: dentist with fluorine and antibacterial agents<sup>[30]</sup>

### Importance Of the Cosmetics

One uses cosmetics to improve their appearance. For a few millennia, cosmetics have been accessible. The use of cosmetic preparations was first observed in Egypt. According to Egyptian history, eye colour and a substance that produced a pleasant smell were the primary cosmetics used. Both men and women these days are turning their heads towards fashion and have developed a conscientious awareness of their appearance. Cosmetics are made either naturally or in a hypoallergenic manner to meet customer demands. It is believed that the main goal of cosmetics is to increase a person's self-confidence and contentment with their appearance.

Cosmetics are made either naturally or in a hypoallergenic manner to meet customer demands. It is believed that the main goal of cosmetics is to increase a person's self-confidence and contentment with their appearance. It must also have the capacity to astonish others. Among the often-produced essential cosmetics these days are eyeshadows, lotions, anti-wrinkle formulas, lipsticks, nail polishes, and scents. Products such as lipsticks, nail polishes, and facial creams are used to enhance the colour and palatability of the applied area. Wax and the appropriate quantity of cocoa butter are used to make them. Wax and cocoa butter are examples of fatty bases that are used to create such semi-solids.

The cleansing properties of certain formulations, such as gels, creams, and colognes, make them popular among people of all genders in daily life. Retarding skin oxidation and promoting a young appearance are the primary goals of anti-aging lotions. Water, soap, and cleansing cream are all regarded as necessary ingredients with cleaning properties. Cream based cosmetic preparations are administered as a kind of skin food for people with rough, dry skin. Certain widely used fat creams, such as Vaseline, are primarily utilised as lubricants and cleaning agents.

Dry creams are used in the manufacturing of soap and gelatin, which serves as the skin's foundation. Teenagers use a lot of gels and oils for their hair, which has helped the hair care sector become one of the top producers worldwide. Herbal oils, moisturizers, and shampoos are made in huge quantities

to prevent lice and dandruff. A visually appealing exterior is typically given more weight in cinematic jobs. The best in the business concentrates mostly on exuding an air of elegance from the outside, which may be achieved by using a variety of makeup looks over an extended period of time. These artists utilize makeup to maintain the texture and strength of their skin, hair, and nails in addition to their outward appearance.<sup>[31]</sup>

### **Cosmeceuticals**

#### **Cosmetics**

Nowadays, "cosmeceuticals" are a phrase that everyone knows, and they play a part in maintaining skin care in an organic and natural way. A cosmetic and a cosmeceutical differ significantly from one another. The terms "cosmetic" and "pharmaceutical" are actually combined to form the term "cosmeceutical."<sup>[32]</sup>

#### **Difference between cosmetics& cosmeceuticals**

<b>Cosmetics</b>	<b>Cosmeceuticals</b>
Its FD&C Legislation describes a cosmetic item according to its intended use, such as cleanliness beautifying, enhancing, attractiveness, or changing appearance.	On the other hand, cosmetics provide skin healthy benefits.
The ingredients in cosmetic products are only very superficially absorbed by the skin.	Cosmeceutical products are made up of active chemicals that, when applied topically, alter the Human the complexion's biological structure in a way that has healing ,disease fighting,or therapeutic effective.
The cosmetics cannot prevent the skin from withering since they only impact the epidermis, or the outer layer of the skin remaining.	Cosmeceuticals offer pharmaceutical benefits since they are more potent, pure, concentrated, and effective.

*Table 1: Difference Between Cosmetics & Cosmeceuticals*

### **Commonly used skin cosmeceuticals**

#### **Hydroxyl Acids**

Commonly referred to as fruity acidic substances, glycolic fluid as an essential component in a lot of cosmeceutical items. Among these include acids like citric acid, lactose, plus acid malic.

#### **Botanicals**

Nowadays, the overall number of cosmeceutical compounds on sales come into this group. Ferule acid, Certain herbs, like leafy green tea and grapevine extraction, can be helpful for the body.

#### **Depigmenting Agent**

Goods that include skin-lightening chemicals applied in their formulas are becoming ever more famous. Hydroquinone as citric acid (vitamins C), acid kojic, and the extract of licorice (guardian, also) are frequently used depigmenting medicines.

#### **Antioxidants**

Antioxidants shield cells from cellular harm by reducing free radical damage. It offers defense prevent skin tumor's; damage to the skin and suppress swelling, resulting to a loss of cartilage. Typical antioxidants consist of Alpha-lipoic acid (ALA found) with the antioxidant L-ascorbic acid (the vitamin C).

## Sunscreen

The most essential cosmeceutical is a sunscreen since it shields skin from UV rays, the most potent environmental irritant. They thus aid in delaying the onset of ageing symptoms. [33]

## Developments in the Technology of Cosmetic Formulation

Cosmetic products employ variety of cutting-edge cosmetic delivery methods. Any combination / technique known as a skincare supply chain may improve a cosmetic product's measurable or perceived performance. A variety of novel distribution methods were showcased in a recent Happi article. [34]

<p><b>Methods of Vesicle Transport</b></p> <p>The Liposomes Neosomes Silicone structure &amp; scaffolds Mechanisms that have numerous layers</p>
<p><b>Specific Techniques</b></p> <p>Small particles Arrangements of polymers with pores Particulates of nanoscale</p>
<p><b>Techniques for Emulsified Distribution</b></p> <p>Small-scale formulations Nanoparticles in a liquid state A variety of emulsions Emulsions of nanoscale Emulsions Pickering's</p>
<p><b>Alternative methods of transmission</b></p> <p>Nonlinear cyclohexatriene Benzosomes Hyperbranched polymeric &amp; dendrites Microscopic A crystal</p>
<p><b>Delivering Equipment</b></p> <p>The iontophoresis Cosmetically appliqués</p>

*Table 2: Novel Cosmetic Delivery System*

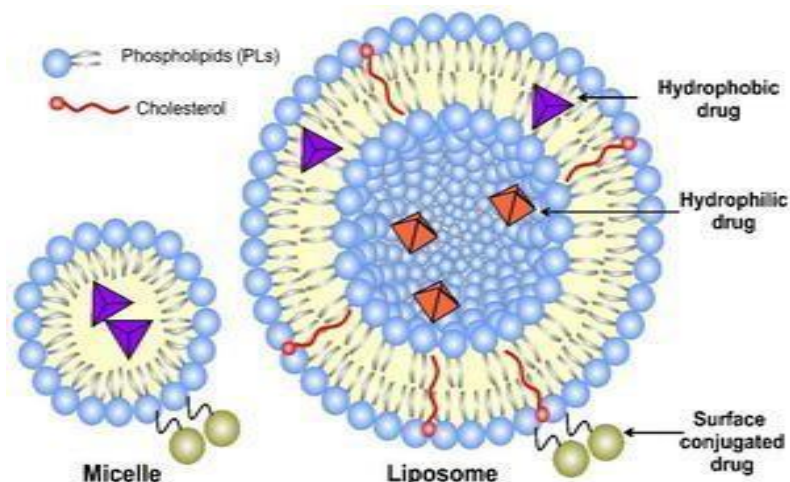
## Advance In Cosmetics Formulation Technology

### Vesicular delivery system

#### Liposomes

As seen in Fig. 1, liposomes are structures made up of with an aquatic center circled by a water-resistant bilayer of lipids layer composed of lipoprotein and phospholipids. Since phosphate lipids are regarded as harmless by consumers in general. compounds, it was possibility of negative consequences is reduced. The repellent a bilayer has a capacity to soak up hydrophobic substances., allowing the liposome has the ability to move particles that are aqueous and slippery. Therefore, Drugs and other liquids in the center are unable to cross the double layer. [35] Developed in the early 1970s as a medicine delivery mechanism, The initial type of Nano-capsules is known as liposomes

as Liposomes are flexible vesicles that are biocompatible, biodegradable, safe, and suitable for encapsulating active substances as well as hydrophobic and hydrophilic chemicals. [36]



**Figure 1: Liposome**

### Neosomes:

Neosomes are biodegradable and relatively harmless vesicles composed of nonionic surfactants that aid accomplish the initial type of Nano-capsules are known as liposomes as particular to the location distribution through directing the medicine from the intended healing location. Although it Has stable and has both hydrophilic and hydrophobic ends, it resembles liposomes. Thus, Lancôme, a product of the L'Oreal corporation, was released in 1987. Amphiphilic and lipophilic medicines are transported by Neosomes. [37]

### Particulate system

#### Micro particulates

Microparticles, which encompass microcapsules and microspheres, are solid polymeric particles with a diameter ranging from 0.1 to 1000 $\mu$ m. A microcapsule is a spherical particle that has a core substance and ranges in size from 50 nm to 2 mm. In a strict sense, microspheres are spherically empty particles. Microparticles are typically utilised in cosmetics to prevent material incompatibilities, lessen active ingredient scent, and shield materials that are vulnerable to oxidation or moisture from the atmosphere. [38]

#### Application of Microcapsule for regulated distribution

Sunblock chemicals like octyl salicylate along with octyl methoxycinnamate can be found in microcapsule form.

Polymers micro-encapsulated into depilatory mixes provide defence versus substances with a interface functional. For instance, SLS, as or sodium lauryl of sulphates is a coloring ingredient product that has glycerin and dihydroxyacetone (DHA) in different microcapsule compartments.

Microcapsules containing encapsulated oils found in washing creams, as benzyl palmitate as a, mineral-derived plant-based oil, and propyl myristate.

Products for skicopherols or other microencapsulated antioxidants to stop lipid peroxidation in the skin.

Polyamide granules are distinguished by their tiny dimensions its limited aggregate diameter dispersion. Utilised to the sense of touch on epidermis adherence Them offer with professional foundation or skin-care goods. [39]

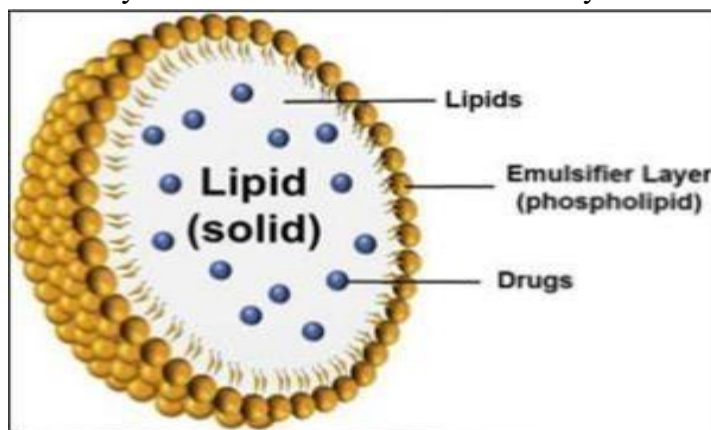
#### Nano particulate system

Nanoparticulate systems, which have a has an average dimension of 0.003–1 $\mu$ m, are submicron colloidal systems that comprise Nano spheres and Nano capsules.

Nano capsules are such Nano sized particles with an internal space and a shell that can hold medication. The difference between Nano spheres and Nano capsules is that the latter is a matrix system, while the former is a reservoir type of framework. In Nano spheres that are when small capsules, the substance that acts may exist introduced using numerous types of designs.<sup>[40]</sup> 2010 saw a rise in the usage of Nano spheres by cosmetics businesses in dermatological items, particularly those aimed at addressing the obvious indications of ageing. In the realm of skin care and cosmetics, Nano sphere technology offers both possible benefits and drawbacks. Companies who sell treatments for dermatological purposes that use spheres argue if the solution have greater successful due to the particles reach known as damaged skin's outer layer and provide therapeutic benefits.<sup>[41]</sup>

### **solid-lipid Nano particles**

Lipids contain aqueous microns atoms. Particles with dimensions ranging between 50 with 1000 nm, made & biosynthetic fat and scattered through water or a surfactant added to a liquid solution. Because of their intrinsic qualities, which include controlled release capabilities, a smaller size that allows for, intimate relationship towards the dermis minimal poisoning, improved pores onto our bodies, e.g., spherical are widely used in the cosmeceuticals industry.



*Figure 2: Solid Lipid Nanoparticles*

The benefits of SLNs and NLCs include stabilizing the active ingredients, achieving the appropriate level of occlusion and subsequently hydrating the skin, extending the product's shelf life, increasing bioavailability, and providing site-specific activity.<sup>[42]</sup>

### **Nano-capsules**

The active component is placed into a cavity in a liquid or solid core of a Nano capsule, which is then sealed with a protective layer made of polymer molecules made any polymer chains, manmade maybe organic. Hydrogels and emerges Provide two applications for Nano capsules. A variety of personal care products are also made using the hydrogel.<sup>[43]</sup>

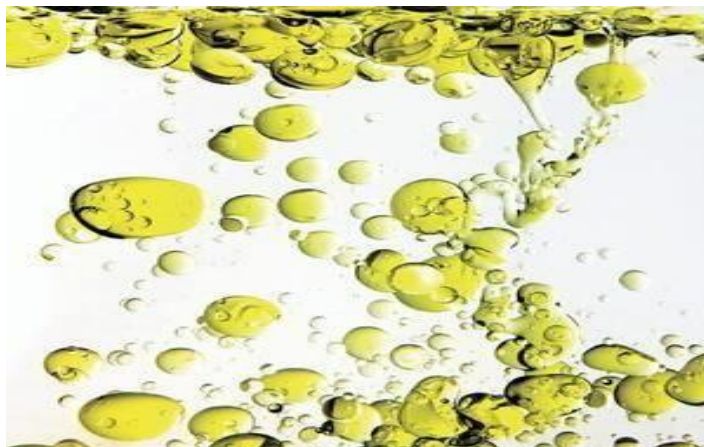


*Figure 3: Nano-Capsule*

## Emulsion Delivery System

### Microemulsion

A surfactant molecule based interfacial coating stabilizes the stability of microemulsions, steady fluid both oil and water fragments which is uniform, translucent, and with droplet diameters between 100 and 1000 Å (10 – 100 nm). Typically, three to four ingredients are combined to make a microemulsion: water, oil, surfactant(s), and co-surfactant. Due to their balanced fatty and hydrophilic character and high superficial sensitivity properties, non-ionic surfactants are often the ones that are selected in order to alter the hydrophilic-lipophilic balance (an HLB) within the solvent to boost mechanical mobility to an ideal level, co-surfactant plays a crucial role in the creation of microemulsions. They work better together than when used alone, for their reasons<sup>[44]</sup>



*Figure 4: Emulsion Droplet*

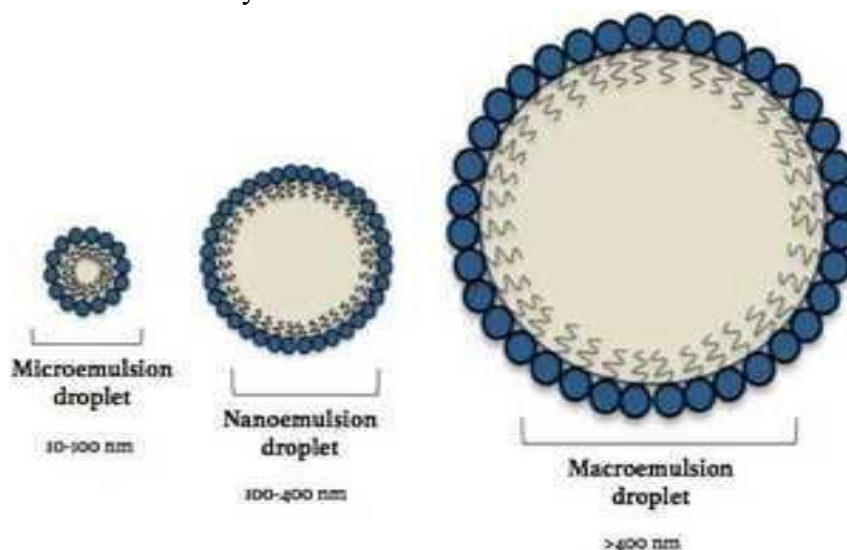
### Uses of Emulsion delivery system

Skin cancer is treated with carotenoids formulated in a Microemulsion. The melanin content of melanocytes is increased by cosmetic microemulsion containing di-decanoyl glycerol, which increases skin pigmentation.

Using vitamin E in a microemulsion improves its moisturizing properties and penetration.

Tri-decylcyclic acid worked better as an anti-aging composition when it was added to a microemulsion.

For photo protective effectiveness, in its micro-emulsions, benzotriazoles, bisorecinyl triazine, plus striazine were recently introduced<sup>[45]</sup>



*Figure 5: Emulsion Delivery*



## Other delivery systems

### Nanocrystals

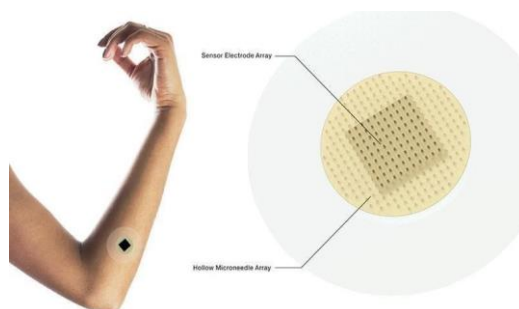
The nanocrystals These clusters, which span across the variety of from 10 to 400 Angstroms. And are composed within hundreds of molecules arranged in a predetermined configuration, are typically used to administer poorly soluble medications. [46] Bioactive substances are generally included in nanocrystals, which also aid in accelerating the rate of dissolution. "Juvedical," created by Juvena in 2000, was the first product on the market to use nanocrystals with rutin as a major component. [47] According to a study, rutin nanocrystals exhibited increased bioactivity above standard rutin glycoside. [48] The solubility and penetration profiles of the anti-pollution agent SymUrban were found to significantly increase in its nanocrystal form in one of the most recent research projects on the substance conducted by Köpke et al. The poorly soluble active chemical in SymUrban was made more skin bioavailable by these nanocrystals, which also seemed to be a good way to distribute the substance. [49]

### Delivery Devices

#### Cosmetic Patches

Cosmetic patches are a clear example of how pharmaceutical technology has influenced cosmetics, albeit not on the same straight forward aesthetic shapes are an instance of distribution frameworks. Using one of it was most widely accepted, successful, and current delivery methods available Nowadays, decorative treatments offer assistance, handy, straightforward, a secure and effective technique on a fashion accessory treatment. A special type of dermal delivery system, cosmetic patches satisfy the bodily demand to obtain essential nutrients, amino compounds with the delta region other components' and enable the transdermal delivery of active substances. [50]

most situations, cosmetic patches can be used for the same purposes as traditional cosmetic treatments, such as treating puffy eyes, creases, getting older, pimples, and dryness associated particular regions, blood vessels as well as shrinking. A cosmetic patch can be categorized in a few different ways. The implementation technique (hydrating, anti-wrinkles), structural components (artificial, universal, plus composite), patches type (a matrix, buffer), and its duration (instantaneously, thirty minutes patched) can all be used to characterize it. Useful beauty covers fall into many different groups, including anti-blemish, pore-cleansing, pus, eye counter, wrinkle prevention, antiwrinkle, and elevating applications. Skin wrinkles they targeted for usage with polymeric transition and incorporated electromagnetic unit in electrical tissue micro-iontophoresis coverings. According to human clinical research, the quantity and depth of wrinkles beneath the eyes were visibly reduced after just one 20-minute application of the patch, and the effects persisted for several hours. The cause of the short-term impact, which was a minor subclinical inflammatory response that led to skin smoothing, is explicable. Increased cell turnover, improved respiration, higher blood flow, and tissue stimulation could have contributed to the longer-term rejuvenating effects. [51]

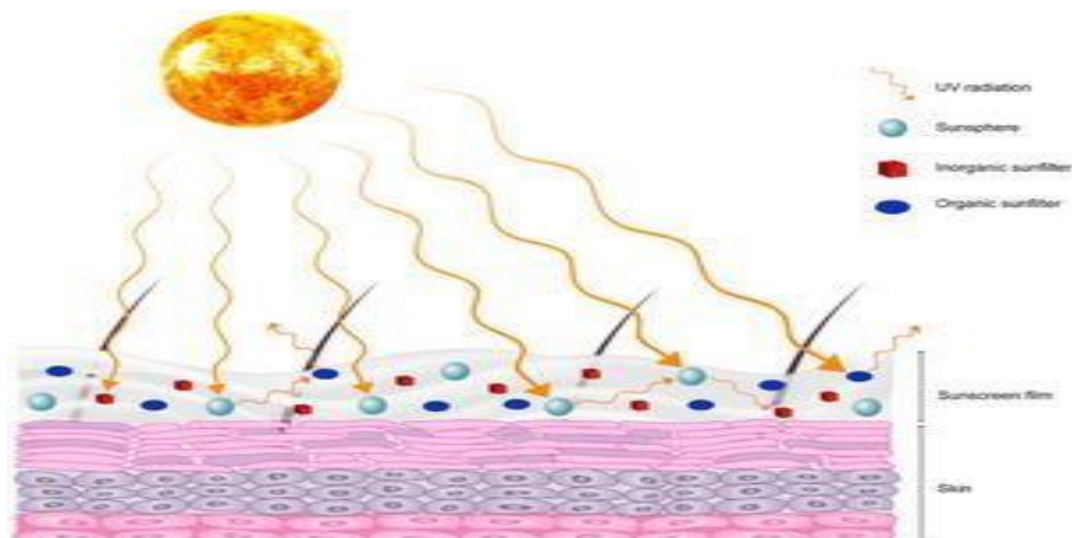


**Figure 6: Cosmetics Patches**

## Nanomaterials in cosmetics & skin care products

### Nanoparticles of sunscreen

ZnO and TiO<sub>2</sub> nanoparticles are transparent when applied topically to the skin. The cosmetic acceptance that larger-particle formulations are unable to deliver is made possible by this transparency. The purpose regarding the investigation sought to assess a new ZnO Nano particulate sunscreen formulation's potential systemic exposure and epidermal penetration. After topical application of the Formulating sun protection with zinc oxide Nano particulate, we're tracked on position of Items of zinc oxide (Zn inside skin cells as well as the entirety zinc level entering via the superficial ridges on situ during a full day. Recent research on the pig leather that has been sunscreen formulations ZnO that is micro fine (average fundamental particle dimension of 80nm) & titanium dioxide (needlelike fragments, 30–60!10 nm within length) pollutants indicates how the piggy cortex was impervious to both kinds of materials. [52]



*Figure 7: Nanoparticle Sunscreen*

### Dendrimers

Dendrimers are well defined, symmetrical, regularly branching structures that resemble trees. A high density of surface functionality is imparted by the branch terminals. It is used in many cosmetic products due to its size and M.W. similar to nail polish and mascara. Due to novel film forming property of it, they are utilised in tanning, hair, skin care and nails. They have anti-acne properties. [52,53]

### Nano gold and Nano-silver

Silver and gold nanoparticles Both Nano gold and Nano silver possess antibacteria and antifungal qualities. Their application in cosmeceutical products is extensive, including face packs, anti-aging creams, and deodorants. They are utilised in face masks and moisturizing creams. [54-55]

### Cubosomes

are separated nanoparticles of a continuous cubic liquid crystalline phase with a significantly higher specific surface area than the parent cubic phase. Additionally, it has a high thermal stability and skin-moisturizing capacity. Twelve [56-57]

### Phytosome

Through the release of a photo reactivating enzyme derived from the marine plant Anacystinidulans, they are utilised in sun care products to shield skin exposed to the sun.

### Transferosomes

They are more efficient and have more elasticity than liposomes. It is a component of wrinkle cream. [58]

Sr. no.	Trade Name	Contents	Name of company	Significance	Reference
1	Revamp	Apresipitan & nanocrystall in	Melanie and Roche	Antiseptic	1
2	For Tricor	Nanofenofibrate & monocrystalline	Melan, Benedict	Antidiabetic	1
3	Decoder	Liposomal opioids	Ended, Eden pharmaceutical	After surgery analgesia	49
4	Fragment	Liposomal Amphetamine	ENSZ	Fungus-related illness	32
5	Abundance	The antibiotic amphotericin B liposomal	Johnson the club, USA, s Gilled	Infection with fungi	49
6	Visionary	Os with pegylated anti-EGF aptamer antibodies	The medical field	Macular desertion correlated with age	_____
7	Tumorbane	Paclitaxel can bind to an amino acid	The Abraxas to biology	In the treatment of cancer	36
8	Cardio cure	Low-dose cisplatin	Zeneus pharmaceuticals	Maternal cancer	49
9	Shield coat	A metallic silver nanoparticle	USA-based Nucrust	Antimicrobial medication	49
10	Immuno guard	Sirolimu in tiny crystals structure	Wyeth,	Suppressive immunology	36

**Table 3:** Marketed Formulation of Nano Material as a Cosmetic

### Herbal Medicinal Plant as Cosmetics

#### Neem

Neem tree bark paste is widely utilised for facilitating rapid healing of scars and injuries. neem, contains a wide range of chemicals that have antispasmodic anti-fungal, while antimicrobial actions. These parts include drugs, flavonoids, and alkaloid-like including its derivatives: [59]

#### *Emblica vulgaris*

Known for its various health advantages, *E. officinalis* is one of the most well-known medications in the typical medical field. In addition to being an anti-oxidant hypoglycemic, antihyperlipidemic, and cancer-fighting, *E. officinalis* also has derma protective and anti-wound-healing activities: [60]

## Herbal cosmetic marketed products

### Bhringraj

An essential ingredient at Calico Natural's hair treatment goods bhringraj is recognized in Veda as a herbal product that is good for hair. It encourages growing out hair, stops losing it and promotes hair growth. <sup>[61]</sup>

### Aloe vera

Textile Pure uses aloe vera jelly if an essential component in his hair good care compositions because of its well-known moisturizing, calming, its beneficial properties.

### Henna

The pigment, referred to for tattoos, is a popular component in hair treatments that is prized for its colouring or drying abilities. In the concoctions of Silk Herbal. <sup>[62]</sup>

## CONCLUSION

In conclusion, this review underscores the dynamic nature of the cosmetics and skincare. Industry, driven by scientific advancements and consumer demands for products that are Both effective and safe. As the field continues to evolve, understanding these developments is crucial for stakeholders in beauty and healthcare sectors in conclusion, contemporary advancements in cosmetics and skincare demonstrate a rising emphasis on sustainability, inclusivity, and improved formulas. New benchmarks in the business are being set by innovations including customised skincare regimens, biocompatible chemicals, and environmentally friendly packaging. In order to appeal to a more knowledgeable customer base, brands are putting more and more emphasis on ethics and transparency. We can anticipate even more technological advances that put environmental responsibility and skin health first, changing the face of beauty in the future.

## References:

1. L.C. Parish, J.T. Crissey, *Cosmetics A Historical Review and Clinics in Dermatology*, Journal of Clinical Dermatology,1988:6(3): 1-6.
2. Ian Watts, *The Pigments from Pinnacle Point Cave*13B Western Cape, Journal of Human Evolution,2010: 59(3):392–411.
3. S.Akins, A.R Adkins, *Handbook to Life in Ancient Greece*,First ed., Oxford University London,1998.
4. B.Burlando, L.Verotta, L.Cornara, E.Bottini Massa, *Herbal Principles in Cosmetic*,First ed., Boca Raton,2010,pp.89-93.
5. D. F.Williams, W.H.Schmitt ,*Chemistry and Technology of the Cosmetics and Toiletries Industry*, Third ed., New York, 1996.
6. Singhal Mukul, Khanna Ndustr, Nasa Atul, *Cosmeceuticals for the Skin*, Asian Journal Pharmaceutical and Clinical Research,2011: 4(2):1-6.
7. Introduction of Cosmetics <https://en.m.wikipedia.org/wiki/Cosmetics>(accessed 29.09.24)
8. C.B. Rubin, B. Brod, *Natural Does Not Mean Safe the Dirt on Clean Beauty Products* Dermatology, Journal of Dermatology,2019:155(12):1344-1345.
9. K. Jenkins, J. Kiviat , D.Hamman,*Concomitant Phytophotodermatitis and Allergic Contact Dermatitis Due to Natural and Vegan*, Journal of Cosmetics Dermatitis,2020:31(1): 258-263.
10. S.E. Freiberg, J. Sabit, *Cometic Chemistry*,Journal of Nuclear Chemistry,2011:41(1):55-71.
11. A.S. Ribeiro, M. Estanqueiro , M.B. Oliveira , *Lobo Main Benefits and Applicability of Plant Extracts in Skin Care Products*,Journal of Cosmetics, (2015):2(2):45-65.

12. K. Heinrich, U. Heinrich, H. Tronnier, Influence of Different Cosmetic Formulations on the Human Skin Barrier, *Journal of Skin Pharmacology Physiology*,2014;27(4):141–142.
13. Tamanna Naznin, M. Moniruzzaman Monir, Mohammad Lutfar Rahman, Association of Serum Iron Profile in Female Patients with Melasma, *International Journal of Reserch in Dermatology*, 2024;10(5):231-237.
14. P.L. Gupta,M.Rajput, T.Trivedi, U. Sanghvi, Eminence of Microbial Products in Cosmetic Industry, *National Journal of Product Bioprospect*, 2019;9(7): 267– 278.
15. A. Alves , E. Sousa ,A. Kijjoa , M. Pinto, Marine Derived Compounds with Potential Uses as Cosmeceutical and Nutricosmetics, *Journal of Molecules*, 2020: 25(11):25-36.
16. L.Manniche, W.Forman, Sacred Luxuries Handbook of Fragrance, Aromatherapy, and Cosmetics in Ancient, Second ed.,Egypt,1999,pp.1220.
17. A.Lucas, Cosmetics Perfumes and Incense in Ancient Egypt, the *Journal of Egyptian Archaeology*, 1930;16(1): 41-53.
18. Marcia Foster Mesko, Diego La Rosa Novo, Vanize Caldeira Costa, Toxic and Potentially Toxic Elements Determination in Cosmetics Used for Makeup, *Journal of Preproof*,2019;26(1):10-58.
19. B.Burlando, L.Verotta , L.Cornora, E.Bottini-Massa ,Herbal Principles in Cosmetics,First ed.,Florida, 2010.
20. S.V.Reshetnikov, S.P.Wasser ,I. Duckman , K.Tsukor , Medicinal Value of the Genus Tremella ,*International Journal of Medicinal Mushrooms*,2000;2(3): 345-367.
21. P.G. Naiditch, On Pronouncing the Names of Certain British Classical Scholars, *The Classical Journal*,1993;89(1): 55–59.
22. Richard Hornsey ,The Modern Way to Loveliness Middle Class Cosmetics and Chain Store Beauty Culture in Mid-Twentieth-Century, First ed., Britain, 2019,pp.23-29.
23. J.Pallingston, Lipstick, A Celebration of the World Favourite Cosmetic, Third ed., Britain,1999.
24. Marvin.S Balsam, Edward Sagarin, Cosmetics Science and Technology, Second ed., London,1972.
25. Amol V. Pore, Sanjay K. Bais, A.D Lotake,Cosmetic Science,*International Journal of Advanced Research in Science*, 2023;3(1):1-4.
26. Ensuring Quality in Cosmetics Good the Beauty, <https://www.nutraceuticalsworld.com>(accessed 29.09.24).
27. W.A. Poucher, H. Butler, Microbiological Control of Cosmetics, Poachers, Perfumes Cosmetics and Soaps, Eighth ed., England,1974.
28. W.E.Umbach, Preparations for Cleansing and Caring for Blemished Skin in Cosmetics and Toiletries Development Production and Use, Third ed., New York, 1991.
29. A.R.Baran , H.I.Maibach , Cosmetics and Cosmetic Preparations Textbook of Dermatology, Fifth ed., London, 2009.
30. N.Halla, I.P. Fernades, S.A. Heleno,Cosmetics Preservation A Review on Present Strategies, *Journals of Molecules Open Access* ,2018;23(7):2-41.
31. M. Surya,S. Gunasekaran, A Review on Recent Scenario of Cosmetics, *International Journal of Pharmaceutical Sciences Review and Research*,2021;68(1):190-197.
32. Irene Dini, S.Lanier ,Nutricosmetics a Brief Overview Phototherapy Research ,*Journal of Royal Society of Medicine*, 2019;33(12):3054-3063.

33. Rakesh Bharatia, Nidhi Gupta, Preeti Upadhyay, Shivam Kumar Tiwari, A Review on Cosmeceuticals, International Journal of Pharmaceutical Professional Research ,2024 :15 (1):128-141.
34. J.Mufti, D.Chernigov, R.Macchio, New Technologies in Topical Delivery Systems, Fourth ed., United State,2010.
35. S.Ravindranath Misal, R.Vishawas. Potphode, R.Vijay Mahajan, Review on New Approaches in Self Micro Emulsifying Drug Delivery System, Research Journal of Pharmacy and Technology ,2017:10(4): 1215-1224.
36. Jayamanti Pandit, Minakshi Garg, Miconazole Nitrate Bearing Ultraflexible Liposomes the Treatment of Fungal Infection, Journal of Liposome Research,2014:54(3):149-152.
37. H. Schreier, J. Bouwstra, Liposomes and Niosomes as Topical Drug Carriers Dermal and Transdermal Drug Delivery Control, Journal of Controlled Release, 1994:30(1):1-15.
38. N.V. Majesty, R.Kumar ,Nano and Micro Particles as Controlled Drug Delivery Devices,Journal Pharmacy Pharmaceutical Science, 2000:3(2): 234-358.
39. Shailesh L.Patwekar, K.Mahesh, Baramade,Controlled Release Approach to Novel Drug Delivery, International Journal of Pharmacy and Pharmaceutical Science,2012:4(3):757-763.
40. S.S.Guterres, M.P.Alves, A.R.Pohlmann, Polymeric Nanoparticles, Nanospheres and Nano Capsules, for Cutaneous Applications, Journal of National Library of Medicine,2007:2(2):147-157.
41. Madhulika Pradhan, Amit Alexander,Manju Rawat Singh, Understanding the Prospective of Nano Formulations Towards the Treatment of Psoriasis, Journal of Research in Applied Sciences and Biotechnology,2018:10(7) :447-463.
42. J. Maignan, S. Genard,Nanospheres in Skin Care Use of Hyper Branched Polymers and Dendrimers Comprising a Particular Group as Film Forming Agent, Journal of Applied System Innovation,2018:13(4):2011.
43. S. Patwekar, S. Gattani, R. Giri, A. Bade, B. Sangewar, V. Raut, Review on Nanoparticles Used in Cosmetic and Dermal Product,World Journal of Pharmacy and Pharmaceutical Science ,2014:14(3): 1407-1421.
44. S.Gorai,J.H. Johnston,The Beats of Natural Sciences ,Quest Multidisciplinary Journal of Humanities and Social Sciences,2014:1( 1):47-61.
45. S.Talegaonkar, A.Azeem , J.Farhan, Ahmad, R.K.Khar , S.A.Pathan , Z.I. Khan , A Novel Approach to Enhanced Drug Delivery Recent Drug Delivery Formula, Journal of Applied Microbiology,2008:2(3): 238-257.
46. N. Garti, I. Amar-Yuli, D. Libster, A.Aserin, Scope of Nanotechnology in Cosmetics Dermatology and Skin Care Products, Journal of Medical and Chemical Sciences,2009: 13(1):221-279.
47. C.M Keck,R.H Müller, Drug Nanocrystals of Poorly Soluble Drugs Produced by High Pressure Homogenization , Journal of Pharmaceutical and Biopharmaceutical ,2006: 62(3):16-21.
48. J.Sakamoto, A. Annapragada, P. Decuzzi, M. Ferrari, Antibiological Barrier Nano Vector Technology for Cancer Applications, Journal of National Institute of Health,2007:158( 4): 359–369.
49. R.Petersen, U. Anand,Nanocrystals for Use in Topical Cosmetic Formulations and Method of Production ,International Journal of Molecular Sciences,2018:19(6):15-78.

50. D. Kopke, Sung Min Pyo, Symurban Nanocrystals for Advanced Anti-Pollution Skincare Cosmetics, *Journal of Microbiological Hellenica*, 2020: 7(1):17-23.
51. S.A. Fotinos, A.O. Barel, M. Paye, H.I. Maibach, *Handbook of Cosmetic Science and Technology*, Second ed., New York, 2001, pp 233.
52. D. Tamarkin, S. D. Mandawgade, Enhancing Cosmetic Efficacy by Orders of Magnitude Using Thin and Flexible Microelectronic Patches Health Beauty, *International Journal of Cosmetic Science*, 2003:30(1):19-33.
53. T. Arif, N. Nisa, S.S. Amin, S. Shoib, R. Mushtaq, M.R. Shawl, Scope of Nanotechnology in Cosmetics Dermatology and Skin Care Products, *Journal of Medicinal and Chemical Sciences*, 2015: 5(1):78-99.
54. J. Maignan, S. Eliana, B. Souto, Tiago E. Coutinho, Nanomaterials for Skin Delivery of Cosmeceuticals and Pharmaceuticals, *Journal of Applied Sciences*, 2018:10(5):33-90.
55. J. Patel, K. Garala, B. Basu, M. Raval, A. Dharamsi, Scope of Nanotechnology in Cosmetics Dermatology and Skin Care Products, *Journal of Medicinal and Chemical Sciences*, 2011:8(1): 135-143.
56. J.H. Johnston, K.A. Burrige, F.M. Kelly, Advanced Materials Particles Films and Composites, *Journal of Medical and Chemical Science*, 2010:17(1): 792-799.
57. Xiaoying Wang, Guocheng Han, Zuguang Shen, Runcang Sun, Fabrication Property and Application of Lignin-Based Nanocomposites, *Journal of Advanced Structured Materials Eco-Friendly Polymer Nanocomposites*, 2015:47(1):73-99.
58. N. Garti, I. Amar-Yuli, D. Libster, A. Aserin, Highlights in Colloid Science, *Journal of Medical and Chemical Science*, 2009:13(1):279-283.
59. E. Bombardelli, A. Cristoni, P. Morazzoni, Fitoterapia, Development and Evaluation of Phosphatidylcholine Complexes of Arbutin as Skin Luation, *Journal of Pharmaceutical Science and Research*, 2021:12(2):917-927.
60. S.B. Nagansurkar, S.K. Bais, A.V. Pore, S.M. Kazi, A.B. Lawate, Formulation and Evolution of Herbal Mouth Wash Containing Natural Extracts of Tulasi Neem Turmeric Clove Liquorice and Peppermint, *International Journal of Pharmacy and Herbal Technology*, 2023:1(2) 63-71.
61. Nida Mulla, S. K. Bais, Pratiksha Y. Shiraskar, Review on Herbal Toothpaste for Antibacterial Activity, *World Journal of Pharmacy and Pharmaceutical Sciences*, 2023:12(3):162-179.
62. S.D. Sonawane, S. K. Bais, Rutuja Dhandore, Quality Control and Quality Assurance in Pharmaceuticals, *International Journal of Advanced Research in Science*, 2023:3(1):997-1022.