

THE USE OF NANOMATERIALS IN COSMETIC PRODUCTS ACCORDING TO THE SHARIA PERSPECTIVE

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ABSTRACT

Nanocosmetics is a term that refers to cosmetic products that use nanomaterials or nanotechnology to enhance their performance and quality. However, some nanocosmetic products may contain ingredients that are questionable from an Islamic perspective, such as animal extracts and alcohol. This study aimed to understand the concept of nanocosmetics according to a scientific view and to examine the Islamic ruling on using such products, especially those that involve cosmetic treatments like powder embroidery. A qualitative research methodology was employed, using various sources from websites, books, journals, and articles. The results and discussion section covered the definitions of nanomaterial, cosmetic, and nanocosmetic, as well as the Shariah perspective on animal-based and alcohol-based cosmetic products. The study also analyzed the Shariah perspective on powder embroidery, which is a cosmetic treatment that uses nanomaterials to create semi-permanent makeup. The study found that powder embroidery is permissible if the treatment is done for medical reasons, such as to cover scars or skin diseases, and not to change one's appearance. However, powder embroidery is prohibited if the treatment poses more harm than benefit to the consumer, such as causing infections, allergies, or pain. The study concluded that nanocosmetic products and treatments should be used with caution and awareness and that consumers should seek reliable and authentic information from Islamic scholars and experts before using them.

Introduction

The world of cosmetics has always been enigmatic for consumers. Accordingly, innovation-based products keep attracting them, with nanocosmetics being one such recent instance. Nanotechnology in the cosmetic industry involves making products with nanomaterials for myriad superficial and epidermal benefits. Sunscreens, anti-aging creams, toothpaste, hair growth promoters, and mineral cosmetics are some of the cosmetic systems where nanomaterials have brought in amazingly wonderful products. Cosmetic companies are now spending heavily on research and development in nanocosmetics.

Nanomaterials are materials that have at least one dimension in the range of 1 to 100 nanometers. They exhibit novel physical, chemical, and biological properties that are different from those of bulk materials. Nanomaterials have been widely used in various fields, such as electronics, medicine, energy, and the environment. One of the emerging applications of nanomaterials is in cosmetic products, which are substances or preparations intended to be placed in contact with the external parts of the human body for the purpose of cleaning, beautifying, or altering its appearance. Nanomaterials can enhance the performance, stability, and safety of cosmetic products by improving their delivery, penetration, absorption, and biocompatibility. However, nanomaterials also pose potential risks to human health and the environment due to their small size, high surface area, and reactivity. Therefore, the use of nanomaterials in cosmetic products requires careful legal assessment.

Next, cosmetic products are products used to treat or decorate skin, hair, nails, or other parts of the body. Cosmetic products can be distinguished into two groups, namely preventive cosmetics and decorative cosmetics. Preventive cosmetics are cosmetic products that aim to maintain the health and hygiene of the skin, hair, or other parts of the body, such as cleansers, moisturizers, sunscreens, shampoos, conditioners, etc. Preventive cosmetics are usually used daily or regularly, depending on the need and type of skin or hair. Meanwhile, decorative cosmetics are cosmetic products intended to beautify or make the face or other parts of the body, such as powder, lipstick, eyeshadow, blush, mascara, etc. Decorative cosmetics are usually used according to the user's style or likeness and can be varied according to the atmosphere or event. At last, cosmetic products are not only influenced by scientific and technological factors but also by social, cultural, and religious factors. In particular, for Muslim consumers, cosmetic products must comply with the Islamic law, or Shariah, which is derived from the Quran and the Sunnah of Prophet Muhammad PBUH. Cosmetic products must not contain any ingredients, chemicals, or substances that are prohibited by Sharia, such as pork, alcohol, blood, or dead animals.

One of the recent trends in cosmetic treatments is powder embroidery, which is a semi-permanent makeup technique that creates a natural-looking look by depositing pigment into the upper layer of the skin using a machine. Powder embroidery can last for up to two years, depending on the skin type, lifestyle, and aftercare of the customer. It can enhance the appearance and confidence of customers who have sparse, thin, or uneven skin. However, powder embroidery treatment also involves some risks, such as infection, allergic reactions, scarring, and pigment migration. Therefore, customers who want to undergo powder embroidery should consult a qualified and experienced practitioner and follow the proper pre-treatment and post-treatment instructions. This cosmetic treatment may contain or involve prohibited ingredients or substances, such as gelatine, glycerine, or alcohol.

Therefore, this research aims to explore the use of nanomaterials in cosmetic products from a sharia perspective by reviewing the sources, types, functions, and effects of nanomaterials in cosmetics, as well as the criteria, standards, and methods for determining their halal status. The research also discusses some of Sharia's views and the Scientific's views regarding the Islamic law (*hukm*) of using powder embroidery, which is one of the cosmetic treatments that use nanomaterials and nanotechnology in treatment procedures.

Literature Review

Research conducted by Lucia Salvioni, et al., (2021) in the article "The Emerging Role of Nanotechnology in Skincare" discussed the effects of the use of nanomaterials in advanced cosmetic formulations, emphasizing the benefits offered by the use of nanotechnology in next-generation products despite prejudices against the application of nanotechnology in cosmetic products, which is skincare. This article also includes the interpretation of basic data on general information reported on product labels already

available on the market, information that often lacks details about the specific components of the product, especially when nanomaterials are used. The focus of this article is primarily on skincare, as it is believed to be a cosmetic market sector where the effects of nanotechnology are paramount. To date, nanotechnology has been shown to improve cosmetic performance in several ways: 1) increase the efficiency of entrapment and dermal penetration of active substances; 2) regulate drug release; 3) increase physical stability; 4) increase humidity; and 5) provide better UV protection. Particular attention is paid to the effect of nanoparticles contained in semi-solid formulations on the problem of skin penetration. Given the concerns raised about the toxicity of nanoparticles, a section has been dedicated to providing detailed examples of nanocosmetic products whose safety has been scrutinized. However, this article only focused on the nanomaterials contained in skincare without discussing other cosmetic products such as haircare, bodycare, perfume, and lipcare. The focus of this article is only on scientific views and experimentation results, not discussing views from other aspects such as environmental, social, and religious.

Linda M. Katz, et al., (2015), in their article “Nanotechnology in Cosmetics”, provide a comprehensive and informative overview of nanotechnology in cosmetics as well as the use of nanomaterials in cosmetic products, including definition, characterization, application, security, and regulation. This article describes the different types of nanomaterials used in cosmetics, such as metal nanoparticles, carbon, silica, and polymers, as well as the benefits and challenges associated with their use. This article also reviewed studies that evaluated the potential of nanomaterial toxicity to the skin and other organs, as well as methods for measuring the display and absorption of nanomaterials. This article is largely descriptive, does not present specific and detailed research results, and also does not discuss in depth the ethical, social, and environmental aspects associated with nanotechnology in cosmetics, such as its impact on human rights, justice, and sustainability.

In the research of Stefania Gottardo et al., (2021), in the article “Towards Safe and Sustainable Innovation in Nanotechnology: State-of-Play for Smart Nanomaterials,” discuss the challenges and opportunities to develop a secure and sustainable smart nanomaterial. Smart nanomaterials are nanomaterials that can respond to external stimuli, such as changes in temperature, pH, light, or chemical environment. Smart nanomaterials can be found in food, food packaging, cosmetics, and agriculture. This article suggests that intelligent nanomaterials and the products they support may pose new challenges for safety and sustainability assessments because of their complexity and dynamic behavior.

Based on the article “Is the European Regulatory Framework Sufficient to Assure the Safety of Citizens Using Health Products Containing Nanomaterials?” by Umberto M. Musazzi et al., (2017), it discussed the European regulatory framework related to the use of nanomaterials in health products, such as cosmetics, medical devices, and medicinal products. This article examines how nanomaterials can provide benefits and risks to human health and the environment and proposes a number of measures to improve safety and transparency in the control and use of nanomaterials. This article also refers to some examples of health products containing nanomaterials, such as nanoemulsions, iron nanoparticles, and silver nanoparticles, and explains how they work and what side effects may arise.

Next, in the article “Chapter 3: Nanocosmetics: Performance Enhancement and Safety Assurance,” prepared by Sanju Nanda et al., (2016), related to the use of nanotechnology in cosmetics, referred to as nanocosmetics, Nanocosmetics are cosmetic products that contain nano-sized ingredients, which can improve product performance and safety. This article explains the concept and definition of nanocosmetics, as well as its differences from conventional cosmetics. The same applies to the types and applications of nanocosmetics, such as sunscreen, moisturizer, anti-aging and hair dye, etc. In this article, it also discusses the classification of nanocosmetics based on formulation technology, such as nanoparticles, nanocapsules, nanoliposomes and nanosuspensions.; popular nanocosmetic categories, such as nanosilver, nanogold, nanoclay and nanocellulose. In addition, there are also nanocosmetic benefits and challenges, such as increased efficacy, stability, penetration, and bioavailability, as well as issues related to toxicity, regulation, and ethics. Unfortunately, this article does not explain the cosmetic treatments that apply nanocosmetics, in particular the cosmetic treatments that are trending. This article refers only to the physical and chemical properties of nanomaterials, and the social and economic aspects are ignored.

On top of that, research conducted by Ulrike Bernauer, et al., (2021) in the article “The SCCS Scientific Advice on the Safety of Nanomaterials in Cosmetics” (as clearly stated in the article’s title) discusses the scientific advice given by the Scientific Committee on Consumer Safety (SCCS) on the safety of nanomaterials in cosmetics. This article lists nanomaterials that have been evaluated by SCCS, including those with positive, negative, or incomplete opinions., as well as the criteria and methods used by SCCS to determine whether a substance is nanomaterial or not and to evaluate the safety of nanomaterials in cosmetics. Furthermore, this article emphasizes the importance of adequate and quality data for nanomaterial characterization, toxicology testing, and exposure evaluation. This article discusses the current challenges and issues faced by SCCS in nanomaterial evaluation, such as lack of data, terminological inconsistencies, and the need to take into account synergistic and cumulative effects. However, this article does not provide an in-depth explanation of the mechanisms of action and the biological effects of nanomaterials in cosmetics, which may be important for understanding their risks and benefits. In addition, it also does not touch on the consumer's perception and acceptance of nanomaterials in cosmetics, which may affect the demand for and consumption of the product. Finally, this article does not present any recommendations to improve the assessment of nanomaterial safety in cosmetics or to encourage further research and development in this area.

According to the research by Muhammad Ikhlas Rosele et al., (2021), in the article “Analysis on Powder Embroidery Treatment (BB Glow) from the Islamic Law Perspectives,” it clearly discussed powder embroidered treatment (BB Glow), which is a beauty method that uses embroidery technique to insert colored powder into the skin. This treatment is said to give the effect of radiant, smooth, and even skin. However, this treatment also raises some questions from the perspective of Islamic law. Among the questions that arise are related to the treatment process and the extent to which it complies with Islamic methods in terms of the cleanliness of the materials used, the impact on worship, as well as the ruling of changing the creation of Allah SWT. The results showed that powder embroidery treatment is illegal because it involves impurities (*najis*), covering the pores of the skin, blocking ablution and bathing, as well as contravening human nature. But this article does not provide sufficient background and context about powder embroidery treatment and the issues associated with it. This article does not present a theoretical framework or concept used to analyze the law of powder embroidery treatment. Furthermore, this article does not discuss the implications, challenges, and recommendations for practitioners and users of powder embroidery treatment.

Then, in the article “The Treatment of Foundation Embroidery from an Islamic Perspective” by Iffatul Afnan Muhamad Nasir & Irwan Mohd Subri (2022), they researched the procedure and classification of foundation embroidery treatments, which are one of the most popular facial treatments nowadays, especially in Malaysia. In addition, this article also evaluates the laws governing this treatment from a sharia perspective and the health risks associated with foundation embroidery. The results of this research show that health organizations and Islamic law prohibit foundation embroidery treatment because it presents more harm and risk to consumers, even if the user's intention is good. Studies by scientists and skin experts also prove it. However, this article does not provide operational definitions for important terms such as foundation embroidery and facials. This can create confusion and misinterpretation among readers who are not familiar with these terms. Most importantly, this article does not elaborate on how this foundation embroidery treatment works or the ingredients used in it.

Last but not least, research conducted by Tina Alster and Paul Graham (2017) in the article “Microneedling: A Review and Practical Guide” commented on the use of microneedling in dermatology and provided practical guidance for its implementation in clinical practice. Microneedling is a relatively new treatment method in dermatology and is said to have a wide range of applications, including skin recovery, acne scars, wrinkles, surgical scarring, skin discoloration, large pores, and transdermal drug delivery. Microneedling produces significant clinical improvement in scars and wrinkles with rapid recovery and limited side effects. Microneedling is also a valuable alternative to more invasive procedures such as laser skin resurfacing and deep chemical peeling. This article also provides recommendations for pre-treatment, intraoperative techniques and treatment endpoints, and post-treatment considerations. However, this article does not critically examine the advantages and disadvantages of microneedling compared to other treatment methods available. The researchers only emphasized the benefits of microneedling and did not touch on the risks, side effects, costs, or need for post-treatment care. This can give rise to a disproportionate and non-objective perception of microneedling. In addition, this article does

not take into account individual variations in responses to microneedling. Researchers assume that microneedling is suitable for all skin types and all skin problems, but this may not be true. Microneedling may have different effects on different skins, depending on factors such as skin thickness, skin sensitivity, skin type, and skin condition.

Methodology

This research used a qualitative research methodology, which was suitable and feasible for the study. Qualitative research involves collecting, obtaining, and analyzing data that is not numerical to better understand concepts, opinions, or experiences. It can also help to understand and overview the problem or develop fresh and new research ideas. The qualitative research method is commonly used in anthropology, sociology, education, health sciences, history, and others (Pritha Bhandari, 2020). For this research paper, the researcher aimed to analyze the use of nanomaterials in cosmetic products according to the sharia perspective. Therefore, the best way to answer the research question was to gather qualitative data related to this issue.

Apart from that, this research paper focused on the text analysis types under the qualitative methods. Text analysis is the process of extracting high-quality information from texts and involves new and previous data from several written resources that include websites, books, emails, reviews, journals, and articles using the Internet (Marti Hearst, 2003). In other words, this type of research methodology works to describe and understand the content, structure, and functions of text-based messages and data obtained via the Internet. Subsequently, this research employs both primary and secondary sources.

The researcher conducted research about the use of nanomaterials in cosmetic products according to the sharia perspective. The scope of the study will focus on nanomaterials and cosmetic products, contemporary cosmetics according to the Sharia perspective, and nanomaterials and nanotechnology in cosmetic treatment (powder embroidery). The researcher will highlight only a few sections of each issue, such as the introduction to the issue, general background, impact, and explanation behind the issue.

Results and Discussion

Nanomaterial and Cosmetic Product

First of all, nanoparticles are nano-objects that have three nano-sized external dimensions (Sridianti, 2023). They are materials synthesized to form nanomaterials. Meanwhile, a nanomaterial is a very small material that has a size on the nanometre scale, which is between 1 and 100 nanometers (n.a., 2021), so nanomaterials can have an internal or externally nano-dimensional structure. Since the size of the nanomaterial is very small, nanometer units (nm) are used, which is a very small unit of measurement, which is about a billion meters (n.a., 2023) In short, nanoparticles are a subset of nanomaterials, meaning that all nanoparticles are nanomaterials, but not all nanomaterials are nanoparticles. One way to understand the difference is to think of nanoparticles as the smallest and simplest units of a material, while nanomaterials can have more complex structures and properties. Next, knowledge that studies and transforms materials at the nano level is known as nanotechnology. Nanotechnology can be used for various industrial, agricultural, medical, and cosmetic purposes. Nanotechnology has a broad interpretation, among them:

1. Niemeyer (2002) Nanotechnology is the method of creating materials or structures with designed features in the size range of 1 to 100nm.
2. Royal Society (1994) Nanotechnology is the study of phenomena and manipulation of materials at atomic, molecular, and macromolecular scales, where properties differ significantly from those at a larger scale.
3. (U.S. Environmental Protection Agency, 2007) Nanotechnology is the creation and use of structures, devices, and systems that have novel properties and functions because of their small size.
4. (U.S. National Nanotechnology Initiative, n.d.) Nanotechnology is the understanding and control of matter at dimensions between approximately 1 and 100 nanometers, where unique phenomena enable novel applications. Encompassing nanoscale science, engineering, and technology,

nanotechnology involves imaging, measuring, modeling, and manipulating matter at this length scale.

Research has found that nanomaterials fall into the microscopic category, which means they are very small materials that cannot be seen or observed by the naked eye, so they require the help of magnifying optical devices such as light microscopes and electron microscopes. The dimensions of microscopic materials can be measured using micrometer and nanometer units. Meanwhile, the term macroscopic refers to a large material that can be seen with the naked eye without the help of a magnifying optical device. The dimensions of macroscopic materials can be measured in millimeter and centimeter units. The terms macroscopic and microscopic are used to categorize materials based on two different scales, which are the size of the material and its visibility (Charles Brown, 2023).

The size of a material affects its physical and chemical properties, even if it comes from the same source or origin. If the size and measurement of the material are different, then the physical and chemical properties of the material are also different. Nanomaterials with a particle size range in the nanoscale (1–100 nanometers) may exhibit distinctive characteristics compared to conventional (non-nano) forms of the same materials (Ulrike Bernauer et al., 2021). At this stage, the material can have different characteristics when compared with larger materials of the same mass, such as color, strength, and conductivity. For example, macroscopic gold is gold that can be seen with the naked eye without the need for the help of a magnifying glass device, usually macroscopic gold in the form of granules, fragments, or gold fronds. This is different from microscopic gold (nano gold), which can only be seen with the help of a magnifying optic device, as mentioned earlier. Macroscopic gold has a size of over 100 micrometers, while microscopic gold has a size of less than 100 micrometers (Rahma, 2019). Microscopic gold can be further divided into fine gold (18–93 micrometers), submicroscopic gold (1–18 micrometers), and invisible gold (<1 micrometer) (Fеды Yurniadi, 2021).

Moreover, nanomaterials can exist naturally, be artificially made, or be formed by accident. Nanomaterials have different properties than macro-scale materials since they are on the nanoscale. Nanomaterials can show properties such as transparency, conductivity, strength, or reactivity that are not found in macro-scale materials. Nanomaterials can also interact with biological systems in different ways than macro-scale materials, which can lead to opportunities and challenges in the fields of cosmetics, medicine, and agriculture. Subsequently, nanomaterials can be categorized into two broad classes, namely organic nanoparticles and inorganic nanoparticles. Organic nanoparticles are usually made of natural or synthetic materials, while inorganic nanoparticles consist of metals or metal oxides. Organic nanoparticles and inorganic nanoparticles in cosmetic products have different functions. In general, organic nanoparticles are used to transport active ingredients to deeper layers of the skin, whereas inorganic nanoparticles are used to protect the skin from UV rays and bacteria (antimicrobial). Organic nanoparticles are divided into three types: lipid-derived nanoparticles, surfactant-derived nanoparticles, polymeric nanoparticles, and nanocrystals. Among the inorganic nanoparticles are carbon-based nanoparticles (fullerene, nanodiamond, and nanotube), gold nanoparticles, silver nanoparticles, titanium oxide and zinc oxide nanoparticles, silica nanoparticles, and aluminum oxide nanoparticles.

Additionally, silver nanoparticles and gold nanoparticles are categorized as inorganic nanoparticles because they are made of metal elements that do not contain carbon. However, in cosmetic products, silver nanoparticles and gold nanoparticles can be considered organic nanoparticles because they are synthesized using organic ingredients, such as sodium citrate, which are organic acids found in fruits. In addition, silver nanoparticles and gold nanoparticles can interact with organic molecules, such as proteins, lipids, or DNA, that are present in the skin. Therefore, silver nanoparticles and gold nanoparticles can be included in the organic category of nanoparticles in cosmetic products, although they technically include inorganic nanoparticles. Overall, this is just an overview of the most popular nanomaterials applied in cosmetics.

To start with, cosmetics are one of the healthcare products. They can be divided into several categories or types, such as skin care products, hair care products, eye care products, body care products, fragrance products, and many more. In short, cosmetic products include a wide range of products, mainly designed for external use and intended to cleanse, perfume, change the appearance of, correct odors emanating from, or more generally keep in good condition the areas of the body to which they are applied (European

Commission, 2015). The Ministry of Health Malaysia (2019) also describes cosmetic products as ingredients or preparations used for the purpose of caring for or changing the appearance of external parts of the human body, such as skin, hair, nails, lips, teeth, eyes, or genital organs. In addition, cosmetic products can also contain ingredients that cleanse, fragrance, remove body odor, protect, or maintain the good condition of the skin or hair. Furthermore, the products that are used on the epidermis are specifically denominated skincare products, and the effectiveness of skincare products depends on the types of ingredients and the technology used to prepare them (Salvioni et al., 2021).

In addition, the use of cosmetic products has its own pros and cons. However, consumers need to be smart when making choices. In general, there are three pros and three cons that researchers can point out; however, it is worth noting that the pros and cons of using cosmetic products are subjective in nature and differ in various aspects. So, among the benefits of cosmetic products are that they can increase self-confidence, provide protection, and provide additional benefits for the skin. Firstly, cosmetic products can increase self-confidence by highlighting advantages or disguising flaws on the face. By using cosmetic products, we can adjust the look of our face to our liking, style, or mood. Cosmetic products can also help us to cover stains, acne, scars, or wrinkles that may interfere with our appearance. That way, we can feel more confident and comfortable with ourselves. Secondly, cosmetic products can provide protection from sunlight, pollution, or other external factors that can damage the skin. Some cosmetic products, such as foundation, powder, or lipstick, contain SPF (Sun Protection Factor), which can protect the skin from UV exposure that can cause skin cancer, early aging, or pigmentation. In addition, cosmetic products can also form a protective layer on the surface of the skin that can prevent the ingress of dust, dirt, or bacteria that can cause irritation, infection, or acne. Lastly, cosmetic products can provide additional benefits for the skin, such as moisturizing, lightening, tightening, or overcoming certain skin problems. Some cosmetic products, such as moisturizers, serums, or masks, contain natural or chemical ingredients that can provide nutrition, hydration, or special treatments for the skin. Cosmetic products can also help to overcome skin problems, such as dull, dry, oily, acne, or sensitive, by using products that are suitable for the type or condition of the skin.

Unfortunately, among the disadvantages of cosmetic products are their ability to cause side effects, create environmental problems, and cause social problems. Firstly, cosmetic products can cause adverse side effects for the skin, such as irritation, allergies, acne, redness, or even cancer. This can happen because cosmetic products contain chemicals that can react with our skin or body. Some of the harmful chemicals in cosmetic products are parabens, formaldehyde, mercury, lead, or hydroquinone. Cosmetic products can also clog the pores of the skin, disrupt the pH balance of the skin, or reduce the skin's ability to breathe. Therefore, we must be careful when choosing and using cosmetic products that suit the type and condition of our skin. Secondly, cosmetic products can cause environmental problems, such as plastic waste, water pollution, or ecosystem damage caused by chemicals. The cosmetic products we use daily, such as shampoo, soap, toothpaste, or lotion, contain microplastics that can be thrown into waterways and contaminate rivers, seas, or lakes. These microplastics can be eaten by fish, birds, or other marine animals, which can cause death or health disorders in such animals. In addition, chemicals in cosmetic products can also damage ecosystems, such as coral reefs, water plants, or microorganisms, which can disrupt the natural balance. Lastly, cosmetic products can create social problems, such as discrimination, stereotypes, or pressure to perform perfectly. Cosmetic products are often associated with certain beauty standards, such as white skin, a slit nose, thick lips, or large eyes, which can make people feel dissatisfied with their appearance. Cosmetic products can also be discriminatory tools, such as distinguishing people based on skin color or face shape. Cosmetic products can also cause social pressure, such as requiring people to always perform perfectly, follow trends, or avoid criticism.

On top of that, nanocosmetics is a personal care product that contains nanomaterials or nanocarriers. Nanomaterials are small particles ranging from 1 to 100 nanometers that have special properties compared to ordinary substances (as mentioned before). Nanocarriers, on the other hand, are a transmission system that uses nanomaterials to carry the active substance to the desired part of the body. Nanocosmetics can improve the quality of cosmetic products such as lipstick, sunscreen, anti-aging products, cleansers, and perfumes. Nanocosmetics can also accelerate the absorption of active ingredients into the skin and reduce side effects. Besides, nanocosmetics have been well-received in Malaysia, proving that the nano-products market has exceeded 900 products worth RM381.80 million until 2020. However, the issue of not labeling the ingredients of products containing nanomaterials is still a problem, not only in Malaysia but also

globally to date. This causes problems for consumers to know whether a cosmetic product is safe or not, thus posing a risk to their health.

Contemporary Cosmetic According to Shariah Perspective

The variety of current cosmetics that exist on the market, such as nanocosmetics, requires a Shariah law assessment to ensure that Muslim users in particular are comfortable and confident in using them. Cosmetics are not only seen in the positive effects of their use; even the aspect of Shariah law also needs to be taken care of. Thus, two selected issues in cosmetics that involve the discussion of Islamic scholars will be analyzed. Some of the Islamic scholars' views on the current issue of cosmetics will be presented to see the status of the views of Sharia law. This Shariah law view involves current studies, fatwas, and legal explanations from authoritative bodies and Islamic scholars.

First and foremost, the use of parts and elements from animals, such as uterine extract (placenta), in cosmetics is not a new thing in this industry. The legal debate among Islamic scholars about the context of the use of placentas in cosmetics is different. This is because there is no text (*nas*) clearly about its prohibition, and this is categorized in the current *ijtihad* by the Islamic scholars (Mohd Mahyeddin, 2018). Among other things, the Mufti Department of the Federal Territories has submitted an Islamic law opinion related to placenta in cosmetics, which is permissible if the placenta is from a halal animal and through syar'ie slaughter. In contrast to animals that are categorized as impure (*najs*), the use of their placentas is prohibited for cosmetic purposes (Pejabat Mufti Wilayah Persekutuan 281, 2019). This Islamic law view coincides with the Islamic legal maxims *al-aslu baqa' ma kana a'la ma kana*.

Another issue to consider is the use of alcohol. Drinking alcohol has become a consensus (*ijma'*) among scholars regarding its prohibition. This is based on clear *nas* from the Quran and Hadith. However, its use on the outside of the body is a debate among Islamic scholars, so some permit it (Mohammad Aizat & Mohd Anuar, 2011). In current usage, especially in cosmetics, the term alcohol is explained in a wider context, whether it is in the category of alcohol or otherwise. Alcohol is often classified as a liquor that is prohibited by *syara'*. The fact is, liquor, or *khamr*, and alcohol actually have different meanings. The banned alcohol is ethanol, which is one of the ingredients in liquor. Liquor is categorized under alcohol, but not all alcohol is liquor. Therefore, alcohol that does not go through the process of making liquor is permissible (Nur Bahirah Baharum et al., 2020).

Among the issues of alcohol use in cosmetics is sake. Sake is a type of alcoholic drink that is common among Japanese people. It is made from the fermentation of rice starch that has been polished to remove rice bran. Sake is produced through a brewing process similar to that of beer, where starch is converted to sugar before it is converted to alcohol. Thus, it is clear that sake is a type of liquor and not just alcohol. Therefore, the Islamic law for alcohol is impure (*najs*), and it is prohibited to use it. Additionally, sake in the cosmetics industry in Japan is one that works to repair the skin and is anti-aging.

The position of cosmetics debated by Islamic scholars is in the aspect of *tahsiniyyah*, which is beauty and perfection. It does not reach the level of *daruriyyah*, which is an urgent need, unless it is related to medicine. Therefore, most Shariah views on these issues emphasize the *masalahah tahsiniyyah* element in determining which materials, in particular, cannot be used in cosmetic products. For aspects of beauty and perfection in personal appearance, *syara'* permits the use of *halal* and pure materials. Products that contain impurities (*najs*), such as from pigs, alcohol, and the like, are prohibited.

Nanomaterial and Nanotechnology in Cosmetic Treatment (Powder Embroidery)

Powder embroidery (*sulam bedak*), also called BB face glow or water shine BB Glow, or Dermedics mesowhite, is a cosmetic treatment that originated in Korea and spread to other Asian countries, then to the United States (US) and Europe. It was brought to Malaysia in 2018 and became very popular. It is a semi-permanent skin treatment that gives a flawless look, as if the customer is wearing foundation all the time. Plus, it gives an instant result, which means the effect of the treatment can be seen as soon as the treatment is completed. It also claims to have benefits such as brightening the skin, reducing dark spots and blackheads, and healing scars and uneven skin tones. The effect can last from several weeks to a year. Truth be told, a microneedling technique, which uses tiny needles and has been a common and safe cosmetic treatment since its introduction in the West in 1994, was the basis for developing the powder embroidery treatment (Alster & Graham, 2017). BB Glow (powder embroidery) treatments are easier to

do with microneedling devices; meanwhile, BB Cream is a product that combines many functions in one tube, such as primer, foundation, concealer, moisturizer, skin treatment, and sun protection factor (SPF) (Lance Setterfield, n.d.). Some people decided to mix BB cream with microneedling and inject the pigment into the skin, so that is how BB Glow (powder embroidery) cosmetic treatments exist. However, powder embroidery is a much more intricate procedure than usual microneedling, and this clearly sets them apart in terms of safety and legality. It is also different from regular BB cream, which only applies cream to the outer layer of the face and does not involve any microneedles. BB cream has multiple functions, such as hydrating, protecting, and enhancing the skin, while nanomaterials enhance the product's performance in terms of UV resistance, durability, efficiency, and penetration. Therefore, it makes sense that BB cream may contain nanomaterials.

As we can see, the use of BB cream in powder embroidery sparked a debate, as it involved a more complicated combination of ingredients than the usual microneedling practice that uses hyaluronic acid (HA) 5 and vitamin C to improve skin and pigmentation. Some dermatologists said that BB cream in powder embroidery could have up to 40 different substances that target various skin issues. Therefore, powder embroidery was banned because it was very different from the normal microneedling procedure that was generally safe (Christopher Iriarte et al., 2017). Unfortunately, many women today want to have flawless and radiant skin like Korean women, so they try and experiment with a lot of new and trendy treatments without considering the long-term effects of those treatments on their skin. Women, whether Muslim or non-Muslim, are crazy about powder embroidery, as it is an advanced facial treatment, especially in Malaysia. However, this kind of treatment requires careful research and explanation since it affects not only our health but also our compliance with Islamic law. Some serious issues from an Islamic legal point of view have emerged due to the practice of powder embroidery treatment. These issues include the following: how the procedure is done and whether it follows the Islamic rules regarding the purity of the materials used and the effects of the treatment; the potential harm to the customers; the deception in the appearance; and the tendency to display one's beauty excessively (*tabarruj*) (Muhammad et al., 2021). Hence, all these issues need to be addressed comprehensively in the interests of consumers.

This research selected powder embroidery as a legal issue that needs to be discussed because it is a popular trend in the Malaysian cosmetic industry. The selection criteria were based on the legal challenges, the complexity of understanding the procedure, and the foreign materials used in powder embroidery. The research compared different perspectives, such as Islamic jurisprudence (*shariah*) and dermatology (scientific), to find out the legal status of this practice and to correct the misconception that Islam prohibits everything. To determine the legal status of powder embroidery, researchers have considered three main factors. The first factor is the purpose and motive of using powder embroidery. The second factor is the kind of chemical substances involved in the process. The third factor is the extent of the positive and negative impacts of the treatment on consumers and society. These three factors should be analyzed together to make a sound judgment on the law for powder embroidery. Referring back to the first factor, the customer's motive for seeking the treatment is important, as beauty spa entrepreneurs only offer the services that are in demand. So, for this first factor, there are two laws: compulsory or mandatory, and forbidden or prohibited. If the customer wants the treatment to improve a defect caused by a disease or accident, then the treatment is recommended. In this case, the legal obligation can be raised to mandatory (*wajib*) for those who can afford it physically and financially because facial defects can also affect one's reputation, and in Islam, that is a necessary benefit (*maslahah*) to protect (Al-Zuhayli, 1986). However, if the treatment is done to oppose the natural course of life, such as removing wrinkles and pigmentation due to aging, or for vanity reasons, then the treatment is prohibited (*haram*). The hadith of the Prophet Muhammad SAW emphasizes the role of intentions in determining the moral value of an action.

“Indeed, all deeds depend on intention, and indeed each individual gets consequence from what he intends. So, whoever whose change (effort) is to (get) the world, then he will get it or aim (get) a woman, then he will be able to marry her, then his change (effort) is according to what (intention) he wants despite the effort of him changing.”

(Al Bukhari, n.d., Hadith No. 680)

The second factor is that the powder embroidery process uses a substance that indicates the purity and legality of the treatment. For example, the gelatin, hormones, and protein that are used in the treatment

must come from a halal source, such as plants or animals that were killed according to Sharia law. The treatment is prohibited if the substance or chemical comes from impure or illegal sources, such as pork, dead animals, cannabis, or plants that can impair one's inhibition. The basis for this prohibition is the various commands from Allah, in Surah al-A'raf, which means,

"They are the ones who follow the Messenger, the unlettered Prophet, whose description they find in their Torah and the Gospel. He commands them to do good and forbids them from evil, permits for them what is lawful and forbids to them what is impure, and relieves them from their burdens and the shackles that bound them. (Only those who believe in him, honor and support him, and follow the light sent down to him will be successful.)"

(Al-A'raf 7:157)

the hadith of the Prophet Muhammad PBUH,

"Indeed, Allah has sent down diseases and medicines and made for every disease there is a cure (it), so treat but do not treat with forbidden substances"

(Abu Daud, n.d., Hadith No. 3874)

and the consensus of scholars (*ijma'*) on the use of illegal substances, even for medical purposes, unless there are no *halal* alternatives. Furthermore, powder embroidery is not an emergency (*darurah*) treatment that could endanger human life (Ibn al-Mundhir, 1986). Apart from that, substances from questionable sources are used in most powder embroidery treatments. The problem stems from using cosmetic products that are not labeled properly, not registered with the Malaysian Ministry of Health (MOH), and not supervised by the local authorities. As researchers have discussed, powder embroidery contains nanomaterial substances, and as researchers have discussed above, it is very difficult for consumers to identify the source of nanomaterials, either from natural (plant or animal) or synthetic sources. This is not a unique issue for Malaysia, as many other countries also face it, according to various news sources, both offline and online. What makes it worse is that some registered cosmetic owners are willing to sell harmful products, as shown by the announcements of the National Pharmaceutical Regulatory Agency (NPRA) of the Malaysian Ministry of Health every year. Some of the common toxins found in their products are mercury, hydroquinone, tretinoin, and diphenhydramine (NPRA, 2020). Using more unknown substances than most regular cosmetic products, powder embroidery is riskier because of this factor.

Finally, the third factor is the extent of positive and negative impacts of the powder embroidery treatment on consumers and society. The legal implications of the powder embroidery treatment are based on the balance of the positive or negative effects that are present in it. It is a fact that every treatment or substance has positive or negative effects. The difference between them is the degree of one effect over the other, whether it is positive or negative. If the positive effect outweighs the negative, then the treatment or substance is allowed and *halal*, but if the opposite is true, then the treatment or substance is forbidden or prohibited. For example, sugar and rice are *halal* because the calories in them have more benefits than harm in normal situations. However, animal carcasses are *haram* because the potential harms are greater than the benefits. This consideration is grounded in the Prophet Muhammad's PBUH reasonable prohibition of harm (*dhoror*), as mentioned before. Furthermore, as mentioned in the previous *fiqh* writing, *al-qisyrah* is the name of a cosmetic treatment that is similar to powder embroidery. It involves peeling off the skin with *humrah* or *waras*, which are red flowers that produce yellow powder ('Ali Rida, 2004). Before applying it to the face, it is usually prepared so that it removes the skin and reveals a new skin that is more bright and smooth. The idea of *al-qisyrah* treatment is basically the same as the idea of powder embroidery as understood by modern scholars like 'Abd al-Karim Zaydan (1993) in his writing, "*Al-Zamakhsyari's opinion on al-qisyrah is that a woman uses reddish substances (humrah) to make their skins peel off and lose their color. This is what many women do today by using some chemical products and putting them on their face. The product, whether it is liquid or solid, has a red or yellow color. They rub this on their faces until the skin becomes clean and smooth. Sometimes women go to beauty salons to get this treatment.*" The Prophet Muhammad PBUH prohibited *al-qisyrah*, which is the use of reddish substances (*humrah*) to peel off and whiten the skin. As reported by 'Aisyah,

“Prophet Muhammad cursed perpetrators of the practice of exfoliating the skin of the face and customers who asked for his face to be exfoliated, tattooists and tattoo customers, as well as actors who connected their hair and customers who asked for their hair to be connected.”

(Bukhari, n.d. Hadith No. 4507)

scholars say that al-qisyrah practice is forbidden for several reasons, such as trying to alter the way Allah created it, hide the true state of appearance, imitate the practices of the wicked, exceed the limits, and cause harm to the face and health in the long term (Ibn al-Jawzi, 1997).

To sum up, there are two legal rules in Islamic law regarding the powder embroidery treatment. The first rule is that Islam allows and encourages this treatment if the person’s intention or goal is to heal and correct the skin problems on the face, such as blackheads, uneven skin tone, acne scars, or others that indicate serious skin issues. Moreover, the aim of using cosmetic products is to hide the paleness on the face and enhance the outer appearance, which is considered a matter of beautification (*tahsiniyyah*) as long as there is no element of makeup that alters the original shape. Therefore, it is recommended for women to treat their faces to eliminate and solve the blackheads, warts, freckles, and acne, as the face will look more attractive if all the imperfections are removed. Secondly, if the semi-permanent powder embroidery treatment has harmful effects and scientific evidence shows that the treatment has more and bigger risks (*mafsadah*) than its advantages (*maslahah*), then it is prohibitive for the resulting damage. This view agrees with the fiqh method *dar’ al-mafasid awla min jalb al-masalih*, which means the prevention of the risk or harm is better than getting the benefits (Pejabat Mufti Wilayah Persekutuan 556, 2021).

This research examines the issue of powder embroidery treatment, which is a cosmetic procedure that involves injecting pigments into the skin. Most Islamic scholars and the World Health Organization (WHO) have advised against this treatment because of its many complications, high risk, and side effects. To prevent and avoid further harm to women who have skin problems, it is recommended that they seek treatment from licensed and certified clinics and consult with expert doctors and dermatologists in the field of skin and cosmetics. Nevertheless, Islamic law has set some rules, guidelines, and boundaries that we, as Muslims, have to respect and follow correctly to protect human life from any harm. This research shows that the practice and application of powder embroidery are not allowed because they damage the skin (dermatological) and the body (physical). This prohibition is based on three main factors that were discussed before: the purpose and motive of the person who does powder embroidery treatment, the kind of chemical substances involved in the process, and the positive and negative impacts of the treatment on consumers and society. To support this analysis and research, dermatologists agree that any interference with the derma system is very risky because it will affect the balance and function of the derma system, which is a very complex regulatory system.

Conclusion

Nanocosmetics are personal care products that contain nanocarriers or nanoparticles, which can enhance formulation efficacy and promote the controlled release of active ingredients. Nanocosmetics have various applications in sunscreens, moisturizers, perfumes, anti-aging, and hair products. However, nanocosmetics also raise some ethical and religious issues, especially for Muslims. According to Sharia law, Muslims are allowed to use whatever beautifies them, as long as it does not violate the rules of the Shariah. Moreover, Muslims should not expose their beauty to foreign men (*ajnabi*) and should not use any cosmetics that could harm their health. Therefore, Muslims need to be aware of the ingredients and effects of nanocosmetics and consult the experts and Islamic scholars for the ruling on using them. For example, some nanocosmetics may contain animal extracts, such as uterus extract, or alcohol, such as sake, which are prohibited in Islam. Then, cosmetic treatment, which is powder embroidery, is a cosmetic treatment that uses nanomaterials to create semi-permanent make-up on the skin. This may be considered altering the creation of Allah SWT, which is forbidden in Islam, unless it has met some of the conditions set by *syara'* that permit the treatment. Hence, Muslims should be careful and cautious when using nanocosmetics and cosmetic treatments and seek the guidance of the Quran and the Sunnah.

References

- Abu Dawud, Sulayman b. al-Asy'ath. (2015). *Sunan Abi Dawud*. Dar al-Ta'sil.
- Al-Bukhari, Muhammad b. Isma'il b. Ibrahim b. al-Mughirah b. Bardizbah. (n.d.). *Sahih Al-Bukhari*. Cairo.
- 'Ali Rida. (2004). *The 'Uh Al-Rasi' Al-Hadith Complex*. Al-Bukhari Islam Centre.
- Alster, T., & Graham, P. (2017). Microneedling: A review and practical guide. *Dermatology Surgery*, 44(1), 1–7.
- Al-Zuhayli, Wahbah. (1986). *Fundamentals of Islamic jurisprudence*. Dar al-Fikr.
- Bernauer, U., Bodin, L., Chaudhry, Q., Coenraads, P. J., Dusinska, M., Gaffet, E., Panteri, E., Rogiers, V., Rousselle, C., Stepnik, M., Vanhaecke, T., Wijnhoven, S., von Goetz, N., & de Jong, W. H. (2021). The SCCS scientific advice on the safety of nanomaterials in cosmetics. *Regulatory Toxicology and Pharmacology*, 126, Artikel 102046.
- Bhandari, P. (2020). *An introduction to qualitative research*. Scribbr. <https://www.scribbr.com/methodology/qualitative-research/>
- Brown, C. (2023). *Perbedaan antara makroskopik dan mikroskopik*. Strephonsays. <https://ms.strephonsays.com/macroscopic-and-microscopic-6911#menu-3>
- European Union. European Commission. (n.d.). *Glossary and acronyms related to cosmetics*. <http://ec.europa.eu/growth/sectors/cosmetics/>
- Hearst, M. (2003). *What is text mining?*. Berkeley School of Information. <https://people.ischool.berkeley.edu/~hearst/text-mining.html>
- Ibn al-Jawzi, 'Ab. Al-Rahman b. 'Ali. (1997). *Ahkam al-Nisa'*. Ibn Taymiyyah Library.
- Ibn al-Mundhir, Abu Bakr Muhammad b. Ibrahim al-Nisaburi. (1986). *Al-Ijma'*. Dar al-Jinan.
- Iriarte, C., et al. (2017). Review of applications of microneedling in dermatology. *Clinical, Cosmetic and Investigational Dermatology*, 10, 289–297.
- Jamluddin, M. A., & Ramli, M. A. (2011, November). *Isu penggunaan alkohol dalam penghasilan produk gunaan semasa: Analisis dari perspektif hukum Islam* [Kertas kerja]. Seminar Perundangan Islam dalam Masyarakat Kontemporari (ISLAC).
- Malaysia. National Pharmaceutical Regulatory Agency (NPRA). (n.d.). *Cancellation of notified cosmetic products*. <https://www.npra.gov.my/index.php/en/consumers/safety-information/cancellation-of-notified-cosmetic-products.html>
- Malaysia. Pejabat Mufti Wilayah Persekutuan. (n.d.). *Irsyad al-Fatwa siri ke-281: Hukum suntikan kosmetik menggunakan plasenta*. <https://muftiwp.gov.my/artikel/irsyad-fatwa/irsyad-fatwa-umum/3002irsyad-al-fatwa-siri-ke-281-hukum-suntikan-kosmetik-menggunakan-plasenta>
- Malaysia. Pejabat Mufti Wilayah Persekutuan. (n.d.). *Irsyad al-Fatwa siri ke-556: Hukum sulam bedak*. <https://muftiwp.gov.my/ms/artikel/irsyad-fatwa/irsyad-fatwa-umum/4686-irsyad-al-fatwa-siri-ke-556-hukum-sulam-bedak>
- Muhammad, I. R., Muhammad, S. I., & Noor, N. A. R. (2021, Jun). Analysis on powder embroidery treatment (BB Glow) from the Islamic law perspectives. *Revistageintec*, 11(2237-0722), 1349–1364.
- n.a. (2021). *Apa perbedaan nanomaterial dan nanopartikel?*. JawabanApapun.com. <https://jawabanapun.com/apa-perbedaan-nanomaterial-dan-nanopartikel/>
- n.a. (2023). *Pengertian nanoteknologi, manfaat, dan 7 contohnya*. Pakarkimia.com. , *applications and perspectives*. Wiley-VCH.
- Nur Bahirah Baharum, et al. (2020). Literatur: Konsep alkohol menurut Islam. *Jurnal Al-Sirat*, 19, 1–15.
- Rahma, D. E. (2019). *Sintesis nanopartikel emas menggunakan bioreduktor ekstrak daun ketapang (Terminalia Catappa) dengan irradiasi microwave* [Doctoral dissertation, Universitas Islam Negeri Maulana Malik Ibrahim Malang]. Universitas Islam Negeri Maulana Malik Ibrahim Malang Repository. <http://etheses.uin-malang.ac.id/13689/1/14630073.pdf>
- Salleh, M. M. M. (2018). Plasenta haiwan dalam produk kosmetik dan farmaseutikal: Halal atau haram?. *Malaysian Journal of Syariah and Law*, 8(1), 1–12.
- Salvioni, L., Morelli, L., Ochoa, E., Labra, M., Fiandra, L., Palugan, L., Prosper, D., & Colombo, M.

- (2021, Mei). The emerging role of nanotechnology in skincare. *Advances in Colloid and Interface Science*, 293, Artikel 102437.
- Setterfield, L. (n.d.). *BB Glow & microneedling – risks & benefits*. NeedleGuide.com. <https://needlingguide.com/bb-glow-microneedling-risks-benefits/?fbclid=IwAR0n-NAgJfYDDe1lgIncAKjPIv5X5ysaOwOyJEcXtklvWRDUAEEnEOScVErs>
- Sridianti. (2023). *Bahan nano dan partikel nano dalam IPA, pengertian, perbedaan*. Sridianti.com. <https://www.sridianti.com/ipa/bahan-nano-dan-partikel-nano.html>
- The Royal Society and The Royal Academy of Engineering. (2004). *Nanoscience and nanotechnologies: Opportunities and uncertainties*. The Royal Society.
- United States. Environmental Protection Agency. (n.d.). *Nanotechnology white paper* (EPA 100/B-07/001). Office of the Science Advisor.
- United States. National Nanotechnology Initiative. (n.d.). *What is nanotechnology?*. <https://www.nano.gov/>
- Zaydan, 'Abd al-Karim. (1993). *The joints in the provisions of the 'Ah' and the Muslim house in Asir'ah Islam*. Al-Resalah Institute.