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***BIOGEOMETRY SCIENCE AS A
NEW APPROACH IN APPAREL
DESIGN FIELD***

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Summary

Energy as electromagnetic waves has primary and secondary effects. Certain shapes have affect the secondary effect either positively or negatively. BioGeometry is dealing with shapes which affect positively on energy. BioGeometry has principles of designs which used during design shapes. Fashion designs also have elements and principles which used during clothing designs. The human body has an open energy system that is in instant exchange on the subtle energy level just as it is in other levels. The first boundary between the body's energy system and environment is on the level of what we aware, as a bounday our clothes affect the energy exchange in both directions. The object of this research is to study how this boundary can affect the quality of energy exchange in order to bring harmony within the human subtle energy system and have positive effect on the vitality, emotional and mental levels.

To achieve this research object, the following steps were done,

- 1- Fashion designs sketches was drawn taking into consideration fashion design elements and principles.
- 2- Four sketches selected randomly to be main designs for created inspired designs.
- 3- Inspiration process depended on using BioGeometry design principles and elements to creat nine designs from everyone of main design.
- 4- Fourty inspired designs analyzed clearly to display the elements and principles of BioGeometry science used to achieve its positive effects.

- 5- 100% cotton fabrics were selected taking into consideration its natural components to amplify and balance the energy fields of body on all levels, which give body greater power when BioGeometrical qualities (BG3) spread through the whole body.
- 6- Eighteen of inspired designs applied with selected fabrics.
- 7- Wooden, plastic accessories and buttons to complete design details, also embroidery lines with colored cotton threads used.

1-Introduction and literature review

The human body has an open energy system that is in instant exchange on the subtle energy level just as it is in other levels. The first boundary between the body's energy system and environment is on the level of what we aware, as a boundary our clothes affect the energy exchange in both directions. The object of this research is to study how this boundary can affect the quality of energy exchange in order to bring harmony within the human subtle energy system and have positive effect on the vitality, emotional and mental levels.

1.1. Fashion design:

The total design procedure involves design on aims, developing an approach and selecting and organizing the forms and materials best suited to the purpose. To design well you need to have a knowledge of fashion and to be able to make up garments, to have good taste and instinctive flair for color, cloth textures and the ability to sense what is right for the times. Creating an effective design involves the elements of design; color, shape, line and texture; they are the building blocks of design. The principles of design are balance, proportion, emphasis, rhythm and harmony. They are guidelines for use of the elements of design. ^(41,42,58)

1.1.1. Elements of fashion design:

1.1.1.1. Color:

Color is the most exciting design element. It enables us to express ourselves. It affects how we feel. It can make clothes seem warm or cool, perky or drab. It can create illusions by making us look taller or shorter, larger or smaller. The best colors for each of us are the ones that make the most of our natural looks.

Color is probably the most personal and important aspect of fashion. It is what first catches the eye of someone who sees you, it sets the stage. Clothing is usually selected because of its color.

Color has three dimensions or qualities. They are hue, value, and intensity. ^(44,42,58)

(a) Hue: Hue is the name given to a color, such as red, yellow, green, or violet. It distinguishes one color from another. There are three pure or basic hues. They are the

Primary hues are red, yellow and blue. They cannot be made from any other colors. All other colors can be made by mixing them.

Secondary hues are orange, green and violet. They are made by mixing equal amounts of two primary hues together. Orange is made by mixing red and yellow. Green is made from equal amounts of blue and yellow. Violet is a combination of red and blue.

Intermediate hues (tertiary hues) result when equal amounts of adjoining primary and secondary colors are combined. Intermediate colors are blue-violet, yellow-green, yellow-orange, red-orange, and red-violet. ^(41,42)

(b) Value: Value is the lightness or darkness of a color. The values of colors range on a gradation scale from almost white to almost black. A *tint* is made when white is added to the color so it is lighter than the pure hue. A *shade* is made when black is added to make a hue darker.

(c) Intensity: Intensity is the brightness or dullness of a color. Very strong, bright colors are said to have high intensity. Dull, faded, or dusty colors are low in intensity. Intensity can be lowered by mixing a hue with its complement on the color wheel. ^(41,42,58)

1.1.1.2. Shape and form:

Shape and form are extremely important in apparel and accessory design. A shape may be defined as a flat enclosure of space having two dimensions length and width. The

silhouette or shape is the most obvious visual element of a garment. The silhouette is the outline of the entire outfit and is often spoken of as "form". The shape of the silhouette usually compliments the shape of the body, but exaggeration is often used to create a special effect and emphasize a part of the body that is the current focus of fashion. It is created by the cut and construction of a garment since shape can be seen at a distance, it is noticed early. Thus, it is a major factor in a viewer's first impression of a person. Clothes can reveal natural body contour. The outer shape of a garment can enhance or hide much of the figure underneath.

When lines connect, they create form, which is the shape of the object. A form may be thought of as a three dimensional structure (mass or volume) revealed or surrounded by space. A form has length, width and basic forms are projections of the basic shapes.^(41,44)

1.1.1.3. Line:

Line is a distinct, elongated mark as if drawn by a pencil or pen. Lines have direction, width and length. Eyes follow lines. Lines suggest movement or rhythm when they lead the eyes. Lines lead the eyes up and down, side to side, or around. Lines of garments can be categorized in three ways: by **type**, by **direction** and by **application**⁽¹⁶⁾:

The three **types** of lines are straight, curved, and jugged:
(a)***Straight lines*** are bold and severe; they suggest dignity, power, and formality. They give steadiness or stability. If overdone, they can give a stiff look.

(b)***Curved lines*** can be rounded and circular or somewhat flattened out. Circles and curves make spaces look larger than they really are. They increase the size and shape of the figure. Circles are closed lines, so they stop the eye entirely. Somewhat flattened curves are the most flattering to the human shape. Curved lines are less conservative, formal, and powerful than straight ones. They add interest and smoothness.