

# Plastic Possibilities of Ceramics and Metals as an Introduction to Create Contemporary Jewelry

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## Abstract

The idea of the research is based on making use of the plastic potentials of ceramic and metal as raw materials that have a functional and aesthetic role to produce innovative jewelry in its well-known functional framework and inspired by the Islamic heritage by relying on the terms of Islamic decoration as a principle for formation and expression, due to its intellectual content and expressive connotations.

In this context, the research aims to produce innovative designs for metal ceramic ornaments with a contemporary vision while preserving the Islamic character by employing the terms of Islamic decoration, as well as strengthening the principle of synthesis between materials and fields as an introduction for innovation in plastic art. The research followed the descriptive, analytical and applied method and one of the most important findings of the research is that it is possible to preserve the Islamic identity to make metal ceramic jewelry with aesthetic character and formal features inspired by the decorative terms of Islamic art.

**Keywords:** Formative Potentials- Decoration - Islamic motifs – Synthesis

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## Introduction

Jewelry is an important component of tangible heritage and an aspect of artistic, historical and social life, and that the combination between ceramic and metal leads to the development of innovative thinking and enrichment of expression in the artistic work. Research in the field of jewelry manufacturing is directed from experimentation and technical practices in search of modern technical performance methods and innovative artistic solutions in the field of ceramic-metal synthesis in the manufacture of jewelry and the

detection of aesthetic values and the extent to which it is possible to benefit from the Islamic terms to create ceramic metal ornaments by using various techniques to synthesize between ceramic and metal materials by taking advantage of the characteristics of the nature of those materials and its role in enriching the Artistic works. Artistic work has become a field for practicing experimentation with different materials and adding new technical practices to give the artwork new expressive and plastic values, so the various materials contribute with the designer's creativity and thought to give

new and innovative artistic formulations.

The material is considered one of the most important components of artistic works because of its vital role in the formulation of the artistic work, as ornaments carry within its folds aesthetic, functional and moral values, and the artist and designer tend to study the properties and possibilities of the material in order to understand it more, so that helps them to adapt it to suit their art and make it more powerful in expression. The artist's effort is not limited to his study of the material only in its initial nature, but rather searches for its harmony with other materials and the extent of his success in finding correct relationships among the materials with each other, and identifying its capabilities and the different plastic media to synthesize them, and trying to benefit from them in the production of innovative artistic works.

### Research Problem

The research problem is determined in the answer to the following main question:

- \* Is it possible to design and produce contemporary jewelry inspired by Islamic terms by combining ceramic and metal techniques?

The main question is divided into the following sub-questions:

- How to create modern designs for metal ceramic jewelry crafts that combine originality with contemporary?
- What are the appropriate plastic techniques for combining ceramic and metal materials in creating jewelry crafts?

### Research Objectives

- Producing innovative designs for ceramic metal jewelry with a contemporary vision.
- Inspiration from the terms of Islamic decoration as an artistic source for designing metal ceramic jewelry with

contemporary visions.

- Achieving new aesthetics through the synthesis of ceramics and metals to produce innovative jewelry.

### Research Importance

- Promoting the principle of synthesis between materials and fields as an introduction for innovation in plastic art.
- The research is considered a new trend in the field of ceramic metal shaping through the development of unconventional jewelry.
- Emphasizing the aesthetics of Islamic art as a rich and fertile source of artistic treatment that helps the artist and designer develop his innovative capabilities
- The research presents an attempt to support technical experimentation in the field of metal ceramic shaping materials.

### Research Hypotheses

- The combination of materials leads to the development of innovative thinking and the enrichment of expression in artistic work.
- Islamic motifs can be used as a source of design because it has unique symbolic connotations.

### Research Methodology

The research follows the descriptive, analytical and applied method according to the following frameworks:

**Theoretical Framework:** The research deals with the descriptive and analytical method in studying selections from Islamic art motifs to extract aesthetic values from them, identifying the features and characteristics of each, and studying some ceramic techniques to make use of them in the synthesis process between ceramics and metal.

**Practical Framework:** The practical framework of the research is based on a subjective experience, through which the two researchers created a set of designs for metal-ceramic jewelry, so that the designs are dominated by the experimental contemporary character inspired in its design and decorative structure from the features of Islamic art.

### Research Limits

The research limits were limited to:

- Areas of experimentation in synthesis were limited in the fields of ceramics and metals.
- Islamic decorative terms from different eras (starpatterns - vegetal patterns-geometric patterns).
- The design aspect was limited without applying in implementing the virtual three-dimensional character of the jewelry, characterized by clarity of shape, details and techniques,using the capabilities of Photoshop.

### Research Terms

#### Synthesis

The word “synthesis” is used in modern arts in the sense: “the combination of more than one element or more than one material in a single work of art by unconventional methods and in new formulations so that the combined materials enrich the artistic work itself(El-Demerdash, p. 5) and impart to it aesthetic and expressive values and synthesis as a concept that achieves artistic and aesthetic innovation. There are many materials and its sources are varied, whether natural or industrial, which helps the artist to present innovative works by getting to know the raw materials, its capabilities, characteristics and various methods of working with them, then combining more than one material.

The combination among multi-source materials is vital to enriching the artwork in terms of value, shape, color, texture, and synthesis gives artistic and expressive values (Adel Shaath, p. 23)that enrich the work of art. Combination in art includes the conscious selection of the materials involved in the formation of the artwork, the deduction of the objective foundations for the process of synthesizing the materials and the perception of endless relationships of compatibility and harmony among the materials. Each artist has his own style of synthesizing his materials, so when he performs the creative process in the field of formation, the first goal he is trying to reach is to compose a form characterized by order, unity and symmetry in a calculated manner so that the work performs its aesthetic and formal function to achieve the desired expression, and that choosing the material through which the artist expresses is not left to chance, as each material has its potential and limits so that the artist decides whether it is suitable or not to express what is going around in his thought and the artist forms jewelry designs with more than one material, so he may obtain available experiences that help to develop his capabilities and perception.

#### Contemporaneity

The word contemporaneity includes the meaning of synchronization and accompaniment. During the French Revolution of 1789, at the end of the eighteenth century, a development appeared in social and political life, not only in France but also in Europe as a whole, as well as when the "Dada" movement appeared in the city of "Zurich" in Switzerland and called for the downfall of traditional arts, which called for new expressive styles. This rebellion spread in Europe simultaneously during and after the First World War, and it can be said that society is characterized by contemporaneity, as its ideas, cultures and tools correspond to the data of the new models, that is to express events in the form

of artistic creativity. The best example of this is the murals of Mexico that expressed the revolution in a new style, as well as the painting "Guernica" by Picasso. In addition, we find that modernity is a process that is dependent on environmental conditions that differ from one society to another, so it is not possible to adopt a pattern or method that should be emulated from one society to another. Whereas modern art came as a result of progressive and successive movements as a preliminary stage to contemporary art.

### Features of Jewelry in the Modern Era

The modern era is considered the beginning of the emergence of the philosophical theory of the jeweler designer, as this jewelry were distinguished by new visions associated with many modern intellectual developments, in addition to the scientific development and technological progress that prevailed in the modern era and as a result of changing intellectual concepts. Many new forms of jewelry appeared in which artists used their artistic expressions depending on new materials and techniques introduced by technology in addition to the new intellectual concepts that appeared in that era, these artists have moved away from the visual transfer of natural forms and moved to the development of innovative designs that link the designer with the concepts of his time with all the cultural, scientific, economic and artistic factors it contains... and others (Sultan 2001, p.9).

### Design and Combination of Ceramic Metal Ornaments and Aesthetic Values

The research attempts to reformulate unconventional jeweler by synthesizing metal and ceramic materials to create innovative patterns with creative visions from pieces of jewelry and the mechanism of combination between metal and ceramic materials, as this has an impact on the aesthetic of jewelry pieces. The multiplicity of raw materials in the artistic work has an influential

factor in the richness of the work, and the field of metal ceramic ornaments is one of the applied fields that require a balance between aesthetic values and technical aspects so that they complement each other in order to interact in one mixture by making use of different shaping methods ceramic, metallic and a combination of more than one technique to serve the goal of the final product of contemporary jewelry.

### Ceramic Ornaments

Ceramic ornaments have more beauty than other types of jewelry and the most important influences on the appearance of ceramic jewelry are the glass coatings and ornaments that cover its surface. Ceramic is characterized by its diversity of materials, methods of formation and relatively low production cost compared to some other materials; this makes ceramics one of the distinctive jewelry that many different social classes wish to have.

### The Planning Stage and the Selection of Materials and Techniques

The planning or preparation stage is considered the first process that comes at the forefront of preparing for any innovative work, as this stage requires the artist to use his mind in contemplation and thinking in several directions to settle the set of determinants that he will deal with in order to reach his goal, and among those determinants is the selection of appropriate materials and techniques that suit those materials. Within the framework of the desired functional goal and then the aesthetic design which will form a final framework in which all of these determinants meet. The formulation of jewelry in the research also depends on the combination of the two raw materials of ceramics and metals, and the designer should combine them according to what is determined by the design requirements, so that the designer can choose what suits him from raw materials, and in order for the designer to be able to choose the materials that suit him, it is

necessary to study the nature of the material first in terms of its plastic capabilities and its surface appearance through its color and texture, and the technical treatments required by these materials through knowledge, practice, observation and experiment, by using special means and tools that contribute to the translation of his ideas in line with the requirements of the aesthetic, functional and economic components of the design to reach innovative solutions in the field of jewelrycraft. The metal and ceramic materials, with their plastic capabilities and properties, have influenced the formation of jeweler, which creates new aesthetic and intellectual concepts (Al-Ahwal - P.5) towards dealing with jewelry shapes as artistic works that reflect the concepts of jewelry in the era of scientific and technological development and broad areas for research, experimentation, merging and synthesis, for the possibility of creating unique and original shapes jewelry.

### Design Stage

Design is defined as a process of creation, innovation and creativity, and given that design is an innovative process that aims to achieve a functional and aesthetic purpose, since the design process depends on the designer's ability to innovate and as innovation means, in its entirety, renewal and continuous development, and it is related to reorganizing the surrounding assets in order to achieve a degree of aesthetic values and functional suitability and the main goal in designing jewelry that the designer seeks to reach, that is through the consistency and connection among all the elements that the design consisted of, and what is related to the design foundations such as unity, repetition, proportion and rhythm to achieve an artistic work characterized by the aesthetic or functional aesthetics.

The design stage in the framework of the

research is based on an attempt to find innovative art formulas with a formula derived from some Islamic motifs suitable for producing units of ceramic metal ornaments, through the method of experimentation, which needs several approaches, namely (composition - abstraction - analysis - modification - simplification - deletion - Addition) in order to obtain new expressive and formative values for those elements, taking into account that those elements taken from Islamic art retain some characteristics that indicate their original nature.

### Suggested Ceramic Techniques in the Design of Ceramic Metal Ornaments

The first researcher suggests several different techniques for implementing ceramic parts within the jewelry artifacts of the experiment, so to be guided with in the implementation stages if needed. For the proposed clays to be used, it is preferable to use pre-prepared clays, using the method of manual shaping and shaping by molding, then drying the ceramic parts before burning, using natural drying, then burning at different temperatures depending on the type of clay and called the first fire, then painting these parts and then decorating them with either paint or linings, taking into account the proportion of Shrinkage for linings and coatings and their compatibility with the body, as for the glass coatings, they are performed with various techniques such as metallic luster.

### Metal Techniques in designing Ceramic Metal Ornaments

Recent years have witnessed a great bias towards technology in the field of plastic art; as technology needs an abundance of capabilities, means, and methods. Technology has not only penetrated plastic art, but has become an important thing in many areas in our daily life, especially in the field of metalwork because of its importance in showing the artistic work, and there are many technical methods, including:



## Melodic Shaping

What is meant by the bend is the state of the body if it is fixed from one side and rotating its other end at some angle, and the angle of the bend may decrease until the oriented part overlaps the original plane and touches it completely or partially, which is called folding. The formation by bending or folding gives us a visual appearance different from other plasticization methods, due to the fact that the surfaces resulting from this formation are characterized by rise and fall as well as the diversity of directions according to the variation of the angle of curvature and the direction of folding of the formed surface to the right, left, up or down. This affects the aesthetic values of the overlapping and intertwining surfaces among them.

## Shaping with Hammers

This is done through the use of hammers as an external force that affects the appearance of the metal material and changes its visual appearance. This method may be hot or cold, and this is due to the thickness or diameter of the metal used, as the larger the thickness or diameter, the hotter hammering is needed.

## Shaping by Sawing

It means "the process of separating parts of the total metal surface and these parts are often technically formed in the form of parts of a pre-prepared design, and the researcher used this method to create the required diversity in the data. The manual sawing process depends on the muscular strength of the executor, taking into account the movement of the saw in a constant plane and the pressure on the saw during its forward movement, as the saw teeth remove the metal in the form of swarf or chips (p.168).

## Emptying

It is one of the methods of decorating the

surface of the metal. The decoration is carried out by emptying(hollowing) the surface of the metal by "Tool Bits", the emptying saw is also used "Wood Hacksaw ". After drilling holes in the spent metal and passing the hacksaw through it, and after completing the emptying process, metal files are used for finishing, and through the use of this method we can give the shape of the executed metal artifact an artistic appearance varied in the lights and shapes.

## The Aesthetics of Islamic Decoration as a Source of Design

Every civilization has its own distinct art and decorations that belong to it and reflect its character. Islamic art has also been distinguished by its original motifs, which gave Islamic art its own character and added to it aesthetics and splendor in form and performance. Arab and Muslim artists followed advanced steps in composing their decorations, , one of the first of these steps is the simplification and editing of ancient decorative forms, and we find in Islamic decoration a deep meaning, as it is full of an aesthetic spirituality in symbolism and abstraction, and these decorations appear as if some pushing others. Iyad Saqr 2003, p.2

## The Art of Ornaments in the Islamic Era:

The manufacture of jewelry varied in the various Islamic eras, so it was made of gold and silver, and its shapes varied from pendants, rings, gold and silver earrings, necklaces, bracelets and anklets, and there are models of these jewelry in many museums around the world, jewelry in Islamic art depends on more diverse and more complex methods, such as inlay with enamel, precious and semi-precious stones, and carving, which means inserting metal into another by drilling for decorations and filling their spaces with thin metal wires by gently hammering them.



Figure: (1) shows the shape of a pendant from the Fatimid era, made of gold decorated with enamel.



Figure: (2) shows each decade of the Ayyubid era made of gold, studded with precious stones and pearls, and decorated with interlacing.



Decorations in Islamic arts are classified into floral motifs - living creatures' decorations (human beings - animals - mythical creatures) - geometric motifs - writing motifs - various scribes. And among the features that characterize the Islamic decoration:

### Symmetry

Symmetry is one of the features of decoration in Islamic arts, so that one of its halves applies to the other through the axis of symmetry, and symmetry arises in the forms through repetition and reflection of one or more decorative units.

### Repetition

We find that most decorative forms in Islamic arts depend on the basis that every decorative unit can be repeated infinitely in a space, and the decorative design represents a design consisting of one or more decorative units, so the repetitive unit is a part and a whole.

### Balance

Balance is the basic rule that must be found in every decorative composition, rather in every good work of art. Balance, in its comprehensive sense, expresses the integrated artistic formation through the distribution of elements, units, and colors, also the harmony of their relations with each other and the surrounding spaces.

### Decorative Unit

The shapes and elements upon which the Islamic decoration is based are subject to a philosophical thought and ideological belief and transcend the outward and superficial appearance of things. The Islamic decoration in all its various forms, both simple and more complex, consists of

a geometric unit that repeats regularly to infinity, and these decorative surfaces are formed by the repetition movement, or what is known as the integrated decoration structure.

The decorative unit is considered the basic component of the design and can be defined as the space confined between one or more contiguous lines depending on their type and can be classified into two types: geometric decorative units and natural decorative units. Islamic decoration has been characterized by aspects that lie in the existing relationship among repeated and varied decorative units in their geometric integrity and artistic consistency.

### Research Applications

The applied aspect of the research deals with attempts to develop a set of designs for metal ceramic jewelry artifacts, relying on Islamic motifs to reformulate them in different designs, taking into account the application of design elements (unity - balance - rhythm).

- First: With regard to the metal aspect of the design, the metal parts varied in designs between the real and the virtual, as the second researcher implemented some parts, shapes and frames included in some designs through the previously mentioned metal shaping techniques, then the researcher photographed these parts (Fig. 5, 6, 7,8) and deal with it to complete the design and perform additional treatments on it through Photoshop.
- Second: With regard to ceramics, historical ceramic decorative terms were used, as well as samples previously prepared by the researcher with different glazes.

Figures (5:8)





The application framework for research is based on handling:

Design proposal No. (1)

Figure No. (9)

**Type:** Chest Pendant

**Size:** 8 cm in Diameter

**Materials used:** Copper and Ceramics

The design idea was based on the merging and blending of ceramics and metals in a harmonious framework characterized by the technique of fitting the parts with each other in harmony and compatibility among these materials and this played a major role in enriching the artwork through a sense of balance. The two researchers benefited from the integration of copper raw material that was treated with the technique of emptying and cutting to obtain a half of an Islamic star plate containing floral decorations that have been inlaid in addition to the blue ceramic part to approximate the properties of the material and this combination of compositional and color (matte) by a color contrast between the blue and the yellow in creating a homogeneous work that represents a chest necklace, and highlights the successful reciprocal relationship between the two materials together in one circular space. In the treatment of the shape, the two researchers adopted various technical methods of recessed, prominent, and emptying.



Design proposal No. (2)

Figure No. (10)

**Type:** Fit Hand Bracelet and Chest Pendant

**Size:** 10 cm (the sum of the diameters of the circles)

**Materials used:** Copper and Ceramics

The design idea here is based on the merging of copper raw material with ceramics, and the work consists of three repeated units of different sizes for the metal part inlaid with ceramics, and the metal part was designed in the form of geometric motifs and the decorations were treated with emptying technology, as for the ceramic part, glass oxides and coatings were applied in different colors, blue, black and yellow. The ceramic surface treatment depended on the method of variation in textures and the point which varied in sizes and varied in convergence and divergence. The two researchers tried to find the concept of harmony among the materials to find an integrated artistic work.



Design proposal No. (3)

Figure No. (11)

**Type:** Bracelet

**Size:** 3cm for the Main Unit

**Materialsused:** Copper and Ceramics

The idea of designing the bracelet depended on the combination of ceramic material with copper in the front part of the bracelet, and the metal part was designed in the shape of the octagram, and the decorations were treated with emptying technology, as for the ceramic part, it was treated with metallic luster technology to acquire colors tending to red, black and purple, and this combination of colors between the two materials, in addition to the formal convergence (circular) between the ceramic mold and the star plate helped to confirm unity and create a homogeneous work that played a major role in enriching the artistic work.



Design proposal No. (4)

Figure No. (12)

**Type:** Chest Pendant

**Size:** 8cm

**Materialsused:** Copper and Ceramics

The design idea consists of a combination of copper and ceramic materials, and the work consists of three units of different sizes that are grouped together in a longitudinal fashion. The metal part was designed inspired by the shape of a star plate that combines plant decoration and geometric decorations, and the decorations were treated with emptying technology, as for the ceramic part, it contains oxides and glass coatings in different colors blue and orange. The treatment of the ceramic surface is based on the method of variation in the textures, and we note that symmetrical balance was used in the artistic work, as these lines are symmetrical with each other around the horizontal and vertical axis.



Design proposal No. (5)

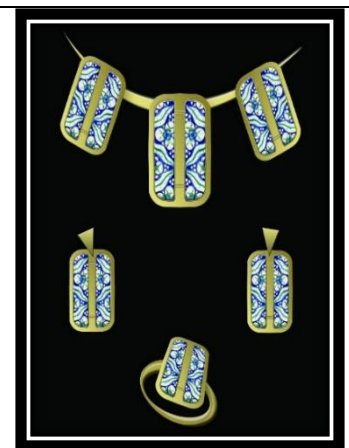
Figure No. (13)

**Type:** Chest Pendant, Ring and Earring Component Set

**Size:** Necklace 10 cm, Earring 3 cm

**Materialsused:** Copper and Ceramics

The work consisted of a set consisting of a necklace, ring and earring, and the two materials were combined with copper and ceramic. The metal part was done in the form of a frame, the ceramic part was used blue, black and green on a white ground, using various colors under the paint, and it contains plant decorations.



Design proposal No. (6)

Figure No. (14)

**Type:** Chest Pendant

**Materialsused:** Copper and Ceramics

In this design, the two researchers depended on the merging of ceramic with copper, and the pendant consisted of a group of units of different sizes and some copper units were designed on their own without merging, and the metal part was designed in the shape of the octagram, and the decorations were treated with emptying technology, while the ceramic part was treated with metallic luster to acquire colors tending to red, blue and green.



Design proposal No. (7)

Figure No. (15)

**Type:** Chest Pendant

**Size:** 7cm

**Materialsused:** Copper and Ceramics

The design idea consists of a combination of copper and ceramics, and the metal part was designed inspired by plant decorations and the technique of hollowing and hammering was used, while the ceramic part dealt with oxides and glazes in different colors, blue and red.



Design proposal No. (8)

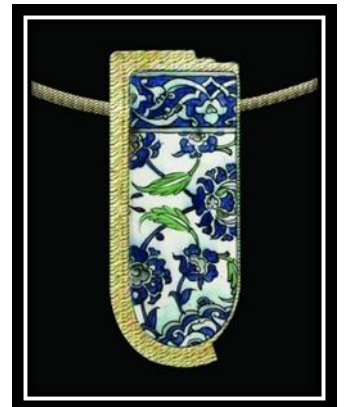
Figure No. (16)

**Type:** Chest Pendant

**Size:** 3 cm for the Base Unit

**Materialsused:** Copper and Ceramic

The design idea here was based on the combination of copper material with ceramics, and the metal part was executed in the form of an outlet frame with the method of hammering to create effects and sense on the metal frame, while the ceramic part contains plant decorations in which the blue, black and green colors appear on a white ground using multiple colors under the paint.



Design proposal No. (9)

Figure No. (17)

**Type:** Chest Pendant

**Size:** 12cm

**Materialsused:** Copper and Ceramic

The design idea here is based on the combination of copper raw material with ceramics, and the work consists of three repeated units of different sizes for the metal and ceramic parts, the metal part is designed in the form of decorations inspired by the plant decorations using the technique of emptying and bending the metal part, while the ceramic part appears in the form of oxides and glazes in different colors blue, black and gray, and the treatment of the ceramic surface was based on a variety of textures



Design proposal No. (10)

Figure No. (18)

**Type:** Bracelet

**Size:** 8cm

**Materialsused:** Copper and Ceramic

The design idea here was based on the combination of copper raw material with ceramics, and the metal part was done by emptying technique, while the ceramic part contains decorations applied using blue and yellow colors using metallic luster.



## Research Results

From the above, we can extract the results of the research as follows:

- Modern designs can be created for metal ceramic jewelry that combines originality with contemporary.
- Islamic decorations are important and rich sources of esthetic values
- Islamic decorations can be used as a source of design because of possessing unique symbolic connotations.
- Inspiration from Islamic decorations helps spread national awareness of the nation's heritage and gives modernity originality.

- The combination of ceramic and metal is suitable for creating jewelry designs with new and innovative visions while preserving the Islamic identity.
- Continuing to devise Islamic decorations in contemporary design in order to emphasize the cultural identity.
- The link between the design of jewelry and small artifacts, which helps in shaping production units for ceramic metal jewelry.

## Recommendations

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