

## The Aesthetic and functional integration of glass and metals in contemporary jewelry

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### Abstract:

Jewelry design is one of the oldest arts in history, as ancient humans used ornaments and jewelry as body adornment. The ancient Egyptian, Greek, and Roman civilizations crafted elaborate and artistically designed jewelry pieces, reflecting the history, culture, traditions, and social values of the people who made them. Glass is important materials, characterized by transparency, luster, shine, and smooth surfaces, which attract attention. Although metals have a shiny appearance, strength, and hardness, the contrast in the physical properties can be utilized in designing contemporary jewelry, the research area of interest. Research Problem: - Can the design integration of glass and metals enrich the field of jewelry aesthetically and functionally Research Objective: - The integration of glass and metals achieves aesthetic and functional integration that enriches the jewelry design, and the aesthetic and functional integration of the two materials opens up new horizons for creativity. Research hypothesis: The aesthetic and functional integration in jewelry design results in a contemporary trend that enriches the field of jewelry design. The research follows a descriptive and experimental approach, and the research theoretically examines glass and metals, their properties, and the impact of these properties on jewelry design. and how to achieve aesthetic and functional integration of glass and metal in contemporary jewelry design. Through the research study and applied experiments, the hypothesis was verified, and a set of results and recommendations were reached that support and achieve integration between glass and metal, emphasizing the importance of this integration. Jewelry has been associated with women since the beginning of their creation. Jewelry holds a special place for women because it is not merely a piece of adornment; it expresses a woman's personality, culture, elegance, and taste. Therefore, no woman is satisfied with owning a single piece of jewelry; rather, she always desires to own more than one piece of jewelry, which has aesthetic and functional value that lies in the design elements and materials of the jewelry, and which express the wearer's identity. The design and manufacture of jewelry encompasses many diverse elements, and therefore functional and aesthetic integration are essential factors that must be considered when designing jewelry.

**Problem:** Can the design integration of glass and metals enrich the field of jewelry aesthetically and functionally? How can the technical integration of glass and metals be used to create innovative jewelry designs?

**Objective:** To integrate metal and glass and study how these different materials relate in form and properties to a piece of jewelry that combines the dignity of metal and the strength of its function in preserving glass with the attractiveness of glass and the diversity of its appearance, colors, transparency, and opacity.

Methodology is descriptive and experimental. The research addresses the theoretical study of glass and metal materials, their properties, and the impact of these properties on jewelry design. It also examines the techniques used for glass jewelry, and how to achieve aesthetic and functional integration between glass and metal in contemporary jewelry design.

**Results:** Through the research study and practical applications of jewelry combining metal and glass, the following conclusions were reached: - Keeping pace with contemporary design trends that focus on authenticity, various glass production techniques, and metal technology are important tools for designers to contribute to the production of innovative ideas. - Choosing appropriate installation methods is one of the most important elements of the success of integrated glass and metal jewelry design. - Metal enables designers to create movable connections and links that add movement to jewelry, such as dangling earrings, giving them a dynamic feel that enhances their elegance and attracts attention. - Metal contributes to a balanced weight distribution of the glass, making the piece more comfortable to wear. - Designers should use glass with a thickness ranging from 3-5 mm and metal with a thickness ranging from 0.8 to 1.2 mm, taking

into account ergonomic aspects. - Through practical experiments, it was determined that metal thicknesses should be used. - Borosilicate glass is one of the best types of glass for jewelry due to its resistance to breakage and thermal shock. It is preferable to use both frame-mounting (semi-closed) and claw-mounting (open) methods with soda-lime glass to protect it from breakage and ensure structural protection.

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