

The golden ratio in the design of ceramic products

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Abstract:

This research sheds light on the importance of using mathematics represented in the golden ratio for the design of the ceramic product, as the research adopts the idea that organisms and plants grow and are shaped in nature through mathematical values in frameworks for geometric shapes or through mathematical equations and constants, and realizing those frameworks and equations. Then using it in the design of the ceramic product is supportive of the success of the design by consolidating its principles that design - considering that this approach in design is nothing but following the behavior of nature -, and this approach has been applied in the study of design, for quantitative industrial porcelain tile surfaces. As well as studying the design of the sanitary porcelain basin (face washbasin), through the course (sanitary porcelain 1), (sanitary porcelain 2), as well as the (quantitative porcelain tile design) course, and tracking the possibility of the availability of design principles such as balance, harmony, proportionality, interdependence, unity of design, as well as repetitive patterns and others. Using the golden ratio, and the ease that this ratio may offer in structuring the design while preserving the space for creativity and diversity in ideas and innovation for the designer, and by following the steps, and the results show the flexibility of this methodology and the consistency of its results with the values of successful design, and it can be said that it organizes ideas and facilitates the steps, especially for the novice designer. The research problem was whether the use of the golden ratio in the design of ceramics guarantees strong principles of design, and how to use the golden ratio in the design of the industrial porcelain product, and what are the design gains resulting from the use of the golden ratio in the design of ceramics, and how the golden ratio can be included in the academic study of design Ceramic, the research also aims to analyze the design principles and their relationship to the golden ratios, the methodology of using the golden ratios in the design of the ceramic product, and to monitor what the golden ratios offer of design values required for the ceramic product. Where the research assumes that the golden proportions in the design of the ceramic product gives the design an emphasis on many principles and elements, while confirming the privacy and uniqueness of the designer. The importance of the research lies in the inclusion of the golden ratio as one of the methodologies that can be adopted in the design of ceramics because it is a source of nature that represents the structural structure that nature pursues in growth and formation, which has been monitored in many organisms, and therefore it guarantees the basic principles of design such as balance, proportion, harmony, unity, and diversity. Patterns, and others logically with the availability of creative space for the designer. And the research approach took the analytical and experimental approach, by experimenting with some designs for some various ceramic products using digital design, and the analytical approach was used for the concept and uses of the golden ratios. The research reached a set of results, including the design methodology using the golden proportions as a guarantee of obtaining balance, proportionality, harmony, and other required design principles. Several recommendations have been put in place, including taking into account the inclusion of the golden ratio in the design of ceramic products to ensure the availability of basic design values, as well as the need to include the golden ratio in design courses for students of specialized colleges to train on and understand it well in order to master its use.

Keywords:

The golden ratio, Golden Grid, golden shapes

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