

## A Sustainable Design Vision for Upholstery Fabrics through Art Nouveau–Islamic Fusion

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### Abstract:

This study explores the integrative potential between Islamic art elements—including geometric, botanical, and calligraphic motifs—and the stylistic features of the Art Nouveau movement to develop sustainable designs for upholstery fabrics. The research is based on the hypothesis that a deliberate synthesis of both visual traditions can yield textile solutions that balance functional aesthetics, cultural identity, and environmental sustainability.

A dual-method approach was adopted, combining descriptive-analytical and experimental methodologies. The study analyzed the visual and philosophical characteristics of both styles, followed by the creation of seven digital design models that layered Islamic motifs with the organic, nature-inspired lines of Art Nouveau. Natural color palettes and modular elements were employed to reduce visual noise and support sustainable printing methods.

Findings demonstrated that Islamic motifs can be reconfigured into repeatable design modules without compromising their visual authenticity. When integrated with Art Nouveau's flowing aesthetics, the resulting textile designs were visually rich, adaptable, and environmentally conscious. The experimental work confirmed the designs' ability to minimize material waste and reinforce cultural identity in contemporary textile applications.

The study recommends developing hybrid digital ornament libraries and embedding cultural integration and sustainability principles into design education and industry practices, fostering a local yet globally relevant textile design approach.

**Research Problem:** This study addresses the following two questions: How can the Art Nouveau movement and elements of Islamic art be utilized to develop sustainable aesthetic designs for upholstery fabrics? How can artistic and visual elements be processed and adapted using specialized computer software to create sustainable color schemes and treatments for upholstery fabrics that combine Art Nouveau and Islamic art?

**Research Hypotheses:** The research assumes that there is an effective complementary relationship between Islamic art elements and Art Nouveau styles, enabling the creation of sustainable upholstery fabric designs that meet contemporary market needs for beauty and environmental consideration. Decorative units derived from both directions can be integrated into repeatable printing patterns without losing their symbolic or visual value. Employing digital design tools contributes to sustainability by reducing waste and enhancing visual diversity.

**Research Objectives:** Analyze the aesthetic and structural characteristics of both Islamic art and Art Nouveau to identify their shared values. Create fabric design models that apply this integration to achieve visual and functional sustainability. Explore the role of digital design software in developing sustainable decorative solutions based on heritage elements. Support cultural identity by reusing Islamic motifs in contemporary printed formats.

**Significance of the Research:** Offers a new design perspective linking Islamic-Arabic decorative heritage with Western artistic movements in a contemporary environmental context. Enhances awareness of the importance of integrating cultural elements into fabric design to support authenticity and sustainability. Opens practical avenues for using digital design as an effective medium to develop ornamentally sustainable textiles. Supports creative industries by providing executable models that can be produced locally with lower environmental cost.

**Research Delimitations:** Time Scope: Covers the Art Nouveau period (1890–1910) and selected stages of Islamic art from the Umayyad to Ottoman eras. Spatial Scope: Design applications focus on the design environment in the Arab Republic of Egypt. Subject Scope: The study is limited to upholstery fabric design using digital printing techniques.

**Research Methodology:** The research procedures rely on: Descriptive Method: Conducting a comparative study between Art Nouveau and Islamic art elements to determine their integration potential in upholstery

fabric design. Analytical Method: Analyzing elements from both Art Nouveau and Islamic art to identify shared aesthetic values and derive innovative design principles. Experimental Applied Method: Employed through the researcher's practical experimentation and creation of design models using digital software, focusing on the principle of sustainability.

## Paper History:

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## Keywords:

Upholstery Fabric Design, Art Nouveau, Islamic Art, Principle of Sustainability.

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