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## RESEARCH ON THE DETAIL DESIGN OF EVERYDAY OBJECTS APPLYING LEATHER ELEMENTS

SUN Hu<sup>1,2</sup>, RUBANKA Alla<sup>1</sup>

<sup>1</sup> Kyiv National University of Technologies and Design, Kyiv, Ukraine

<sup>2</sup> Shanxi University of Science&Technology, Xi'an, People's Republic of China  
**14344380@qq.com, rubanka.ai@knuetd.edu.ua**

*Leather elements have been used in everyday items since ancient times. In the design of these items, leather is used as one of the attributes of the product to provide the following functions: to protect the product and the user, to expand and improve the user experience and brand value, to enhance the design of everyday items using leather elements. It has been established that through the combination of materials, the difference in colors and textures and other design methods of leather elements applied to everyday items, it is possible to effectively improve their functional structure, increase recognition and uniqueness in the market.*

**Key words:** Design of everyday objects, Detailed Design, Leather Elements, Functional Details, Structural Fractals.

### INTRODUCTION

Material is an essential part of product design and a flexible element for designers. Leather, known for its softness, skin - friendliness, and durability, is widely used in product design across fashion, furniture, and everyday objects [1].

Details, which can affect the overall outcome, are relative in product design [2]. In terms of scale, they contrast with the large - scale overall form designed for functionality. Product detail design occurs after the overall form is roughly set and requires careful consideration even after sample finalization. In the final design stage, details are the main focus. Methodologically, it differs from overall form design, emphasizing design methods and designer experience more.

In design practice, form conveys function and design information. However, in products with homogeneous functionality and form, design information is mainly transmitted through details. Subtle, aesthetic, and original details can attract and engage users.

### PURPOSE

This study explores the design methods and functions of leather elements in the detailing of everyday objects, summarize the detailed design entry points of everyday objects applying leather elements. Leather elements play a crucial role in communicating brand image, market positioning, quality, and characteristics in daily - use products.

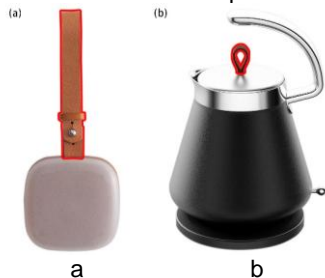
### RESULTS AND DISCUSSION

1. The starting point for designing everyday objects



In everyday objects, minimalist design is popular. Many companies use material research and innovation to differentiate products. Simplistic designs often vary materials in different functional and structural areas to create meaningful designs.

A product's functions are achieved through visible and internal parts. The functional area offers space for aesthetic detail design, including switches, keys, slots, etc. Designers often use leather elements here, shaping them differently from other components to clarify the product structure [3]. For example, in Figure 1, leather on the handheld part of daily essentials is more skin-friendly than metal or plastic and makes the product more recognizable.



**Fig.1.** Everyday Objects case: a - OVLAE camping light, b - ORIGIN kettle

Structural morphology affects the appearance and construction of everyday objects. Designers need to adjust mold structure composition, including color, material, and texture, to make products more refined, ergonomic, and in line with design intent. The structure of everyday objects also has two forms: common structure/demolding lines (like in the LEMANOOSH mouse in Figure 2, where the demolding line divides the shell) and face connections/transitions (like in the Fujifilm camera body in Figure 2, where different materials connect). Structure folds are visually prominent, and using leather elements here enhances differentiation. In the LEMANOOSH mouse, the brushed leather upper shell and smooth metal bottom shell create a harmonious design. In the Fujifilm camera, the front's function and grip areas have different features.



**Fig.2** Everyday Objects case: a - LEMANOOSH mouse, b - Fuji camera

## 2. The functions of Leather Elements in Everyday Objects Detail Design.

Leather, renowned for its durability, comfort, and elasticity, provides protection for products and users alike, enhances structural integrity, and supports various functional components. As such, incorporating leather elements into everyday objects as details becomes an innovative choice in design [2]. Designers



choose corresponding physical properties of leather elements based on the overall functionality and detail requirements of everyday objects. For instance, genuine leather feels soft and gentle to the touch, offering enhanced skin contact, thus enhancing user comfort when applied to surfaces that come into contact with the user; pu-leather is water-resistant, effectively guarding the internal structure of everyday objects from moisture, making it ideal for items frequently exposed to water or humid environments; PVC leather boasts strong resilience, maintaining its shine over time, hence commonly utilized in items subjected to significant friction or pressure.

In detail design, functionality is enhanced and refined within the framework of basic function, and aesthetics and perception are further improved to create a better user experience during use. Therefore, designers need to understand consumer operations and behavior habits to provide precise details services that enhance user experiences. Buttons, knobs, handles, screens, and other details on everyday objects belong to the user experience, forming an integral part of the operating area. Hence, the selection of materials affects the user's experience, with leather elements in everyday objects detail design adding to their usability and comfort, thereby enhancing user experiences.

The key to detailed everyday objects design is to convey the design concept and brand image, influence consumer feelings, and meet psychological needs. Leather can enhance brand image through color and texture, increasing the consumption value of everyday objects. From the brand - image perspective, leather's luster and texture show elegance. It can also carry brand logos and protect brand interests.

### 3. Applying leather elements in everyday objects design methodology.

Details are part of the whole. Designers follow principles: Firstly, details should rest on a solid overall design; secondly, all design details should remain consistent with the final design; thirdly, emphasize the subtle relationships and balanced details between them; and fourthly, for details within details, a certain degree of balance should be struck to meet users' core needs, paying attention to controlling their extent [4].

In detail design, diverse materials are intermingled in everyday items to create varying visual effects, for these materials possess unique "personalities" that convey distinct design concepts. Leather surface treatments include embossing, sandblasting, oil tanning, and coating, which exhibit differing textures and sheen, providing a rich visual and tactile experience, thereby enhancing the intricacy of design elements and enabling designers, often choosing different leathers based on design concepts, to showcase tens of thousands of varied styles. As protein fiber material, leather undergoes a complex physicochemical dyeing process, resulting in vibrant colors and improving leather's UV resistance through judicious selection of dyes. Designers ensure consistency by opting for leather colors consistent with the properties of everyday items.

### **CONCLUSIONS**

Leather elements predominantly serve as functional and structural elements for everyday objects, enriching or improving their design details in multiple aspects



such as functional structure, usability, brand value, and aesthetic beauty. This approach caters to the quality requirements of the times, ensuring that everyday objects meet evolving standards. In the design details of everyday objects, the application of leather elements effectively conveys the semantic essence of the product, emphasizes its functional structure, realizes an aesthetic expansion of brand connotations, enhances users' experience, and thus boosts the consumption of everyday objects. Leather elements are mainly used in the detail function and structure fractal of everyday objects, which can enrich or improve the detail design of everyday objects from multiple angles such as functional structure, use operation, brand value and artistic aesthetics, which meets the quality requirements of everyday objects under the development of the times. In the detail design of everyday objects, the application of leather elements can effectively express the semantics of the product, emphasize the functional structure, realize the aesthetic expansion of the brand connotation, and improve the user's feeling of use, enhance the use value of everyday objects, so as to promote consumption.

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**СУНЬ Ху, РУБАНКА А.**

#### **ДОСЛІДЖЕННЯ ДИЗАЙНУ ПРЕДМЕТІВ ПОВСЯКДЕННОГО ВЖИТКУ ІЗ ЗАСТОСУВАННЯМ ШКІРЯНИХ ЕЛЕМЕНТІВ**

*Шкіряні елементи застосовуються в предметах повсякденного вжитку з давніх часів. В дизайні цих предметів шкіру використовують як один з атрибутів товару для забезпечення наступних функцій: захисту продукту та користувача, задля розширення та покращення користувацького досвіду і цінності бренду, посилення дизайну повсякденних предметів із застосуванням шкіряних елементів. Встановлено, що завдяки поєднанню матеріалів, різниці кольорів і фактур та іншим методам дизайну шкіряних елементів, що застосовуються до предметів повсякденного вжитку, можна ефективно вдосконалити їх функціональну структуру, підвищити впізнаваність та унікальність на ринку.*

**Ключові слова:** *Дизайн предметів повсякденного вжитку, предметний дизайн, шкіряні елементи, функціональні деталі, структурні фрактали.*