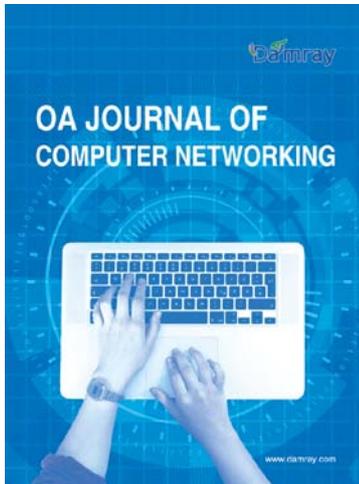


# The Development Status and Trend of Computer Aided Industrial Design Technology



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**OPEN ACCESS**

**DOI:**

**Received:** June 30, 2022

**Accepted:** July 26, 2022

**Published:** August 29, 2022

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## Abstract

Under the new situation, in the course of the development of the strategic action of "Made in China 2025", modern industrial design presents a comprehensive and diversified development trend. Computer-aided industrial design, relying on computer technology, implements the transformation towards the direction of "intelligent manufacturing", mainly to improve the scientificity and reliability of product design. In order to better enable China's manufacturing to the world stage, then it is necessary to explore the current and offer suggestions for the future. Therefore, this article first puts forward the main content to be explored, and then, combined with the current status quo, analyzes the future development trend, in order to make correct judgments and choices, and promote the sustainable development of computer-aided industrial design.

## Keywords

Computer Aided, Industrial Design Technology, Development Status

## 1. Reflections

The progress of the times always corresponds to the rapid development of science and technology, and goes hand in hand. With the widespread use of computer technology, the development of computer technology has injected fresh "blood" into various fields, and the degree of reliance on computers among industries has become more and more obvious [1]. Industrial products have been extended from traditional mechanical products to mechatronics products, and the technical content has been greatly improved. The change of social consumption concept, not a single product function is the main factor for consumers to decide to buy. Today, when the competitiveness of industrial products is fierce, factors such as product innovation and appearance, environmental protection, and pleasantness have gradually become one of the reasons for everyone to buy, and they are developing towards the trend of diversification. After the organic

combination of industrial design and computer technology, it not only improves the quality and efficiency of design, but also extends to the fields of ergonomics and fuzzy technology to a large extent, so as to meet the needs of people at different levels [2]. After the perfect integration, industrial design products can be more in line with aesthetic principles, and maintain a personalized design path to meet the summary of color, shape and other aspects. In view of this, how to use the advantages of computer-aided industrial design technology development to further innovate and optimize? What is the status of the application? What is the trend? It has become the main problem and content that many scholars need to explore under the current situation.

## **2. Development status of computer-aided industrial design technology**

### **2.1. Application of high technology**

Compared with traditional industrial design, the combination of industrial design system and computer not only improves the quality and efficiency of industrial design, but also optimizes the method of industrial design to a large extent. The most important thing in the field of industrial design is innovation. Innovation is a difficult problem for industrial design. If you want to gain the core competitiveness of the market, you need to adhere to the main idea of the scientific concept of development, and effectively innovate and innovate industrial production products. The content can be innovation in process materials, or innovation in shape and function... From the current form, the field of computer-aided industrial design needs to organically integrate new and old technologies, and use virtual technology as the foundation, maintaining efficient construction of agile design and virtual design [3]. The development of the design system can be driven by virtual reality technology to maintain the overall development of the design structure and shape, and gradually gain the unanimous approval of the public. Virtual reality technology can use different design methods, combine control factors and computer graphics system design, and achieve the main realm of interaction and immersion, bring different visual perception to the audience, and provide more information for future development. a lot of convenience. In the current situation, virtual reality technology will be used in the fields of geological disasters, tourism teaching, restoration of historical sites, and industrial simulation. On the basis of refinement, you can also see that the working model of industrial design is also using this collaborative development method to deeply understand the shape of the product and maintain functional construction.

### **2.2. Application of intelligent technology**

"Made in China 2025" has clearly pointed out that it is necessary to "promote the intelligentization of the manufacturing process". That is to say, to speed up the pace of human-computer interaction, intelligent manufacturing is the general trend of the future manufacturing industry [4]. In the process of computer integration construction, artificial intelligence technology and industrial design have been integrated with each other, and have evolved towards creative thinking implementation. On the basis of human-computer interaction, find suitable creative thinking, effective design methods, innovative development and construction. In addition, it also requires a creative process at home, based on reality, skillfully analyzes this process, explores complex craft projects, and establishes the characteristic elements and principles of processing through formal description through prior observation. In other words, relevant personnel are needed, adhering to the main idea of the Scientific Outlook on Development, constantly enriching their own knowledge, thinking, and experience, and in the path of research technology, to maximize the soul of artificial intelligence and maintain sustainable development. The development path will lay a good foundation for the future integration of intelligent technology.

### **2.3. Application of Computer Aided Modeling Technology**

In the process of practice, in the process of computer-aided modeling design, not only the sketch design can be completed, but also the corresponding free-form surface design can be completed. In essence, product modeling itself is everyone's cognition of industrial design products, and it can be combined with this kind of thinking logic to find the corresponding commercial value. What the modeling technology needs before it is completed is the sketch design, and these are all realized with the aid of computers. The reconstruction of sketches and the construction of human-computer interaction provide the driving force for the development of free-form surface design, and realize the process construction of dynamic features, collusion graphics, basic surfaces, etc., and maintain the popularity and attention of the market.

## **3. Development Trend of Computer Aided Industrial Design Technology**

In the current thinking logic, the understanding of the core value of products in the industrial production fields that do

not pass is not the same, but the concept of product design needs to be combined with development. Engineering design needs to be combined with reality, reasonably adjust the relationship between design function and design form, and put people first, on the basis of human-computer interaction, and increase the intensity of integration. In addition, it is also necessary to implement development in the direction of green, new energy, and new materials on the basis of market demand, maintain the power of science, and demonstrate the value of industrial design. In addition, industrial design also needs to establish unconventional effect construction, and implement the transformation from the perspective of innovation and invention, so as to provide a broader development space for future development. First, the development trend of human-computer interaction, that is to say, it is necessary to realize the function of human-computer interaction on the basis of the emerging VR technology, so as to bring a more realistic product experience to the audience. Second, the development trend of life cycle, collaboration and parallelism, that is to say, it is necessary to analyze the cost of product manufacturing and technology on the basis of independent thinking, explore the whole life cycle, maintain scientific thinking logic, and find solutions for coordinated development. Logical corner points [5-8]. Third, the development trend of intelligent technology needs to increase the use of intelligent technology in industrial design, and realize the effective construction of intelligent integrated design with people as the core and human-machine integration. Fourth, the trend of design innovation can effectively make the demand for products more personalized, and maintain the development direction of design. Fifth, both design methods and technological development need to actively maintain a precise product development direction in the design process, recognize the important value of technology, and implement development of high-end technologies such as human-computer interaction, the development of the path of implementation.

#### 4. Conclusion

With the progress of society, since the implementation of "Made in China 2025", computer-aided industrial design also needs to clearly define the current status and recognize the future development trend. We should find the right entry point for bold innovation, and follow the trend to meet the needs of the public. When designing products, we should establish a diversified development path in the direction of networking, digitalization and intelligence, and unite industrial designers and engineering designers to enhance the comprehensive competitiveness of industrial enterprises so that the sustainable and healthy development of industrial design will be realized.

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