

PAPER • OPEN ACCESS

Multimedia Image Technology and Computer Aided Manufacturing Engineering Analysis

To cite this article: Song Nan 2018 *IOP Conf. Ser.: Mater. Sci. Eng.* **317** 012046

View the [article online](#) for updates and enhancements.

You may also like

- [Research on Online Platform of Multimedia Teaching Based on Network Engineering](#)
Xiaoxu Chen and Nan Li
- [Advantages of Multimedia Network Teaching in Ice and Snow Sports Education in Higher Vocational Colleges](#)
Huolong Bi, Zhenwei Gu and Diangang Liu
- [Application of multimedia image technology in engineering report demonstration system](#)
Jiang Lili



ECS
The
Electrochemical
Society
Advancing solid state &
electrochemical science & technology

DISCOVER
how sustainability
intersects with
electrochemistry & solid
state science research

Multimedia Image Technology and Computer Aided Manufacturing Engineering Analysis

Song Nan¹

¹College of Arts and Media in Shenyang Institute of Technology 113122

Abstract. Since the reform and opening up, with the continuous development of science and technology in China, more and more advanced science and technology have emerged under the trend of diversification. Multimedia imaging technology, for example, has a significant and positive impact on computer aided manufacturing engineering in China. From the perspective of scientific and technological advancement and development, the multimedia image technology has a very positive influence on the application and development of computer-aided manufacturing engineering, whether in function or function play. Therefore, this paper mainly starts from the concept of multimedia image technology to analyze the application of multimedia image technology in computer aided manufacturing engineering.

1. Introduction

In the new period of increasingly advanced science and technology, multimedia video technology generally appears in the public perspective, it can be said that in the new era of socialist modernization, multimedia image technology becomes more and more important. So what kind of high-tech technology is the multimedia system? In short, the normal operation and development of the multimedia system is done with the help of the computer, it has comprehensive and integrated treatment of text, language, music and picture, etc. by the medium of computer, which greatly improves the quality of life and the level of people's lives [1]. Therefore, the better research on multimedia imaging technology has the positive significance of improving the quality and quality of the computer aided manufacturing engineering in China.

1.1. Conceptual analysis of multimedia image technology and computer-aided manufacturing engineering

There is a great correlation between multimedia image technology and computer aided manufacturing engineering. To explore and analyse the application of multimedia image technology in computer aided manufacturing engineering, the first thing is to have a careful grasp of the concept of multimedia image technology and computer aided manufacturing engineering.

1.1.1. The concept of multimedia image technology. Multimedia imaging technology, in a nutshell, is included in the multimedia system. The basic principle of its operation and working process is that the comprehensive processing of information such as text, graphics, image, sound, animation, video, etc by the medium of computer, and establishing a logical relationship based on its inherent relationship and characteristics, in order to maximize the human-machine interaction. For example, in most schools today, every classroom basically has a multimedia system, teachers use the basic systems for lessons and use the courseware PPT slides, video and other forms for display, which is the simple application of the typical multimedia image technology in real life. It is noteworthy that the real multimedia technology involves the creation of computer technology, and other simple things, such as movies, TV



and acoustics, do not belong to the category of multimedia technology [2]. Therefore, it is important to take a detailed grasp of multimedia image technology to make better use of it, in order to promote the progress and development of computer aided engineering field and multimedia imaging technology in China.

1.1.2. Function introduction of multimedia image technology. Only understanding the concept of multimedia image technology and its function, can give full play to its inherent advantages and promote the development of productivity. Specifically, multimedia image technology has many functions under the guidance of multimedia system. First, from the angle of audio reception, it can receive and further store the audio files of audio microphones or other systems. Second, from the perspective of image transmission and preservation, it can receive, process and further store images of scanners or other systems. Third, from the perspective of the movement TV signal, it can search, receive and further store the movement TV signal to a maximum extent. Fourth, from the perspective of integrated information processing, it can comprehensively process and integrate the moving video, the audio information and the video information to make their information more logical and relevant. Fifth, from the perspective of text, graphics, sound, etc., the new media imaging technology can integrate the information of the three and realize full synchronization playing, for example, when we watch a movie in a movie theater, there is the combination of subtitles, sound and video. The function of the sixth aspect is mainly reflected in the animation aspect, which can make and play the animation, such as the cartoons we have saw in the market. The function of the seventh aspect mainly focuses on the input and output of external devices such as compact disc and video tape, which can transmit information about video, audio, image and so on by using them. For example, now many teachers copy the courseware to the U disk, then copies the courseware to specific playing equipment through its connection with multimedia equipment, which is a good show of making full use of its function.

1.1.3. The characteristics of the multimedia image technology

The multimedia image technology that based on the high and new science and technology has many characteristics and advantages in the process of concrete use and display. First, for the multimedia image technology, its storage of information is very large, which has great breakthrough compared with the traditional information storage technology. Second, it can be fully realized the functions of real-time push and display under the technical support, that is to say, the real-time sharing of information is very good. For instance, enterprises in the process of the meeting can use multimedia technology to display the content of the meeting, and some of the latest information related to the meeting can also realize real-time transfer to each other, which greatly improves the efficiency and save the cost of the meeting. Third, the multimedia image technology in the digital era can be directly supplemented in the process of information replenishment. Fourth, from the point of view of space, it takes small space, which is advantageous to the conference, exhibition, etc. Fifth, the multimedia image technology has a strong interactivity, in other words, the user and the machine is a relationship of mutual choice, users can choose their own favorite video, which gives full play to the subjective initiative of people.

1.1.4. Conceptual introduction of computer-aided manufacturing engineering. Computer-aided manufacturing engineering is a broad concept of engineering. Specifically, it needs to be on the basis of the computer aided software to conduct a comprehensive design and development of its content, and in the process of design and development, depending on the degree of demand and the application of specific software products to adjust their work. Therefore, in general, computer-aided manufacturing engineering is a software design and development project relying on computer technology, which plays a huge role in real life.

2. Application research of multimedia image technology in computer aided manufacturing engineering

2.1. Application research of multimedia image technology based on CAD/CAM engineering education

With the continuous development of our socialist modernization construction, the development of education and training industry is more and more quickly, the application of multimedia technology is becoming more and more popular, which is developing towards the direction of more and more mature. In the process of specific training education, the project models that generated by multimedia image technology are often used to present course information. Multimedia technology under the image system is particularly suitable for engineering education of CAD / CAM, the reason is that in the process of specific training education, the course information and content are complex, there are not only some the pictures, video need to show, but also some complex operation method, etc. Therefore, in the process of CAD/CAM engineering education, we should make full use of multimedia education system to complete the education of theoretical knowledge and practical to promote the further development of CAD/CAM engineering education in China.

2.2. Application research of multimedia image technology based on product sales

For product sales, multimedia image technology is an important link in engineering manufacture, in the process of specific product sales, multimedia image technology can make a system analysis for the market demand, product after-sales of manufacturing engineering, which has a positive significance for promote the production quality and level. In the process of its concrete operation, depending on the specific multimedia technology to select product sales system, under the system, the factors such as user demand, market competition can be comprehensively counted, on this basis, the enterprise can be targeted to do product sales plan, which greatly reduce the risk of market competition, improve the degree of targeted product sales.

2.3. Application research of multimedia image technology based on touch technology

Under the development trend of diversification, multimedia technology not only has wide application in the CAD/CAM engineering education, product sales, but also has very big development space in touch technology. In particular, touch technology is actually an important part of multimedia technology, its core content is to use the touch screen to input and analyze their specific information [3]. The screen of touch technology, users simply click on the screen, and then choose the services they need, they can complete the basic operation. For example, at the information age today, almost everyone has a smart phone, which is the result of make full use of multimedia image technology. Therefore, the combination of multimedia technology and touch technology has improved the level of modernization of our country, and it also plays a big role of promoting economic development and social progress.

2.4. Application research of multimedia image technology based on engineering document management

For specific computer engineering, the basic file management is very important, in the process of enterprise production and management, there will be large amounts of information and data, for example, in the electric power enterprise's file, it will contain basic employee information, financial information, and the power equipment information, etc. So the information integration work of data and documents is very important. In this case, some computer engineers use of multimedia video technology development and design with a special file management system, under the system, it can not only classify the information, but also can systematically save the images, video and so on. When users viewing the file, they can search according to the specific requirements, which greatly improve the efficiency of file management.

2.5. Application research of multimedia image technology based on dynamic engineering

In addition to the operations of saving, transferring pictures, videos, and so on, the application of multimedia technology in the field of computer aided engineering, dynamic engineering has great

advantages. Dynamic engineering is to rely on a certain system, such as CAD graphics, data information automatically generates dynamic images and the cartoon that is currently on the market is a good example. Advanced multimedia animation technology not only can be in the form of animation display images, can also reflect quality and fluency of animation video to the greatest extent [4].

2.6 Application research of multimedia image technology based on CAD/CAE engineering

Under the multimedia system of engineering products, with the increasing of user demand and market competition factors, CAD/CAE engineering gradually appear in the public's view, and, in the actual operation process, computer engineers have developed different system for different users. CDI company, for example, has developed a special computer system according to the demand of itself, under this system, it can realize the setup of graphics and entity model, then on this basis, comprehensive data analysis is carried out on the information, data, etc. Therefore, the application of multimedia technology system based on CAD/CAE engineering has a great positive significance of the development of new products and the adaption of the new demand.

3. Conclusion

In the fierce market competition, science and technology more and more become a powerful competitive factors. In recent years, the multimedia image technology is widely used in computer aided manufacturing engineering, which provides a great convenience for engineering design and development. Therefore, we should attach great importance to multimedia video technology and give full application of it.

References

- [1] Lv Y M 2010 *Mod. Propert. (Middle periodical)*, **9(04)** 43-44 + 71.
- [2] He F 2013 *Application research of multimedia image technology in engineering machinery display design*. Hunan University.
- [3] Sun X Y 2008 *The invasion of multimedia image technology*. Shanghai Theater Academy.
- [4] Dai Y, Li T, Hu D M 2000 *J. Anhui Radio & TV Univ.* **1** 86-91.