

## Платформа 3

### Інформаційні технології та інновації в текстильній та фешн-індустріях

UDC  
687.03

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## 3D DESIGN OF COMPRESSION CLOTHING

**Purpose.** The purpose of this work is to investigate and identify the most effective existing computer technologies.

**Keywords:** 2D and 3D programs, wetsuit, compression.

**Objectives.** The objective of this study is to analyze existing 3D programs and their effectiveness. Technological advances have been shaped throughout history: the first industrial revolution was the production of clothing using steam and water energy; the second revolution was the acceleration of clothing production due to electricity; the third revolution concerns the use of electronics and information technology in clothing. The fourth, called "Industry 4.0" contributes to the formation of the fashion industry through the development of digital technologies, cyber-physical spaces, the Internet, computing tools, personalization, localization, computer design, etc. [1].

To date, there are a number of programs that are used in the virtual design of 3D modeling. They include: 3ds max, Maya, CLO, OptiTex, Vidya, Marvelous Designer, Tinkercad, Master Control 2.0., ZBrushCoreMini, etc.

In addition, there are programs for designing 2D models, such as Coreldraw, Assyst, Lectra, Gerber, AccuMark, Richpeace, BUYI ET, Modasoft, Auto CAD, etc [2].

**Methodology.** Using the analytical method, it was revealed that in recent years the international application of modeling technology in the field of clothing mainly concerns inelastic loose clothing, which focuses on a single research area, simple design and demonstration of the characteristics of virtual fitting using software [3]. Many simulation studies do not pay attention to the characteristics of the properties of the clothing material. Similar studies were performed for tight clothing, men's compression suit.

**Research results.** Figure 1 shows fragments of some studies of the three-dimensional design of wetsuits. For 3D modeling of a wetsuit, M.M.Naglik

scanned bodies in six poses, such as raising his arms and squatting, and developed a virtual wetsuit using Optitex software (Fig. 1a). T.H. Stahl used CLO software to check the compliance and deformation of the material of a men's wetsuit, but did not propose a scheme for its optimization and comfort ratings for the pattern (fig. 1b).

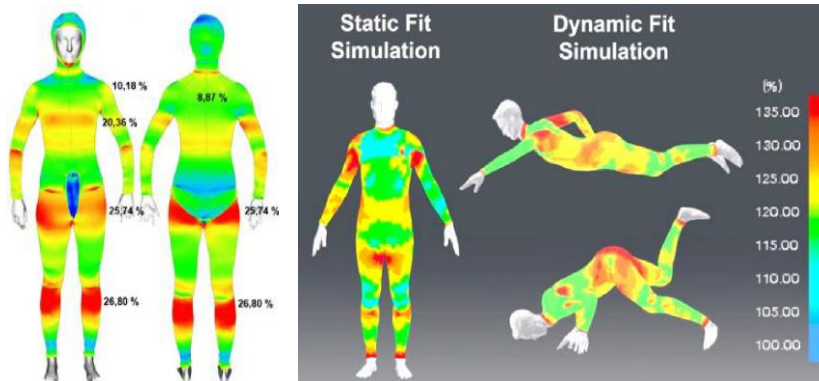


Fig. 1. Testing of a virtual wetsuit:  
 a – digital deformation; b – color deformation

**Conclusion.** Modern 2D and 3D programs have been studied, which can facilitate the contactless development of various types of suits, having only initial data.

### References

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