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Revolutionary applications of smart textiles: from shoe #choose to medical optical fibers: a case study of BLUEGRioT's innovations

Abstract

This article explores the innovative use of smart textiles in various industries, focusing on the contributions of BLUEGRioT and Brochier Technologies. It highlights key products like the #choose connected shoe, medical applications of optical fiber textiles, and the Fusio Watch, demonstrating the versatility and impact of smart textiles.

Keywords: smart textiles, BLUEGRioT, brochier technologies, connected shoe, medical textiles, optical fiber, Fusio watch

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Maeva Demazeux, Rudy Houque
BlueGriot Team, France

Correspondence: Maeva Demazeux, member of the BlueGriot Team, BLUEGRIOT, 147 Avenue Pierre Mauroy, 59120 LOOS, France, Email mdemazeu@bluegriot.com

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Introduction

The revival of the textile industry in northern France, with a particular focus on smart textiles, is embodied by innovative companies such as BLUEGRioT, Brochier Technologies and PHOCEIS. This article examines their pioneering work in the field of connected objects, highlighting the collaboration between BLUEGRioT and Brochier Technologies to integrate fiber optic textiles into various products. In addition, it highlights the crucial role of PHOCEIS in the development of mobile applications and digital solutions for these textiles, enriching the user experience and expanding the application possibilities of this revolutionary technology (Figure 1).[1]

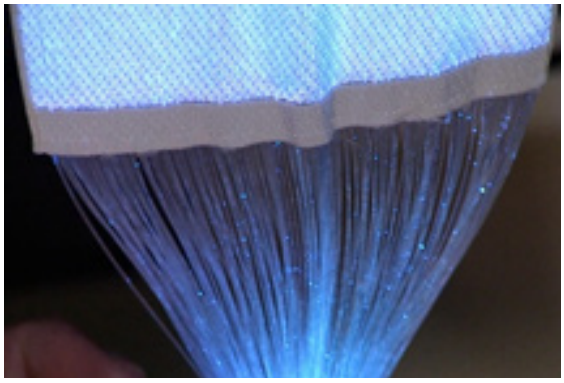

Figure 1 Fiber optic textiles.

Materials and methods

For the shoe ERAM BLUEGRIOT has developed a connected shoe using integrated optical fibers, allowing color customization via a mobile application. This concept offers instant adaptation to the user's style, incorporating a battery and smartphone connectivity. This symbolizes a fusion of technology and style for a modern and flexible expression of fashion.

For the creation of these projects, we followed a precise methodology.

Research and developpement

This phase is crucial to understand the materials, technologies and manufacturing methods required. It includes exploring new textiles, integrating technology into fibres and developing prototypes.

Design thinking

This user-centric approach helps to understand the needs and desires of consumers. It involves rapid prototyping iterations, testing and feedback to refine the product concept.

Software and application development

For the connected shoe, the development of a compatible mobile application is necessary. This includes programming, user interface design, and hardware integration.

Testing and quality assurance

Testing is essential to ensure the product is functional, comfortable and safe. This may include wear tests, fiber optic performance tests and application interaction tests.

User and iteration feedback

After launch, collect user feedback for continuous product improvement. For the design and the materials used it is also careful choices

Wireless connectivity

To enable communication with external devices (such as a smartphone in the case of connected shoes and the BLUEGRIOT FUSIO Watch), smart textiles often incorporate Bluetooth or Wi-Fi capabilities. This allows you to control textile features (such as color or data tracking) from a mobile app (Figure 2).[2]

Figure 2 Smartphone in the case of connected shoes and the BLUEGRIOT Fusio watch.

User-centric design

The design of smart textiles requires a user-centric approach, taking into account comfort, aesthetics, functionality and ease of use. This often involves testing and iterations to find the right balance between technology and practicality.

To talk about the results, #Choose by Eram is recognized as the first smart shoe whose color can be changed via a mobile app, The shoe was presented at the Consumer Electronics Show (CES) in Las Vegas in 2016, highlighting the collaboration between Eram and the start-up BLUEGRIOT in its development it was a great success worldwide, being exhibited in Paris, Las Vegas and Shanghai (Figure 3).[3]

Figure 3 Smart shoe whose color can be changed via a mobile app.

These products illustrate the intersection of technology, aesthetics and individuality in the field of connected textiles, highlighting innovation and creativity in design and functionality.

The implications of these innovations in transforming consumer experiences, medical treatments, and the broader impact on related industries. Smart textiles represent a significant shift in traditional industries, melding the realms of technology and craftsmanship. Companies like BLUEGRioT, Brochier Technologies and PHOCEIS are at the forefront, redefining industries like fashion and healthcare. Their innovations illustrate a transition from conventional methods to cutting-edge, tech-infused solutions, showcasing a blend of heritage and modernity. This transformative approach is reinventing industries, making them more adaptive, responsive, and attuned to contemporary needs and environmental concerns.

Conclusion

To conclude the future potential of smart textiles extends far beyond current applications. As technology advances, these textiles could lead to even more innovative solutions, like garments with enhanced interactive capabilities or healthcare fabrics capable of more complex diagnostics and treatment. The integration of AI and IoT with smart textiles could lead to garments that not only respond to environmental changes but also predict and adapt to user needs in real-time. This evolving landscape opens up possibilities for smarter urban environments, responsive architecture, and a new wave of personalized, technology-enhanced lifestyle products, signifying a future where textiles are not just for wearing or use but are integral to the very fabric of daily life and environmental interaction.

Acknowledgments

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None.

Conflicts of interest

Authors declare that there is no conflict of interest.

References

1. Brochier technologies' optical fiber textiles in medical applications.
2. BLUEGRioT's #choose connected shoe for ERAM.
3. BLUEGRioT's Fusio watch.