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Developing an electronic system to improve the circular weft knitting machines production quality

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Abstract:

The manufacture of knitted fabrics has developed in the world a great development, especially in recent years until it has become a competition for woven fabrics on a large scale, and knitted fabrics have spread rapidly in the modern era in various fields not only in the field of traditional clothing, but also into industrial uses and furnishings Household, sports, medical, and other uses as a result of the many properties and features of these fabrics. By studying the factors that lead to the prosperity of this industry, it becomes clear that they are many factors, the most important of which is the use of synthetic fibers, and the development of the properties of natural yarns, with the consumer accepting knitting products of all kinds on the basis that they are in line with fashion and give comfort in terms of flexibility and good suitability for final use along with cheap prices for low production costs. Methods of inspection and monitoring of defects in most of the knitting factories Objectives: To raise the level of the quality of our products and reducing cost by applying modern technological methods and systems to control the quality of products during operation by using specialized computer programs. **Importance of the study** is due to the control of all production variables and the settings of the circular knitting machine during operation with the development of machines to control machines to raise their efficiency and accuracy and the use of computer applications to detect defects with high accuracy and treatment during operation, which leads to a stable, non-fluctuating performance and achieves the required quality level while reducing cost . **Results**: A monitoring system was designed through cameras installed on circular weft knitting machines during operation and by using specialized computer programs we were able to discover defects and examine and classify them during operation, which led to a stable, non-fluctuating performance that achieved the required quality level while reducing cost. **This study has managed to** develop the control devices on the circular knitting machine during operation to raise its efficiency and accuracy and the use of computer applications to ensure high quality production while improving the quality of fabrics produced on the circular knitting machines while reducing the cost to be able to compete in the markets.

Keywords

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