**Embroidery on Textiles as a Smart Solution for Wearable Applications.**

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| The research was conducted to evaluate the impact of the fabrication parameters such as using different types and length stitches of conductive yarns on the performance of embroidered fibers which could be applied as smart wearable clothes. Nickel Conductive yarn was used, which embroidered in straight and zigzag stitch types with different length of stitch and 1, 2 and 3 lines of threads. The obtained resulted showed that the lowest value of \( R(\Omega) \) was 1.24 \( \Omega \) with straight stitch types with 3 lines of threads with 5mm of stitch length, the number of stitches lines of thread influences on resistance mean values as 2.721\( \Omega \), 2.54\( \Omega \) and 2.31\( \Omega \) for the 1, 2 and 3 lines of threads respectively. Means of \( R(\Omega) \) were 1.83, 2.03 and 2.80\( \Omega \) of the length of stitches 3 mm, 5mm and 7 mm significant respectively. The nickel conductive yarn could be embroidered on a prototype T-shirt to be a connector between the temperature sensor and screen. This embedded system based on conductive thread could find possible application in medical applications. | **Paper received**  
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