CB ink in E-textile applications

OBJECTIVE: -

- To demonstrate a demonstrate a simple, highly scalable and cost-effective fabrication process of functional carbon black (CB) ink from burned charcoal of dry woods.
- Further the application of this CB coated textile fabrics as a bend sensor as well as a heat-spreading material will be discussed

ABSTRACT: - E-textiles, also known as electronic textiles, are fabrics that can function electrically as electronics and behave physically as textiles which enable computing, digital components and electronics to be embedded in them. Part of the development of wearable technology, they are referred to as intelligent clothing or smart clothing that allow for the incorporation of built-in technological elements in everyday textiles and clothes..

EXECUTION: -

- The various steps involved in the fabrication of CB and further it's coating onto the fabric will be demonstrated in detail.

LEARNING OUTCOMES: -

- Introduction to the field of E-textiles, and their future applications.
- Getting familiar with the fabrication process for CB ink.

MERITS AND DEMERITS:-

- The CB treated fabric demonstrate excellent electrical and mechanical properties
- Very high stability, repeatability and a quick response for thermal fabric applications.
- Excellent flexibility and stretchability.
- A promising candidate for low-cost wearable, flexible, and stretchable heaters.
- A lot of further improvements are necessary until mass production.

BENEFITS:

- Electrically conductive textiles with light weight and flexibility to meet the applications in wearable electronics.