

adoption.

- Does not cover the entire journey from the field to the ginning process.
- Lacks the capability to provide quantification of the DNA material in the products.
- Does not offer comprehensive knowledge of the full supply chain, potentially leaving gaps in traceability.

FIBRETRACE TECHNOLOGY FOR TEXTILE TRACEABILITY

FibreTrace integrates physical tracing technology with a digital platform to verify and authenticate fibers, including cotton, wool, recycled polyester, other synthetics, responsible viscose, and linen.

At the core of FibreTrace is a patented luminescent pigment that is embedded in raw fibers. This allows the fibers to be traced, verified, and audited in real-time at each stage of the global textile supply chain. The process utilizes a proprietary handheld FibreTrace Bluetooth Scanner, which can identify and quantify the luminescent pigments in fibers, yarn, fabric, and finished goods. Once scanned, the encrypted data is transmitted into a secure blockchain and a software system specifically designed for the textile and apparel supply chain, ensuring that all information remains protected and tamper-proof.

Advantages of FibreTrace:

- Provides robust identification capabilities, allowing each batch of fiber to be distinctly recognized.
- Ensures authentication of the fibers, confirming that the materials are as claimed.
- Offers comprehensive knowledge of the entire supply chain, from raw material to finished product, by maintaining a continuous log of the fiber's journey.

Disadvantages of FibreTrace:

- Does not cover the initial stages of the supply chain, specifically from the field to the ginning process, leaving a gap in the traceability from the very start of the cotton production.
- The level of quantification provided by the system remains unclear, raising questions about its ability to measure the precise amount of fiber at each stage.
- Potentially introduces added contamination from the luminescent pigments used for tracking.
- Despite providing extensive supply chain knowledge, there may still be aspects of the supply chain that are not fully captured by the system.
- The cost of implementing and maintaining the FibreTrace system is not well defined, which may be a barrier to adoption, particularly for smaller producers or those in developing regions.

Figure-1 The Cotton Value Chain

