75. Title: Development of a new multifunctional natural textile dye from peanut shell extract

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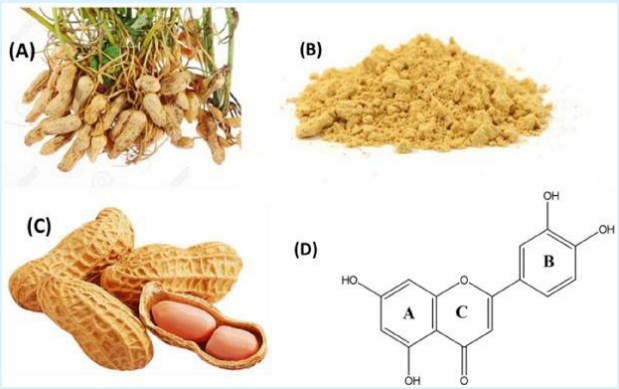
Keywords: Natural Textile Dye, Chitosan, peanut biomolecules, Silver nanoparticles, Antioxidant activity

Domain: Textiles (Dyes)

Summary: A natural process is developed to give potential alternative for extensively used toxic synthetic dyes which pose serious human health and environment challenges. In this technology, the developed process provides the natural functional dye from bio-waste peanut shell extract to produce colorful and multifunctional wool simultaneously. The extracted biomolecules compared in two experimental protocols one is without moderants or direct dyeing and another is in the presence of inorganic metal ions. In the results, presence of moderants ions favors the retention of color to several laundering cycles. This method provides promising multifunctional agent for chemical processing of wool. And, peanut shell extract biomolecules can also be used for preparing UV protective textiles. The colorants present in peanut shell extract produce beautiful yellowish hues with acceptable fastness properties of wool fabrics.



Advantages:

» A simple, economical, green fabrication procedure has been developed for the multifunctional chemical finishing of cotton.

» The wool fabric dyed with peanut shell extract exhibits excellent antimicrobial and antioxidant properties.

» Good color values with excellent fastness properties.

Applications: Sportswear, Clothing for babies, Carpets and Disposable wipes

Scale of Development: A functional prototype dye is developed and tested in Laboratory environment

Technology Readiness Level: 4

IP Status: Know-how