The preparation of functional cotton textiles using silver nanoparticles is presented in this work. The Synthesis of nanoparticles was performed by the \textit{in-situ} method on the surface of cotton textiles through the pre-activation with potassium hydroxide and silver nitrate. The metal reduction was carried successfully using the ascorbic acid and borohydride of sodium at room temperature. Surface energy on cotton fabric were modified using hexadecyl-trimethoxysilane. Textiles with properties, superhydrophobic, antibacterial and UV protection were obtained. The results of the characterization of the samples using techniques SEM, EDS, DRX, transmittance spectroscopy and contact angle measurement are presented in this research. The results showed that silver nanoparticles uniform were anchored on the surface of cotton textile fibers with high crystalline quality. The modification of the surface composition of the textile was carried out successfully. Blocking ultraviolet light was measured by transmittance data in 280-400 nm and shown ultraviolet protection factor taller than pristine cotton, also it exhibits a static water contact angle $\theta \approx 150^\circ$ for a 5 $\mu$l droplet.

The authors are thankful to the Mexican Agencies, COFAA-IPN, SIP-IPN and CONACyT for financial supports.

**Keywords:** Nanoparticles, Silver, Nanotextile

**References:**


**Presenting author's email:** joss2327_aguila@hotmail.com