**ABSTRACT**

Interesting tunable physical chemical properties of silver nanoparticles under metal nanoparticle family can have great impact in modern technologies specially concerned with biological applications. The systematic investigation on synthesis of silver nanoparticles is performed by tuning the concentration of HH, AgNO3 and PVP. The structural and morphological analysis were characterized using XRD, FE-SEM AND TEM. The formation of stable silver nanoparticle differentiated with tunable textured colors of highly crystalline (fcc) quality are remarked with particle size 10-15 nm. The antibacterial activity against *E.coli* and *S.aureus* conferred well for the concentration of 6 mM HH: 3 mM AgNO3: 3 mM PVP.