

Supplementary Material

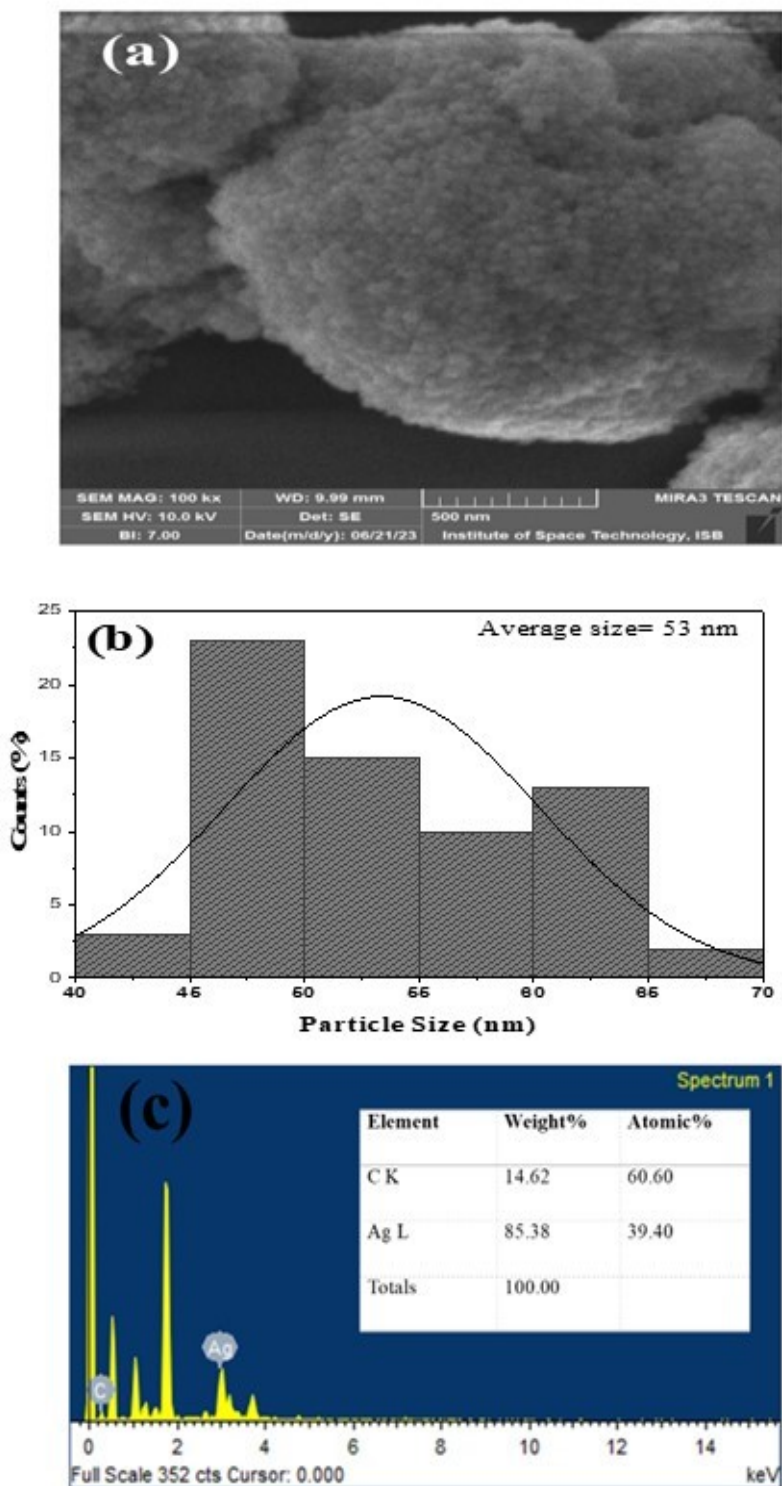


Fig. S1: (a) SEM image of AgNPs (b) Histogram of AgNPs size (c) and elemental analysis of AgNPs through EDX

SEM analysis is used to study the surface morphology along with size of silver nanoparticles which indicates that AgNPs are spherical in shape leading to the mono-dispersity with the average size of 53 nm and shown in Fig. S1(a) and (b). Aggregation is due to the refined form of AgNPs of intermediate size from 53 nm. The surface is smooth with well-defined crystalline structure. Elemental analysis through EDX as Fig. S1(c) shows that weight percentage of silver is 85.38 % without any contaminants, making it suitable for the enhancement of SERS signal ¹.

1. U. E. Habiba, A. Anwer, M. U. Hussain, M. I. Majeed, N. Alwadie, H. Nawaz, N. Akhtar, N. Rashid, S. Nadeem and M. Naz, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 2024, **313**, 124126.