CHAPTER III

Conclusion

Ag NPs were synthesized by solution combustion method using citric acid as fuels. The prepared Ag NPs were characterized by XRD, UV, TEM and SEM techniques to identify the size, shape of Ag NPs. Morphological studies show that the average size of the prepared Ag NPs was 15-44nm. Spherical shape of the prepared Ag NPs was as expected from XRD, UV, TEM and SEM measurements. The nRs and SERS spectra of CNPSA were studied. The presence of in-plane and out-of-plane modes of phenyl ring in the SERS spectrum suggest a tilted orientation of the molecule with respect to the Ag NPs. The presence of amino and sulfate group vibrations in the SERS spectrum show the interaction between these group and the Ag NPs.

CHAPTER IV

Conclusion

SERS spectra of CFSA adsorbed on Ag NPs were synthesized using a solution combustion method with glycine as fuel was studied. SEM and TEM measurements show that the average size of the prepared Ag NPs was expected was 13-53nm. Spherical shape of the prepared Ag NPs was expected from UV, SEM and TEM measurements. The XRD of prepared silver nanoparticles have the particle size of 59nm. The nRs and SERS spectral analysis reveals that the CFSA adsorbed ‘stand-on’ orientation on the Ag NPs.

CHAPTER V

Conclusion

Ag NPs were synthesized by solution combustion method using citric acid as fuel. The SERS spectral analysis indicates that the silver nanoparticles reveal high SERS activity. The vibrational features of C=O, C-Br and NH2 bending modes suggest that the BMANQ molecule was adsorbed through a ‘stand-on’ orientation on the Ag NPs. The HOMO-LUMO analysis confirms that the energy gap value has significant influence on the intermolecular charge transfer and that the BMANQ molecule has quite established configuration.

CHAPTER VI

Conclusion

SERS spectra of 1,4-DBrN molecule adsorbed on Ag NPs synthesized by solution combustion method with glycine as fuel were studied. The high intensity of C-H in-plane vibrational modes and C–Br stretching vibration indicates that the 1,4- DBrN oriented in 'stand-on' orientation on Ag NPs. The lowering of the HOMOLUMO energy gap value has substantial influence on the intermolecular charge transfer and bioactivity of the molecule and Ag NPs has an attractively established constitution.

CHAPTER VII

Conclusion

Ag NPs were synthesized using solution combustion method with citric acid as fuel. nRs and SERS spectrum of DMNMAD and DMNMAD-Ag were assignment based on the DFT theoretically spectra. The very good correlation found between the experimental and theoretical data is a clear evidence for a reliable assignment of all vibrational bands. SERS is a good technique for studying the adsorption of molecule on Ag NPs. The nRs and SERS spectral analysis reveals that the DMNMAD molecule adsorbed 'stand-on' orientation on the Ag NPs. The HOMO-LUMO analysis confirms energy gap value has significant influence on the intermolecular charge transfer that the DMNMAD and DMNMAD-Ag has quite established configuration.

CHAPTER VIII

Conclusion

The orientation of DMBMAD adsorbed on Ag NPs was studied using SERS studies. Ag NPs were synthesized using a solution combustion method with glycine as fuel. The nRs and SERS spectral analysis reveals that the DMBMAD adsorbed 'stand-on' orientation on the Ag NPs. HOMO and LUMO energy gap explain the eventual charge transfer interactions taking place within molecule and Ag NPs has been also discussed.