

Conclusion:

All in all, the method of the synthesis of SNPs will affect the mass of nanoparticles formed. In addition, the method of the synthesis of SNPs also significantly affect the effectiveness of metal ion adsorption. Under fair tests, we can see that particles with smaller size (i.e. SNPs synthesized using Punica Granatum peels extract) have a higher effectiveness on adsorption towards metal ions (i.e. $\text{Ag}^+(\text{aq})$, $\text{Zn}^{2+}(\text{aq})$, $\text{Pb}^{2+}(\text{aq})$ and $\text{Cr}^{3+}(\text{aq})$) than larger particles (i.e. elemental sulphur). Moreover, green synthesis of SNPs can potentially replace chemical synthesis, as it does not requires toxic reagents, but only some common food extracts. In fact, using SNPs to remove metal ions in wastewater might be a potential method of wastewater treatment in the future. It is relatively cheaper compared to conventional wastewater treatment methods, such as distillation and reverse osmosis.

Further investigation on the properties of SNPs has to be done in order to achieve metal ion removal using SNPs in wastewater. Furthermore, other metal ions can also be explored whether they can also be removed by adsorption of SNPs. It is important to find out how other different factors affect the performance of nanoparticles. Thus, we hope that our discovery in this project may develop into a new green and comprehensive method for water purification in the future.