

Materials List for AgNPs Synthesis

- .5 mM Ag⁺ solution
- 1% Sodium citrate solution
- Disposable 3 mL pipettes
- Hot plates
- 250 mL beakers
- Anotop® 10 filters
- 3 mL syringes
- Razorblade
- Petri dishes
- Sodium Chloride
- Test tube holders
- Test tube rack
- Distilled water
- Laser pointers

Silver Nanoparticles Synthesis:

The Synthesis

1. Add 2 mL of 1mM AgNO₃ to a small test tube.
2. Place the test tubes in a 250-mL beaker of boiling water.
3. Leave test tubes in boiling water bath for 10 minutes.
4. Add 5 drops of 1% sodium citrate to both the test tubes.
5. Continue to heat the solution turns a yellowish color. (usually took around 15 minutes for silver)
6. Remove test tubes and set in a test tube rack to cool.
7. Check for Tyndall effect using a laser pointer. Check silver and compare it with a test tube of clean water.
8. Pour test tube of silver nanoparticles into clean petri dishes.
9. Draw about 0.5 mL of silver nanoparticles into a syringe. Follow with about 1 mL of air. Attach filter to end of syringe.
10. Push nanoparticle solution through the filter. Try to determine if the nanoparticles pass through.
11. Cut open filter across seam using a razor blade. Observe the colors and texture of the filter surface using a microscope.

Change the spacing between Silver Nanoparticles using NaCl

17. Add a few grains of NaCl to silver nanoparticles.
18. Gently mix until a grey-blue color persists.
19. Draw up 0.5 mL of silver nanoparticles and NaCl solution into syringe with 1 mL of air. Attach filter.
20. Push nanoparticle solution through the filter. Try to determine if the nanoparticles pass through.
21. Cut open filter across seam using a razor blade and observe difference in dissemination

across the filter with a microscope.