

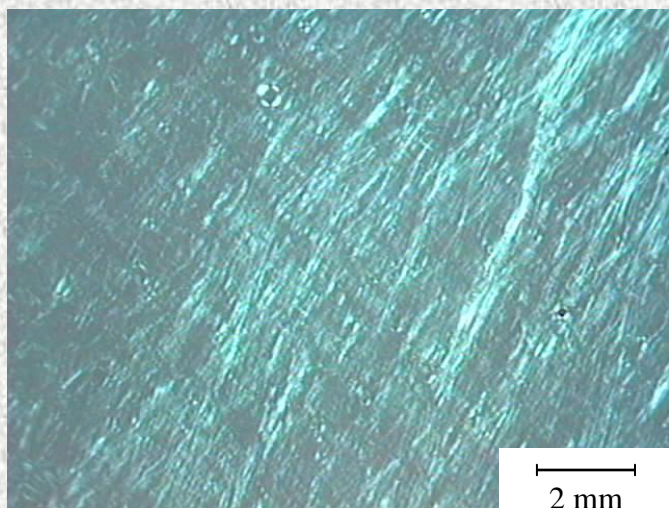
Synthesis and Dispersion of Ag Nanoplatelets

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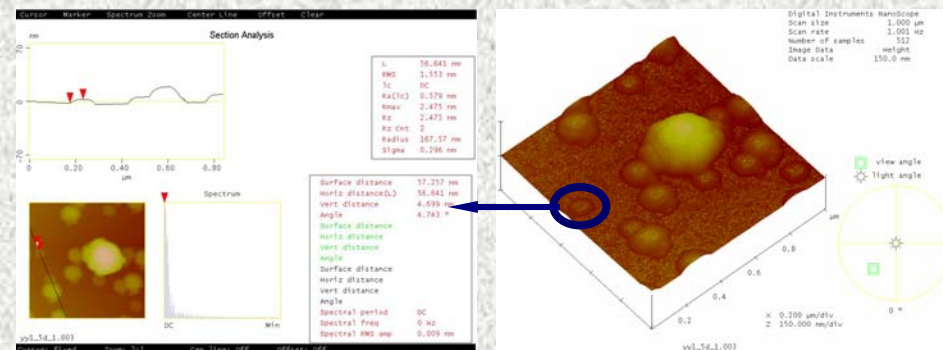
Starting: May 03

Abstract

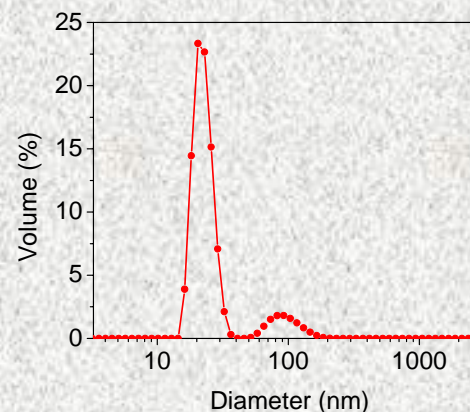
Metal platelets with a thickness of a few nanometers have a significant advantage over traditional spherical particles through improved surface coverage efficiency per unit area. Synthesis of nano-sized Ag metal platelets was formed in the water-polyoxyethylene bilayer system. The dispersion was carried out in ethanol with the use of PEI as polymeric dispersants.



Polarized optical light microscopy image confirming presence of birefringent bilayer phase ($R = 20$, [water] / [POE])



AFM analysis illustrating particle size and morphology ($R=20$)



Particle Size Distribution, dispersed by adding 0.1 w/o PEI in ethanol

Conclusion

- Nano-sized silver platelets were synthesized in a self-assembled water-POE bilayer system.

Future Work

- Dispersion will be investigated by optimizing PEI concentration and pH working range.
- BET and TG analyses on Ag nanoparticulates will be completed.