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## Synthesis of Anisotropic Gold Nanoparticles in a Water-soluble Polymer

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Anisotropic gold nanoparticles with well-defined morphologies have been synthesized using both the seed-mediated growth approach and by the UV-Irradiation technique in the presence of a PVP polymer as the stabilizing agent. Metal nanoparticles, particularly gold have been the focus of great interest because of their unique optical properties and applications [1,2]. Capping agents can direct growth along certain preferred planes leading to the formation of uniform anisotropic particles. The capping material is most important in determining the shift of the plasmon resonance due to the local nature of its effect on the surface of the nanoparticles. Choice of the reduction technique, time, concentration of the precursor and capping material determines the size and shape of the nanoparticles generated. The optical and structural properties as well as the crystallinity of the as-prepared nanoparticles were studied using UV, TEM, SAED and XRD, and found to be in the nanometer size range.

### References

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- [1] X. Yang, Y. Lu, *Materials Letters*, 2005, **59**, 2484.  
[2] A. Henglein, *J. Phys. Chem.*, 1993, **97**, 1861.