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## Polymeric gold nanoparticles: Synthesis and its potential applications in biomedicine and targeted drug delivery

**Sandeep Kumar Reddy Adena and Brahmeshwar Mishra**  
Indian Institute of Technology-BHU, India

This critical review is focused fundamentally on the synthesis and applications of polymeric gold nanoparticles (P-GNPs) in the field of biology, medicine and targeted drug delivery. P-GNPs exhibit exceptional advantages in this field due to their unique properties, small size and high surface area-to-volume ratio. They have generally been used for various biomedical applications and targeted drug delivery due to their high stability, biocompatibility, inert nature, high dispersity, non-cytotoxicity, adjustable optical and electronic properties. They are being synthesised by various approaches such as chemical, physical and green methods. Recently GNPs are most popularly used in cancer therapy. In order to promote the long systemic circulation followed by the cellular uptake, to improve the stability and payloads, a wide variety of biocompatible polymers such as chitosan, polyethylene glycol, gelatin, tamarind seed polysaccharide, guar gum etc. are being used for its surface modification. Through this presentation different synthesis strategies and applications of P-GNPs will be discussed. Applications such as labelling and visualizing, targeted drug delivering, photoablation therapy, sensing etc. will be elaborated. Further fundamental ideas, mechanisms and the specific features of the P-GNPs in relation to various applications will also be illustrated.

### Biography

Sandeep Kumar Reddy Adena has completed his BPharmacy from PRRM College of Pharmacy, Kadapa, India and MPharmacy from Annamacharya College of Pharmacy, Kadapa, India. Presently he is pursuing PhD in Pharmaceutical Engineering from Department of Pharmaceutics, Indian Institute of Technology (BHU), Varanasi, India. He also worked as an Assistant Professor in Nirmala College of Pharmacy, Kadapa, India.

[ksandeep.rs.phe14@itbhu.ac.in](mailto:ksandeep.rs.phe14@itbhu.ac.in)

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