

## A n n o t a t i o n

This thesis examines the physical and biological properties of various nanoparticles, including liposomes, dendrimers, micelles, gold nanoparticles, and magnetic particles. Special emphasis is placed on their biomedical applications, particularly in oncological therapies and targeted drug delivery systems. The work clearly demonstrates that controlling the physical properties of nanoparticles and understanding their interactions with biological systems opens broad perspectives for advanced approaches in medicine.