

ABSTRACT:

Nano-sized nickel particles have been prepared by using a 'phase transformation' method. Nickel chloride was used as a precursor, hydrazine as a reducing agent in the presence of an anionic surfactant sodium-dodecyl-sulphate (SDS) and PVP (polyvinylpyrrolidone – a cationic polymer) in a strong basic medium. Initially the effect of SDS and SDS-PVP on the particle size formation was studied, then hydrazine only and then followed by the effect of adding SDS to the solution. SEM characterisation showed that in the absence of SDS-PVP the Ni particles were almost spherical but when SDS and SDS-PVP were present the particles showed very spiky morphology. Much finer particles were produced when SDS was used on its own. However, the combination of SDS-PVP had produced the finest particles in our research work. Froth contained Ni particles; TEM characterisation showed these Ni particles were much finer than the particles collected from the precipitated particles.