

# Preparation of magnetic nanoparticles embedded in polystyrene microspheres

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**Abstract:** Superparamagnetic particles are widely used for biological applications such as cell separation. The size of the particles is normally in the range of 10 - 20 nm which is much smaller than the size of a cell. Therefore small particles create small force which is not strong enough to separate the cells from solution. Superparamagnetic nanoparticles embedded in Polystyrene microspheres (magnetic beads) are very useful for cell separation. Magnetic beads have been prepared by solvent evaporation of an emulsion. The beads with size of 0.2  $\mu\text{m}$  - 1.0  $\mu\text{m}$  have a saturation magnetization of 10 - 25 emu/g. The change of the amount of surfactants, volatile solvent, magnetic particles resulted to the change of size, magnetic properties of the magnetic beads. © 2009 IOP Publishing Ltd.

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