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Effect of pH on photosynthesized silver nanoparticles using *Dianthus caryophyllus* L. (Carnation) flower

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Abstract: In this paper, silver nanoparticles (AgNPs) were synthesized using the flower extract of *Dianthus caryophyllus* L. (carnation) where extract acted as both reducing and stabilizing agent. The effect of pH (4, 6, 9 and 10) on the synthesis route of AgNPswas analysed.Their absorption spectra were recorded through UV-Visible spectrophotometer in terms of the absorption peaks (400 and 440 nm).Inverse correlationwas observed between the pH values and size of AgNPssynthesized in the reaction mixture. At pH 4, there was no significant colour change in the solution which indicated the absence of any AgNPs in the mixture. At relatively higher pH, the more spherical and smallerAgNPs were recorded as compared to low pH values. The resultant AgNPs were characterized using UV-Visible spectrophotometer and Transmission electron microscope (TEM) techniques.
Keywords: Silver nanoparticles, Green synthesis, *Dianthus Caryophyllus* flower,pH variation.

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