



**Synthesis Of Copper Nano particles For The Effective Statically Optimized Rapid Removal Of Dye
By Adsorption Method**

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**Characterization of copper
nano particles and its
application for rapid removal
of dye:**

BACKGROUND: Chemical Reduction technique was employed to prepare highly stable Copper nano particles using L-Ascorbic acid. COPPER nano particles less effective in all metals nano particles. However, it has great capability against rapid removal of dye, anti microbial and anti fungal activities.

• **EXPERIMENT:** A 0.5 molar solution of COPPER SULPHATE mix with 0.5 molar solution of L-Ascorbic acid (Vitamin C) heating and stirring at about 30 minutes. COPPER nano particles (red color) deposit on the bottom of the flask.

Separate and dry it, keep in dark. Nano particles employ high performance adsorbent for decontamination of Reactive Navy Blue dye.

• **RESULT:** The adsorption experiment was optimized by RSM based on Central Composite Design that predict 99.79% dye in optimum condition.

• **DISCUSSION:** COPPER nano particles characterized by FTIR, ESM, SEM. Optimum parameters with %RSD and %Mean Error of 0.0652 and 0.1441 respectively.

CONCLUSION: L-Ascorbic acid protected Cu NP prepared using chemical reduction of copper sulphate. This is simple, economical, green method for the synthesis of Cu NP with no toxic hazardous effect.

REFERENCE:

<http://www.scielo.br/scielo.php?script=s00300197>

Saad, M., Tahir, H., & Ali, D. (2017). Green synthesis of Ag-Cr-AC nanocomposites by Azadirachta indica and its application for the simultaneous removal of binary mixture of dyes by ultrasonicated assisted adsorption process using Response Surface Methodology. Ultrasonics sonochemistry, 38, 197-213.