**Applicability of Gemini surfactants for the removal of hazardous reactive dye, reactive red RB**

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## Abstract

Reactive dyes are hazardous due to their property of forming covalent bond with $–NH_2$ and –SH group of proteins in living organisms. Hence their removal is mandatory from the effluent before discharging into main stream. Different methods have been employed for the satisfactory removal of dyes. Current methods for their removal largely rely on adsorption techniques which are costly and produce another waste to be disposed off, whereas the concept of reverse micelles acting to encapsulate the dye in aqueous micro pool in solvent environment provides a useful chemistry. The removal of the reactive red RB from aqueous phase in amyl alcohol solvent using cationic surfactant 1,1'-(1,1'-(ethane-1,2-diylbis-(sulfanediyl))bis(octadecane-2,1-diyl))dipyridinium bromide (CMC=0.02mM and Molecular weight=915.15) was successful giving 100% removal. The effect of dye and surfactant concentration, solvent, temperature, salts like NaCl, KCl, $NH_4Cl$ and $MgCl_2$ were studied. The percentage removal of dye depends upon the size of the reverse micelle of the surfactant. The solvent used for the dye removal can be recovered by distillation method and can be reused.

## Biography

Charanjeet Kaur Mangat has completed her PhD from Guru Nanak Dev University. She is the HOD of School of Applied & Basic Sciences, RIMT University. She has published 7 papers in reputed journals.