

## Entrapment of fungus *Rhizomucor tauricus*, removal of Zn (II) from aqueous solution and spectroscopic characterization

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Removal of zinc (II) was investigated using an industrial waste fungus *Rhizomucor tauricus* dead mycelia biomass powder and also live biomass entrapped into alginate gel liquid curing method in the presence of Ca (II) ions. The effect of initial zinc concentration, pH and temperature on zinc removal has been investigated. The maximum experimental biosorption capacities for entrapped live and dead powdered fungal of *Rhizomucor tauricus* were found to be  $79.16 \pm 4.7$  mg Zn (II) g<sup>-1</sup> and  $47.34 \pm 3.8$  mg Zn (II) g<sup>-1</sup> respectively. The kinetics of zinc biosorption was slow; approximately 75% of biosorption takes place in 3 ½ hours and the equilibrium time was noted as 4 for immobilized 3 hrs for dead powdered biomass. The biosorption equilibrium data were well described by Langmuir and Freundlich adsorption isotherms. The responsible functional groups were aromatic -OH and -NH<sub>2</sub> in the biosorption process. Since binding capacities were relatively high for both immobilized live and dead powdered fungus forms, those fungal forms could be considered as suitable biosorbents for the removal of Zn (II) in wastewater treatment.

### Biography

Swamy awarded his Ph.D from IIT, Bombay in the area of environmental biotechnology. He is having 20 years industrial and 12 years teaching experience. He guided more than 10 Ph. D students and 25 M. Tech students. He has 15 publications in international and 5 national reputed journals. He is also a Life member of IChE, India. He authored a book entitled "fundamental of Biochemical Engineering" in 2007.

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