NOVEL MATERIAL FOR WATER TREATMENT

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Project report

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ABSTRACT

As environmental protection is becoming an important global attention and focused on getting a value added by product from waste which does not cause environmental pollution or eco-friendly. Chitosan is a natural biopolymer obtained as byproduct from sea food industry waste, has versatile application in various fields.

The objective of present work, to study suitability of chitosan for water treatment. Chitosan is used as a coagulant to remove turbidity and compared with other commonly used coagulant, alum (Aluminum sulphate). In present work, we also focused on ability of chitosan in reducing/ removing other quality parameters such as hardness, chloride, sulphate and nitrate.

The chitosan solution is prepared by dissolving 1gm of chitosan in 1% of acetic acid with constant stirring. The chitosan solution is added to jar test apparatus at different concentration at varying pH to determine optimum concentration and pH. The treated water is analyzed for other as per standard procedure.

The maximum removal of turbidity is observed at concentration 80mg/l and a pH 9. Where turbidity is reduced to 3 NTU from 88 NTU. Results also show it is effective in reducing parameters like chloride, hardness, etc.

The chitosan can be used as a coagulant in water treatment plant.