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## Synthesis and flocculation performance of a chitosan-acrylamide-fulvic acid ternary copolymer

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### Highlights:

- Two natural polymers of chitosan and fulvic acid were successfully grafted with a synthetic monomer of acrylamide.
- The amphoteric ternary copolymer flocculated three typical dyes effectively.
- The water soluble flocculant had wide pH effectiveness scope and flocculation window.
- Flocculation mechanism was combination of charge neutralization and bridging effect.

### Abstract:

The flocculant made from natural polymers gained prominence in recent years due to its eco-friendliness and low cost. In this study, two natural polymers of chitosan and fulvic acid were successfully grafted with a synthetic monomer of acrylamide as a new type of flocculant. The prepared chitosan-acrylamide-fulvic acid (CAMFA) exhibited an excellent capacity to remove three typical dyes, the color removal ratios

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