CHITOSAN BIOSORBENTS WITH DESIGNABLE PERFORMANCE FOR WASTEWATER TREATMENT

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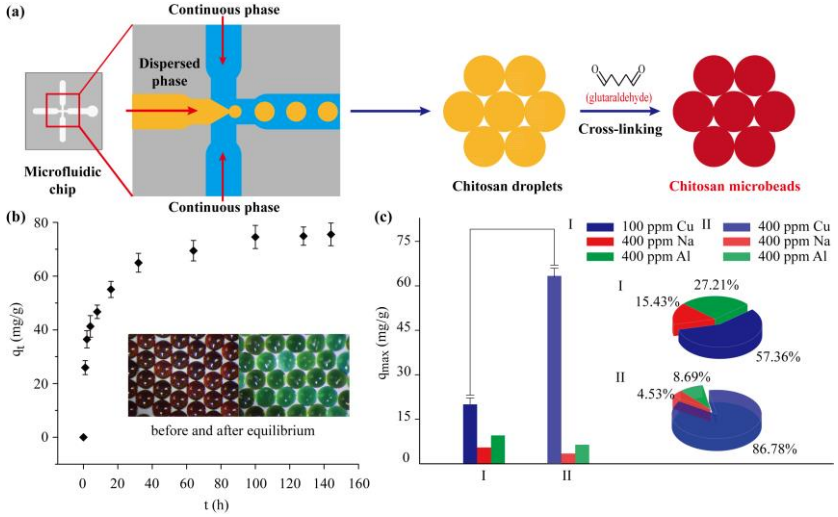
Water pollution is the most challenging issue facing mankind nowadays as a result of wastewater arbitrary discharge, which causes irreversible damage and incalculable loss.[1] Although significant efforts have been reported in order to slow down the deterioration in the past century, conventional approaches gradually exhibit its disability to solve these problems. In this study, a simple microfluidic based preparation approach was introduced to obtain novel chitosan biosorbents with designable performance for targeted metal ions(Cu^{2+}) selective removal. The maximum adsorption capacity of chitosan biosorbents is 75.52 mg/g, which is larger than that reported in literature.[2] Besides, the adsorption process can be well described by pseudo-second order model(R^2=0.998), film diffusion theory, and Langmuir adsorption model. More importantly, as-prepared chitosan microbeads also exhibit outstanding selectivity and excellent regeneration (the 5th readsorption capacity is up to 60.21 mg/g).



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References:

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