

Protein-Thiocyanate Composite as a Sensor for Iron III Cations

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Abstract : Two proteinic biopolymers; namely keratin and sericin, were extracted from their respective natural resources by simple appropriate methods. The said proteins were dissolved in the appropriate solvents followed by regeneration in a form of film polyvinyl alcohol. Proteinium thiocyanate (PTC) composite was prepared by reaction of a regenerated film with potassium thiocyanate in acid medium. In another experiment, the said acidified proteins were reacted with potassium thiocyanate before dissolution and regeneration in a form of PTC composite. The possibility of using PTC composite for determination of the concentration of iron III ions in domestic as well as industrial water was examined. The concentration of iron III cations in water was determined spectrophotometrically by measuring the intensity of blood red colour of iron III thiocyanate obtained by interaction of PTC with iron III cation in the tested water sample.

Keywords : iron III cations, protein, sensor, thiocyanate, water

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