

Supplementary Information

Extracted lignin from sugarcane bagasse for methylene blue and hexavalent chromium adsorption in textile wastewater: Facile, green and sustainable approach

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Fig. S1. Natural biomass resources (sugarcane bagasse, SCB) were collected

The optimum extraction process of lignin from sugarcane baits

The work presented the process of extracting lignin from sugarcane bagasses collected in the Mekong Delta, Vietnam by alkali method.

Sugarcane bagasse was chopped into particles of around 1 cm² and boiled in distilled water at 70°C for 2 hrs to remove sugar. After that, the SCB was dried at 60°C for 24 hrs and crushed to approximately 0.5 mm². The crushed SCB is treated with NaOH solution (10 %) at 120°C for 90 mins, then solid was removed to obtain black solution. Next, concentrated H₂SO₄ was slowly added into the black solution to form yellow precipitant until the solution reached pH 2. Then the precipitate several times with deionized water and dry the precipitate at 60°C for 24 hrs to obtain lignin. The results indicate that sugarcane bagasse yielded the lignin content of 38.61%.

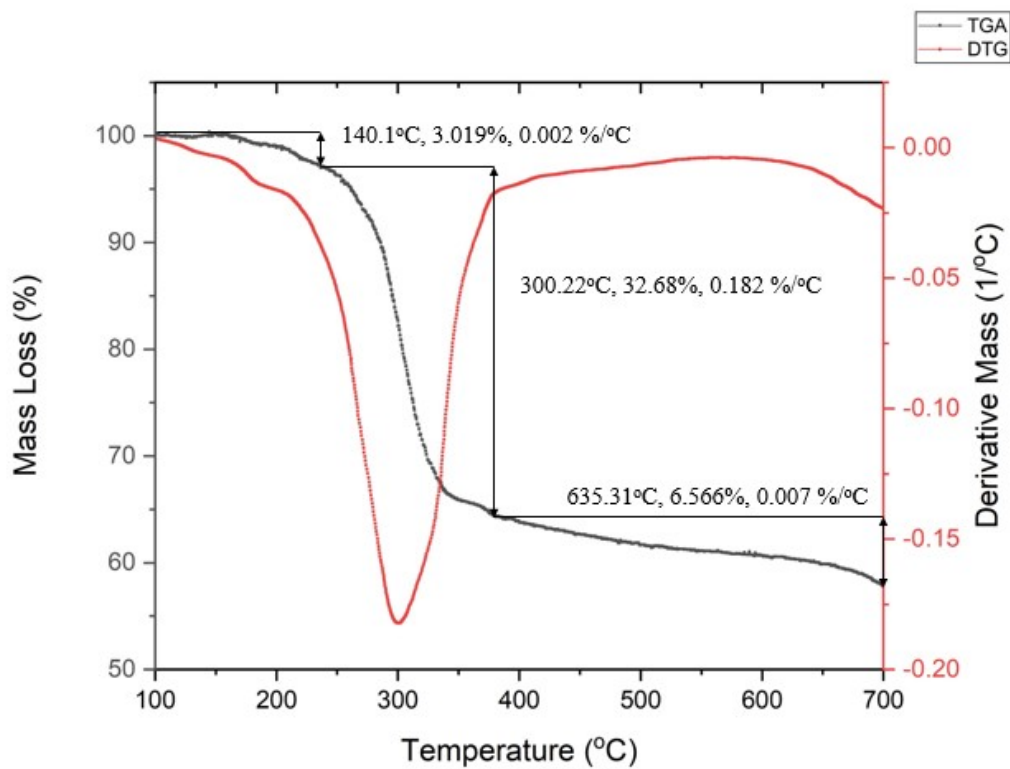


Figure S2. TGA of lignin powder was boiled for 60 minutes

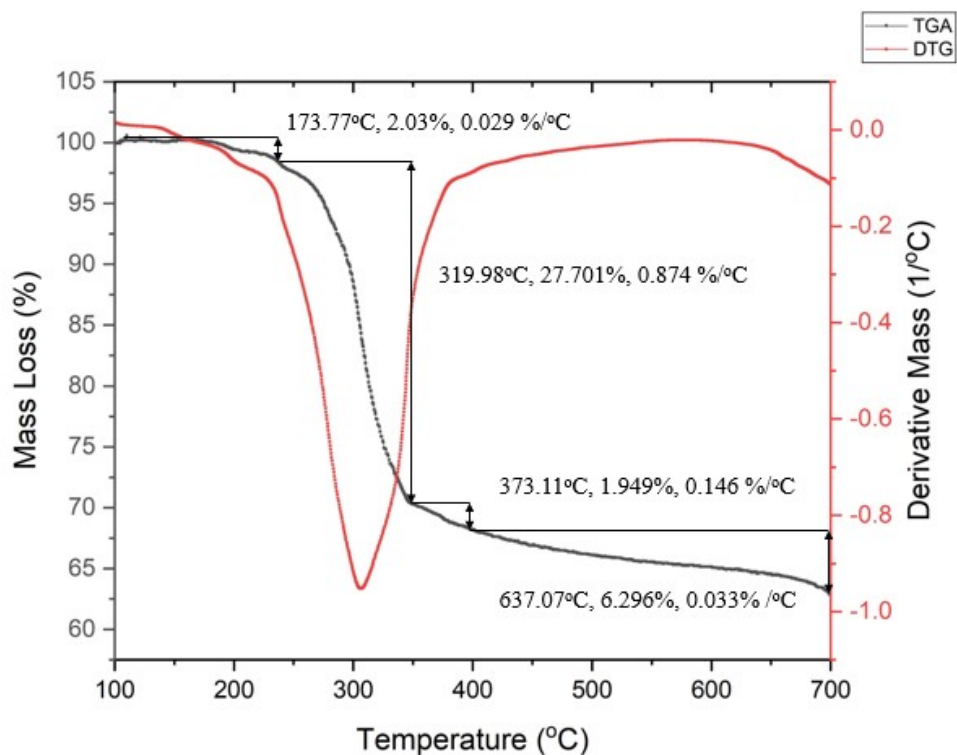


Figure S3. TGA of lignin powder was boiled for 90 minutes

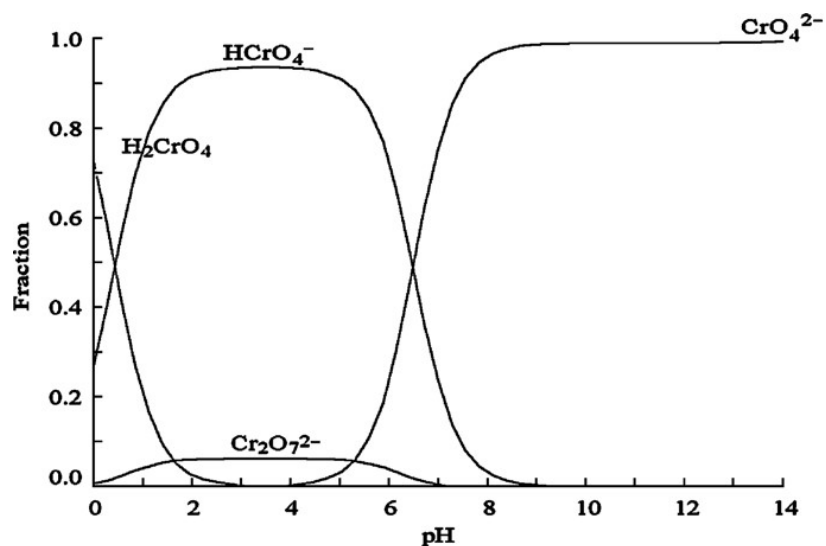


Figure S4 The dissociation of Cr(VI) in solution depends on pH

References

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