Clean, available drinking water is an obvious necessity throughout the world. Unfortunately however, many remote and/or impoverished areas are without a reliable potable water resource. Purification systems can be expensive, complicated or both. The need and availability of cheap, reliable methods for purifying water in less developed, small rural areas is unequivocal.

Adsorption studies of organic residues have been reported using magnetic biochar.[1] The referenced procedure allows for the preparation of magnetic biochar in the conventional approach of reacting Fe^{2+}/Fe^{3+} with a NaOH solution to precipitate magnetite onto the biochar surface. Subsequent absorption of organic residues appear to be very effective.

This research seeks to enhance the surface area of magnetic biochar by performing homogeneous precipitation using urea as the source of hydroxide. Preliminary results will be reported on the preparation of biochar and analytical effectiveness in comparison to reported values.

Reference:

1. J.Chem.Educ. 2016, **93**, 1935-1938