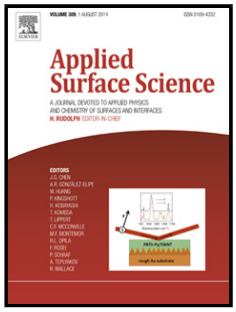

Title: Nitric Acid Modification of Activated Carbon Produced from Waste Tea and Adsorption of Methylene Blue and Phenol

Author: Yavuz Gokce Zeki Aktas

PII: S0169-4332(14)01255-0
DOI: http://dx.doi.org/doi:10.1016/j.apsusc.2014.05.214
Reference: APSUSC 28033

To appear in: *APSUSC*

Received date: 3-1-2014
Revised date: 9-5-2014
Accepted date: 31-5-2014

Please cite this article as: Y. Gokce, Z. Aktas, Nitric Acid Modification of Activated Carbon Produced from Waste Tea and Adsorption of Methylene Blue and Phenol, *Applied Surface Science* (2014), http://dx.doi.org/10.1016/j.apsusc.2014.05.214

Nitric Acid Modification of Activated Carbon Produced from Waste Tea and Adsorption of Methylene Blue and Phenol

Yavuz Gokce[1] and Zeki Aktas[1]

Department of Chemical Engineering, Ankara University, Tandogan, Ankara 06100, Turkey

ygokce@eng.ankara.edu.tr

zaktas@eng.ankara.edu.tr

Corresponding author:

E-mail: zaktas@eng.ankara.edu.tr

Telephone and fax number: +903122033460 - +903122121546

Postal address: Department of Chemical Engineering, Ankara University, Tandogan, Ankara 06100, Turkey

Abstract

Nitric acid (HNO_3) modification of activated carbon (AC) prepared from waste tea with the assistance of microwave activation was studied. Unmodified and modified AC samples were characterised in terms of structural, morphological and chemical properties. Methylene blue (MB) and phenol adsorption from aqueous solution were investigated to determine the effect of modification on the adsorption performances. Modification process increased the oxygen containing groups on the surface of the AC. The adsorption of MB and phenol on the modified AC was quite different. It is reported that the adsorption of these contaminants