

## Accepted Manuscript

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PII: S0263-2241(17)30042-8  
DOI: <http://dx.doi.org/10.1016/j.measurement.2017.01.032>  
Reference: MEASUR 4555

To appear in: *Measurement*

Received Date: 28 September 2015  
Revised Date: 6 January 2017  
Accepted Date: 17 January 2017

Please cite this article as: T. Yoda, K. Shibuya, K. Miura, H. Myoubudani, Characterization of the Adsorption Ability of Silk-derived Activated Carbon Fibers Using X-ray Analysis and Camera Imaging Methods, *Measurement* (2017), doi: <http://dx.doi.org/10.1016/j.measurement.2017.01.032>

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X-ray Analysis and Camera Imaging Methods

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**Abbreviated title:** “Adsorption Ability of ACFs”

## Abstract

Activated carbon fibers (ACFs) are novel materials that are attracting significant attention as adsorbents. We developed a nondestructive method of evaluating the adsorption performance of ACFs using digital data obtained from digital-camera images of samples. We also focused on ACFs' sulfur content because it is known to be directly related to their adsorption ability. The sulfur contents of ACF cloths were investigated using wavelength-dispersive X-ray fluorescence (WDXRF) spectrometry. We investigated the correlation between the adsorption ability of ACFs and their sulfur content and the correlation between their adsorption ability and the gray intensity (GI) obtained from digital photographs. Although the method is currently primitive, we speculate that, in the future, GI may represent an effective and nondestructive method of evaluating ACF adsorbents.

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