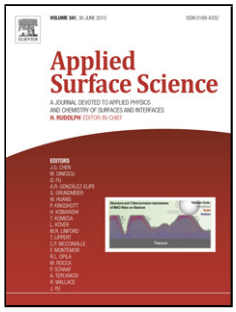

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PII: S0169-4332(15)01821-8
DOI: http://dx.doi.org/doi:10.1016/j.apsusc.2015.08.024
Reference: APSUSC 30971

To appear in: *APSUSC*

Received date: 6-6-2015
Revised date: 28-7-2015
Accepted date: 4-8-2015

Please cite this article as: B. Yan, Z. Chen, L. Cai, Z. Chen, J. Fu, Q. Xu, Fabrication of Polyaniline Hydrogel: Synthesis, Characterization and Adsorption of methylene blue, *Applied Surface Science* (2015), http://dx.doi.org/10.1016/j.apsusc.2015.08.024

Fabrication of Polyaniline Hydrogel: Synthesis, Characterization and Adsorption of methylene blue

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Abstract: Polyaniline (PAni) hydrogel was synthesized in a facial method by using phytic acid as both dopant and cross-linking agent. Then the fabricated hydrogel was employed as an efficient adsorbent to remove the methylene blue (MB) in an aqueous solution. The as-synthesized PAni hydrogel was characterized by scanning electron microscopy (SEM) and transmission electron microscopy (TEM) images. The characterization results indicate that the obtained PAni hydrogel has a 3D structure, which is available for the contact between the adsorbent and dye molecules. During the adsorption, the phytic acid provides a large number of anionic phosphate groups as adsorption sites for MB molecules, which induces the high adsorption capacity up to 71.2 mg/g. The effects of pH, the PAni hydrogel mass and temperatures on