



Absorción de Cromo Hexavalente en soluciones acuosas por cascaras de naranja: (Citrus sinensis) [

2015

text (article)

Analítica

Introduction. Chromium can be found in industrial effluents, usually as CR (III) and CR (VI). The latter is very toxic for all of the life forms and is also mutagenic and carcinogenic in humans. The conventional methods to treat effluents with heavy metals, such as reduction, oxidation, ionic exchange, filtering and membrane technologies are expensive and inefficient at low metal concentrations. The use of biomass eliminates the toxicity problem and allows the recovery of the heavy metals retained, plus the possibility of reusing the adsorbent. **Objective.** Orange peel as a Cr (VI) in aqueous solutions was studied. **Materials and methods.** The characterization of the functional groups of the peels was performed by means of an elemental analysis and infrared spectroscopy. The determination of the Cr (VI) concentration was made with the diphenylcarbazide method, by the use of a UV-vis spectrophotometer. **Results.** The agro industrial waste used shows a 66,6 % removal of Cr (VI) in a 120 minutes period. The phenomenon was better described by the Langmuir isotherm, having a 16,66 mg/g adsorption capacity. The kinetics followed the pseudo-second order adsorption behavior. **Conclusions.** The most favorable conditions for the Cr (VI) ions adsorption on orange peels were those at a 3 pH and an adsorbent size of 0,425mm. It was demonstrated that the peels can be used to remove Cr (VI) from waste water originated by tannery and other industries

Introduction. Chromium can be found in industrial effluents, usually as CR (III) and CR (VI). The latter is very toxic for all of the life forms and is also mutagenic and carcinogenic in humans. The conventional methods to treat effluents with heavy metals, such as reduction, oxidation, ionic exchange, filtering and membrane technologies are expensive and inefficient at low metal concentrations. The use of biomass eliminates the toxicity problem and allows the recovery of the heavy metals retained, plus the possibility of reusing the adsorbent. **Objective.** Orange peel as a Cr (VI) in aqueous solutions was studied. **Materials and methods.** The characterization of the functional groups of the peels was performed by means of an elemental analysis and infrared spectroscopy. The determination of the Cr (VI) concentration was made with the diphenylcarbazide method, by the use of a UV-vis spectrophotometer. **Results.** The agro industrial waste used shows a 66,6 % removal of Cr (VI) in a 120 minutes period. The phenomenon was better described by the Langmuir isotherm, having a 16,66 mg/g adsorption capacity. The kinetics followed the pseudo-second order adsorption behavior. **Conclusions.** The most favorable conditions for the Cr (VI) ions adsorption on orange peels were those at a 3 pH and an adsorbent size of 0,425mm. It was demonstrated that the peels can be used to remove Cr (VI) from waste water originated by tannery and other industries

Introduction. Chromium can be found in industrial effluents, usually as CR (III) and CR (VI). The latter is very toxic for all of the life forms and is also mutagenic and carcinogenic in humans. The conventional methods to

treat effluents with heavy metals, such as reduction, oxidation, ionic exchange, filtering and membrane technologies are expensive and inefficient at low metal concentrations. The use of biomass eliminates the toxicity problem and allows the recovery of the heavy metals retained, plus the possibility of reusing the adsorbent. Objective. Orange peel as a Cr (VI) in aqueous solutions was studied. Materials and methods. The characterization of the functional groups of the peels was performed by means of an elemental analysis and infrared spectroscopy. The determination of the Cr (VI) concentration was made with the diphenylcarbazide method, by the use of a UV-vis spectrophotometer. Results. The agro industrial waste used shows a 66,6 % removal of Cr (VI) in a 120 minutes period. The phenomenon was better described by the Langmuir isotherm, having a 16,66 mg/g adsorption capacity. The kinetics followed the pseudo-second order adsorption behavior. Conclusions. The most favorable conditions for the Cr (VI) ions adsorption on orange peels were those at a 3 pH and an adsorbent size of 0,425mm. It was demonstrated that the peels can be used to remove Cr (VI) from waste water originated by tannery and other industries

<https://rebiunoda.pro.baratznet.cloud:38443/OpacDiscovery/public/catalog/detail/b2FpOmNlbGVicmF0aW9uOmVzLmJhcmF0ei5yZW4vMzI5Mjg0MDM>

Título: Absorción de Cromo Hexavalente en soluciones acuosas por cascara de naranja: (Citrus sinensis) electronic resource]

Editorial: 2015

Tipo Audiovisual: Adsorbente lignocelulósico cinética de adsorción cromo (VI) isoterma de adsorción Lignocellulosic adsorbent adsorption kinetics chromium (VI) adsorption isotherm Adsorvente lignocelulósico cinética de adsorção cromo (VI) isoterma de adsorção

Documento fuente: Producción + Limpia, ISSN 1909-0455, Vol. 10, N°. 1, 2015, pags. 9-21

Nota general: application/pdf

Restricciones de acceso: Open access content. Open access content star

Condiciones de uso y reproducción: LICENCIA DE USO: Los documentos a texto completo incluidos en Dialnet son de acceso libre y propiedad de sus autores y/o editores. Por tanto, cualquier acto de reproducción, distribución, comunicación pública y/o transformación total o parcial requiere el consentimiento expreso y escrito de aquéllos. Cualquier enlace al texto completo de estos documentos deberá hacerse a través de la URL oficial de éstos en Dialnet. Más información: <https://dialnet.unirioja.es/info/derechosOAI> | INTELLECTUAL PROPERTY RIGHTS STATEMENT: Full text documents hosted by Dialnet are protected by copyright and/or related rights. This digital object is accessible without charge, but its use is subject to the licensing conditions set by its authors or editors. Unless expressly stated otherwise in the licensing conditions, you are free to linking, browsing, printing and making a copy for your own personal purposes. All other acts of reproduction and communication to the public are subject to the licensing conditions expressed by editors and authors and require consent from them. Any link to this document should be made using its official URL in Dialnet. More info: <https://dialnet.unirioja.es/info/derechosOAI>

Lengua: Spanish

Enlace a fuente de información: Producción + Limpia, ISSN 1909-0455, Vol. 10, N°. 1, 2015, pags. 9-21

Baratz Innovación Documental

- Gran Vía, 59 28013 Madrid
- (+34) 91 456 03 60
- informa@baratz.es