

منابع مورد استفاده:

- 1- B.Volesky, *Sorption and biosorption*, BV Sorbex, Inc., Canada.2003.
- 2- SS. Ahluwalia, D. Goyal, *Microbial and plant derived biomass for removal of heavy metals from wastewater*. Bioresour Technol 2007, 98, 2243–57.
- 3- Y. Sağ, T. Kutsal, *Determination of the biosorption heats of heavy metal ions on Zoogloea ramigera and Rhizopus arrhizus*. Biochem Eng J, 2000, 6, 145–51.
- 4- K. Vijayaraghavan, YS. Yun, *Utilization of fermentation waste (Corynebacterium glutamicum) for biosorption of Reactive Black 5 from aqueous solution*. J Hazard Mater 2007, 141, 45–52.
- 5- J. Yang, B. Volesky, *Modeling the uranium-proton ion exchange in biosorption*. Environ Sci Technol 1999, 33, 4079–85.
- 6- A. Esposito, F. Pagnanelli, F. Vegliò, *pH-related equilibria models for biosorption in single metal systems*, Chem Eng Sci 2002, 57, 307–13.
- 7- YS. Ho, G. McKay, *The sorption of lead(II) ions on peat*, Water Res 1999, 33, 578–84.
- 8- Z. Aksu, SS. Çağatay, *Investigation of biosorption of Gemazol Turquoise Blue-G reactive dye by dried Rhizopus arrhizus in batch and continuous systems*, Sep Purif Technol 2006, 48, 24–3.
- 9- G. Dönmez, Z.Aksu, *Removal of chromium(VI) from saline wastewaters by Dunaliella species* , Process Biochem 2002, 38, 751–62.
- 10- S. Schiiewer, *Multi-metal ion exchange in biosorption*, Department of Chemical Engineering: McGill University, Montreal, Canada, 1996, p14.
- 11- Christian Brother University, Lecture Note, Website Address, www.cbu.edu/~rprice/lestures/adsorb.html
- 12- KP. Talaro, A. Talaro, *Foundations in microbiology*. Blacklick, Ohio, U.S.A.: McGraw-Hill College; 2002. ed 4th.

- 13- H. Mann, *Removal and recovery of heavy metals by biosorption*. In: Volesky B, editor. *Biosorption of heavy metals* . Boca Raton: CRC press; 1990, 93-137.
- 14- K. Vijayaraghavan, YS.Yun, *Bacterial biosorbents and biosorption*. *Biotechnol Adv* 2008 , 26 , 266-91.
- 15- Gadd GM. *Interactions of fungi with toxic metals*. *Phytologist* 1993, 124, 25–60.
- 16- JL. Wang, C. Chen, *Biosorption of heavy metals by Saccharomyces cerevisiae: a review*. *Biotechnol Adv* 2006, 24,427-8.
- 17- D. Mendil, M. Tuzen, M. Soylak, *A biosorption system for metal ions on Penicillium italicum loaded on Sepabeads SP 70 prior to flame atomic absorption spectrometric determinations*. *J Hazard Mater* 2008, 152, 1171–8 .
- 18- J. Rincon, F. Gonzalez, A. Ballester, M.L. Blazquez, J.A. Munoz, *Biosorption of heavy metals by chemically-activated alga Fucus vesiculosus*. *J Chem Technol Biotechnol* 2005, 80, 1403–7.
- 19- E. Romera, F. Gonzalez, A. Ballester, M.L. Blazquez, JA. Munoz, *Biosorption with algae: a statistical review*. *Crit Rev, Biotechnol* 2006, 26, 223–35 .
- 20- L. Brinza, MJ. Dring, M. Gavrilescu, *Marine micro- and macro-algal species as biosorbents for heavy metals*. *Environ Eng Manage J* 2007, 6, 237–51 .
- 21- T.A.Davis, B. Volesky, A. Mucci, *A review of the biochemistry of heavy metal biosorption by brown algae*. *Water Research* , 2003, 37, 4311-30 .
- 22- S. Klimmek, HJ. Stan, A. Wilke, G. Bunke, R. Buchholz. *Comparative analysis of the biosorption of cadmium , lead, nickel, and zinc by algae*. *Environ Sci Technol* 2001 .
- 23- D. Kratochvil, B. Volesky. *Advances in the biosorption of heavy metals* . *Trends Biotechnol* 1998, 16, 291–300 .
- 24- I. Langmuir, *The adsorption of gases on plane surfaces of glass, mica and platinum*, *J Am Chem Soc*, 1918, 40, 1361–403 .

- 25- H. Freundlich, *Ueber die adsorption in loesungen*. Z Phys Chem, 1907, 57, 358-470.
- 26- M. Temkin, *Die gas adsorption und der nernstsche wärmesatz*. Acta Physicochim URSS 1934, 1, 36–52.
- 27- MM. Dubinin, *The potential theory of adsorption of gases and vapors for adsorbents with energetically non-uniform surface*. Chem Rev 1960, 60, 235–66.
- 28- O. Redlich, DL. Peterson, *A useful adsorption isotherm*. J Phys Chem 1959, 63, 1024.
- 29- MAM. Khraisheh, YS. Al- Degs, SJ. Allen, MN, Ahmad. *Elucidation of controlling steps of reactive dye adsorption on activated carbon* . Ind Eng Chem Res 2002 , 41 , 1651–7.
- 30- Y.S. HO, *Review of second-order models for adsorption systems*, J Hazard Mater, 2006, B136 , 681– 9.
- 31- WJ. Weber, JC. Morris, *Kinetics of adsorption on carbon solution*. J Sanit Eng Div Am Soc Civ Eng 1963, 89, 31–59.
- 32-A. Hawari, C . Mulligan, *Heavy metals uptake mechanisms in a fixed-bed column by calcium-treated an aerobic biomass* . Process Biochemistry, 2006, 187-198.
- 33- J. Paul Chen, L. Yang, *Chemical Modification of Sargassum sp. for Prevention of Organic Leaching and Enhancement of Uptake during Metal Biosorption*, Ind. Eng. Chem. Res, 2005, 44, 9931-42.
- 34- A. Sari, M. Tuzen, O.D. Uluozlu, C. Usta, M. Soylak, *Biosorption of copper(II), lead(II), iron(III) and cobalt(II) on Bacillus sphaericus-loaded Diaion SP-850 resin*, Analytica Chimica Acta, 2007, 581, 241–246.
- 35- Y. Andres, H.J. MacCordik, J.C. Hubert, *Adsorption of several actinide (Th, U) and lanthanides (La, Eu, Yb) ions by Mycobacterium smegmatis*, Applied Microbiology Biotechnology, 1993, 39, 413–417.
- 36- C.F. Baes, R.E. Mesmer, *The Hydrolysis of Cations*, New York, Wiley, 1976 .

37- M. Tsezos, B. Volesky, *The mechanism of thorium biosorption by Rhizopus arrhizus*, Biotechnology and Bioengineering. 1982, 24, 955–959.

38- C. B. Kuber, F. D. Stanislaus, *Thorium biosorption by Aspergillus fumigatus, a filamentous fungal biomass*. Journal of Hazardous Materials, 2009, 165, 670–676.

39- L. Yinghui, C. Qilin, L. Fang, C. Ji, *Biosorption of Cd²⁺, Cu²⁺, Ni²⁺ and Zn²⁺ ions from aqueous solutions by pretreated biomass of brown algae*, Journal of Hazardous Materials, 2009, 163, 931-938.

40- H. Pahlavanzadeh, A.R. Keshtkar, J. Safdari, Z. Abadi, *Biosorption of nickel(II) from aqueous solution by brown algae: Equilibrium, dynamic and thermodynamic studies*, Journal of Hazardous Materials, 2010, 175, 304–310.

۴۱- محمد امین حسنی، گزارش فعالیت تحقیقات دوره ضرورت نخبگان؛ بررسی جذب زیستی توریموم از محلول های آبی توسط جلبک های قهوه ای خلیج فارس، پژوهشگاه علوم و فنون هسته ای، ۱۳۹۱.

۴۲- پریا پور کیوانی نرگو، پایان نامه کارشناسی، روش های جذب فلزات سنگین توسط جاذب ها؛ دانشگاه آزاد اسلامی واحد تهران جنوب، ۱۳۹۱.

۴۳- مرتضی زیودار، رهبر رحیمی، علی شعرانی، امیر سهرابی کاشانی، " بررسی و مقایسه روش های حذف فلزات سنگین از فاضلاب های صنعتی " مجله مهندسی شیمی ایران ۱۳۸۳. شماره ۱۰

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www.wikipedia.com

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