سیویلیکا - ناشر تخصصی مقالات کنفرانس ها و ژورنال ها گواهی ثبت مقاله در سیویلیکا CIVILICA.com

عنوان مقاله:

Use of organoclinoptilolite and a Sephadex® for removing harmful anions from aquaculture effluents

محل انتشار:

سومین همایش ملی آب و فاضلاب با رویکرد اصلاح الگوی مصرف (سال: 1388)

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نویسندگان:

Zoheir Shokouh Saljoghi Amir Shokooh Saljooghi - Department of Chemistry, Shahid Bahonar University of Kerman, Kerman, Iran

خلاصه مقاله:

Natural zeolites can have three major roles in aquaculture: (i) removing ammonia from ambient living water; (ii) producing oxygen to aerate water bodies; (iii) as a filler included in feed. Systems capable of removing undesired anions from wastewater effluents, even at extremely low concentrations, are a major need in the industry. At the present study the natural zeolite was characterized using XRD and XRF analyses. Modification was practiced with benzyl dimethyl tetradecyl ammonium chloride (BDTA) to increase the adsorption of neothorin (on the zeolite), C10H11AsN2Na2O11S2, which subsequently increase ion exchange capacity of zeolite per se. A anionic resin (sephadex®) was also applied. The effect of pH on the adsorption of ions has also been evaluated. Result showed that clinoptilolite treated with BDTA was more efficient in removing undesired ions from aquaculture wastewater. The selectivity sequences CrO4 2->SeO4 2->NO3 ->SO4 2->NO2->PO4 3- and CrO42->SeO4 2-> SO4 2-> PO4 3-> NO3 -> NO2 - were determined for clinoptilolite and resin, respectively. Results showed that modified zeolite had more capability to remove phosphorus, nitrite and nitrate than resin (p< 0.05). The optimum range of pH for both zeolite and resin for ions CrO4 2-, SO4 2-, SeO4 2-, PO4 3-, NO2 - and NO3 - were 6.5 - 7.5, 5.5 - 7, 5.8 - 7.5, 5.5 - 7.2, 5.5 - 7 and 6 - 7, respectively. Concludingly, due to lower cost of zeolite and its ability to remove common toxic .species, namely, phosphorus, nitrite and nitrate, it is recommended for moredetailed studies

کلمات کلیدی:

aquaculture, toxic ion species, modified clinoptilolite, BDTA, neothorin, sephadex

لینک ثابت مقاله در پایگاه سیویلیکا:



