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Obtaining Ionites from Cotton Grinding Waste

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Abstract: This in the article cotton combing from enterprises came out waste ion exchanger materials – ionites convert opportunity studied. Research to the results according to waste special chemical processing to give through effective ionites to take possible. Obtained ion exchangeability of ionites features from the test held, their water cleaning in the processes application opportunity evaluated. This method ecological problems reduce and industry from waste effective of use promising from directions one as seeing is released.

Keywords: Cotton waste, ion exchangers, ion exchange, environmental cleaning, industry waste, water clean, modify, re- work.

1. Introduction

Cotton industry large working release from networks one then harvest to be waste ecological problems brought This waste effective again processing not only ecological stability to provide, but new additional products to take It also allows. Ionites — ion exchangers materials division , chemistry , pharmaceuticals and water cleaning in the industry wide This is applicable . in the article cotton combing from enterprises came out from waste ionites to take technology analysis will be done.

2. Methods

Ionite to take process following from stages consists of:

1. **Raw materials preparation:** Cotton fiber waste gathers and physicochemical composition analysis will be done.
2. **Chemical processing to give :** Waste special reagents using modification Usually , sulfation is done and amino groups with modification to do methods is used .
3. **Ion exchanger properties assessment:** Received ionites cation and anion exchangeability ability special laboratory methods with is checked .
4. **Efficiency assessment :** Received ionites water cleaning or industry in the processes from the test is held.

3. Results

Transferred research this showed that:

- Cotton waste based on ionites to take possible and their ion exchanger properties effective result gives.
- Modified cotton from fibers taken ionites water in the content heavy metal ions effective hold remains.
- Cotton from waste prepared ionites economic in terms of cheap and ecological clean alternative solution is considered .

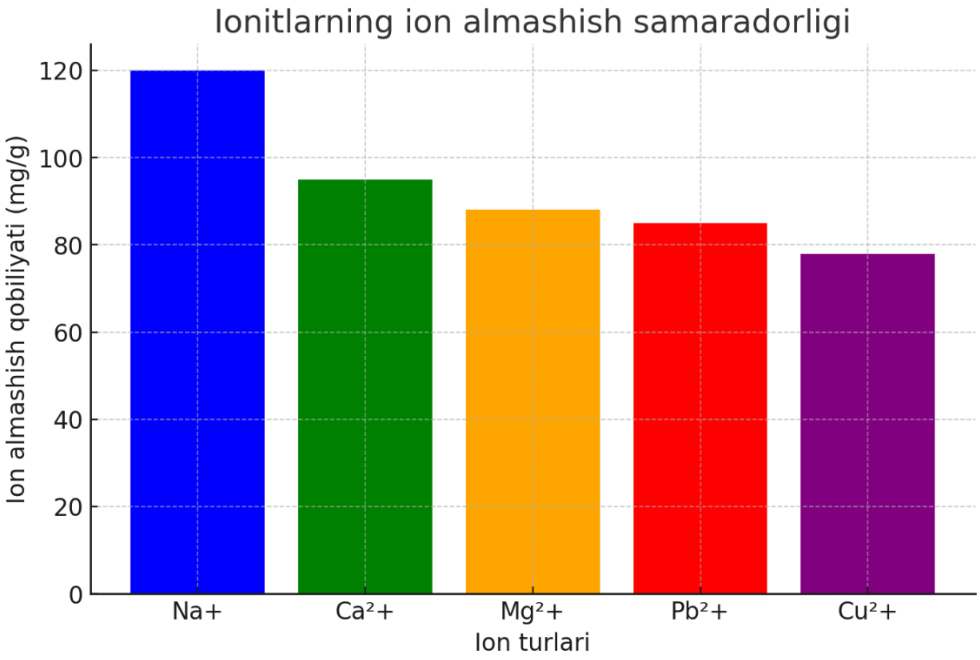

Figure 1. Ion exchange efficiency

Above diagram ionites various ions exchange ability shows . The most high sorption ability **Sodium (120 mg/g)** to the ion relevant , and the lowest **Cu²+ (78 mg/g)** to the ion relevant.

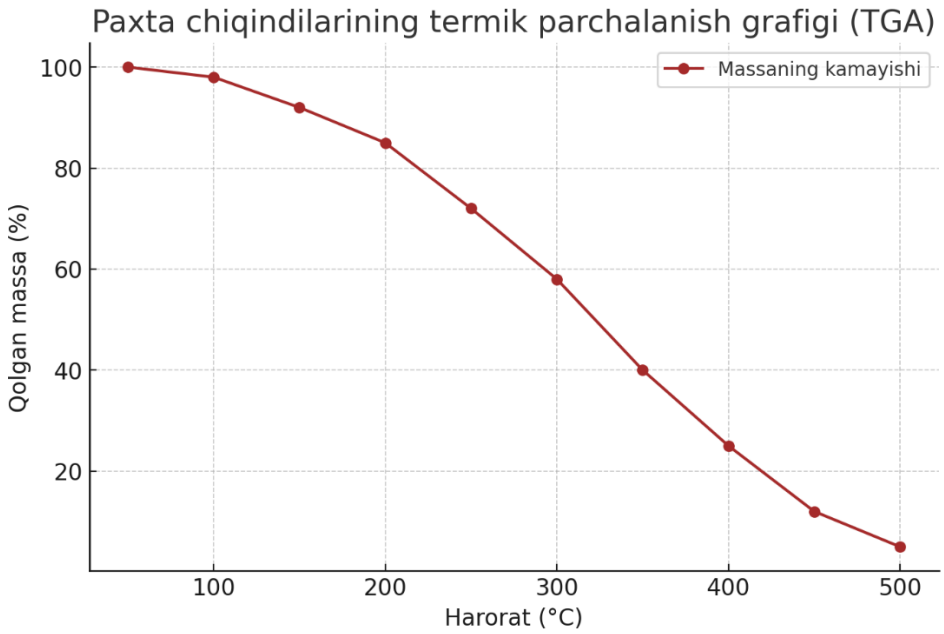

Figure 2. Cotton waste decomposition temperature thermal analysis graph (TGA) .

This is a graph. cotton waste thermal decomposition process (TGA results) It seems It is clear that the temperature mass as it increases decreases sharply at 280° C decomposition is observed , this and optimal processing to give temperature to determine help gives.

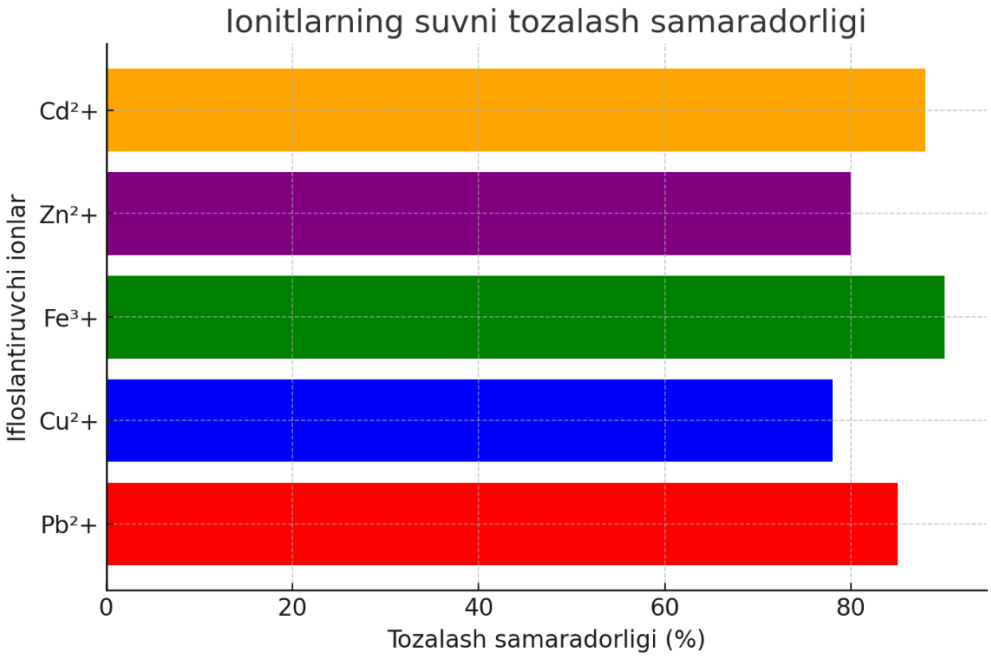

Figure 3. Water cleaning efficiency . Pb^{2+}, Cu^{2+}, Fe^{2+}, Zn^{2+}, Cd^{2+} ions cleaning level

Above diagram ionites water pollutant metal from ions cleaning efficiency shows . The most high cleaning level **Fe^{3+} (90%)** and **Cd^{2+} (88%)** in ions observed , this and ionites water in cleaning effective that proves .

4. Discussion

Cotton combing from enterprises came out waste to ionites convert ecological and economic in terms of useful . Such approach waste reduction , ecological problems eliminate to grow and ion exchanger materials cheap in a way working release opportunity It also gives method industry waste again work and from resources effective use in matters important importance has .

5. Conclusion

Cotton combing from enterprises came out from waste ionites to take possible and this method ecological problems in reduction big importance has . Research results this shows that such ionites water cleaning in the processes effective application possible . In the future this technology further develop and industry on a scale wide current to grow important importance profession will reach .

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