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SYNTHESIS OF NEW HYDROGELS BASED ON CROSS-LINKED POLYMERS AND STUDY OF THEIR RESULTS

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Abstract: The results of the research conducted in this article are scientifically based on the issue of the technology of obtaining high swelling hydrogels using production waste and local raw materials, which allow to improve the quality of the product, increase the volume of production and reduce the cost.

Key words: GIPAN, hydrogels, bifunctional compound, polymer hydrogel, lyogell, xerogel, coagell.

Introduction

Polymer gels are called three-dimensional cross-linked polymers dissolved in a solvent. They can be natural or synthetic (polyacrylamide gels, polyacrylic acid, etc.). The amount of solvent in the gel can be quite high (up to 99.9%). Although gels are mostly liquids, they are able to hold their shape like solids. The reason for this is that the polymer chains that make up the gel are interconnected into a single spatial framework - the polymer network.

Research materials and methodology

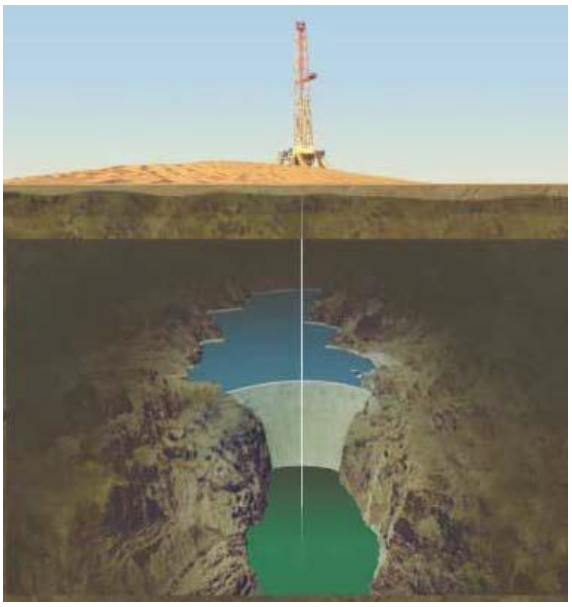
The effect of hydrogel is based on its ability to trap moisture around the plant, resist evaporation, and attract groundwater. The plant can use not only irrigation and atmospheric moisture, but also hydrogel water. It also reduces the consumption of water in cultivated plants. In addition, water absorption is high in rocky areas, and the hydrogel used there can retain water around the roots.

Hydrogels should be mixed with seeds during planting. These hydrogels, which are consumed in almost the same amount as the planted seeds, can absorb the water absorbed into the soil during rain and irrigation, keep it around the roots for a long time, and provide the plant with water. As a result, the time between watering the land increases and saves a lot of water. Most importantly, it is environmentally friendly. Also, hydrogels provide water to the plant until the next watering. During the next watering, the hydrogel will be soaked in water again and will continue to supply the plant with water.

RESEARCH RESULTS

Recently, polyelectrolytes are being synthesized on the basis of gels. Some polyelectrolytes are valuable superabsorbents and are used in many fields. Such polyelectrolytes have a strong selective effect. For this reason, they are widely used as ionites.

The creation of rubber and other material compositions with hydrogels has further expanded the field of application of gels.



Limiting the flow of water to the bottom of the used well is one of the most important problems in the system of measures to increase the efficiency of oil field development and increase oil production. In wells that use several productive layers at the same time, irrigation occurs unevenly - water passes through more permeable layers and intermediate layers. In most cases, the flow of water through such layers is so strong that the well seems to be completely flooded. Under such conditions, uneven development of individual layers occurs. The damage of bottom water to the normal operation of mines and wells is not small. Limiting the flow of water to the bottom of the used well is one of the most important problems in the system of measures to increase the efficiency of oil field development and increase oil production. In wells that use several productive layers at the same time, irrigation occurs unevenly - water passes through more permeable layers and intermediate layers. In most cases, the flow of water through such layers is so strong that the well seems to be completely flooded. Under such conditions, uneven development of individual layers occurs. The damage of bottom water to the normal operation of mines and wells is not small. Selective isolation methods (SMI) are methods that use materials injected into the entire perforation of the layer. The resulting precipitate, gel or hardening agent increases the filtration resistance only in the water-saturated part of the formation, and clogging of the oil part of the formation does not occur. No need to re-pierce with SMI.

CONCLUSION

Obtaining compositional hydrogels based on GIPAN and other ingredients and studying their physico-chemical properties using the above-mentioned methods indicate that the results obtained as a result of the experiment are close to each other. The experimental error in the results of the conducted research is 2-3%.

Study of GIPAN cross-linking was carried out in the presence of initiator in aqueous solutions. The amount of cross-linking agent varied between 0.1-7% by weight of GIPAN.

The change in reaction temperature has a significant effect on the entire gelation process, so at temperatures above 60 C, the reaction lasts for a short time. Thus, the optimal temperature of 70 C was selected, at which gelation occurs in a few minutes.

LIST OF REFERENCES

1. Boltayeva, S. (2023).PREPARATION OF EMULSIONS FROM OIL EXTRACTS AND EVALUATION OF QUALITY INDICATORS.B CENTRAL ASIAN JOURNAL OF EDUCATION AND INNOVATION (Т.2 Выпуск 10, сс. 93-97).
2. Boltayeva Shahribonu Ahmad qizi. MEDICINAL PROPERTIES OF CLOVE PLANT ANDMEDICINE PREPARATION METHODS. (2023) Laboratorium Wiedzy Artur Borcuch (182-185)
3. Boltayeva Shahribonu Ahmad qizi. Tirnoqgul o'simligining dorivorlik xususiyatlari va dori tayyorlash usullari.Analytical Journal of Education and Development. (14-17)
4. Boltayeva, S. (2023). PREPARATION OF EMULSIONS FROM OIL EXTRACTS AND EVALUATION OF QUALITY INDICATORS. Центральноазиатский журнал образования и инноваций, 2(10 Part 3), 93-97.
5. Boltayeva, S. (2023). GIDROLIZLANGAN POLIAKRILONITRILNING EPIXLORGIDRIN BILAN O'ZARO TA'SIRI JARAYONINI O'RGANISH, OLINGAN BIRIKMALARNING TUZILISHINI ANIQLASH. Центральноазиатский журнал образования и инноваций, 2(11), 71-76.
6. Boltayeva, S. (2023). O'ZARO BOG'LANGAN POLIMERLAR ASOSIDA YANGI GIDROGELLAR SINTEZI, VA NATIJALARINI O'RGANISH. Центральноазиатский журнал образования и инноваций, 2(12), 146-151.
7. Boltayeva, S. (2023). O'ZARO BOG'LANGAN POLIMERLAR ASOSIDA YANGI GIDROGELLAR SINTEZI, VA NATIJALARINI O'RGANISH. Центральноазиатский журнал образования и инноваций, 2(12), 146-151.
8. Bakhshullayevich, T. B., & Shaxina, S. (2022). Classification of Enzymes. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 2(5), 37-39.
9. Toxirov, B. B., Tagaeva, M. B., & Shukurova, S. (2023). Obtaining stabilized enzymes and their application in the food industry. Science and Education, 4(4), 529–537. Retrieved from https://openscience.uz/index.php/sciedu/article/view/5560
10. Tuyg'unovna, S. S. (2023). DORIVOR NA'MATAKNING FOYDALI XUSUSIYATLARI VA TIBBIYOTDA QO'LLANILISHI. TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI, 3(9), 11-13.
11. Shukurova, S. (2023). DORIVOR ACHCHIQ BODOM URUG'INING SHIFOBAXSHLIGI, DORI TAYYORLASH USULLARI. Центральноазиатский журнал образования и инноваций, 2(10 Part 3), 116-120.
12. Tuyg'unovna, S. S. (2023). USEFUL PROPERTIES OF THE MEDICINAL PRODUCT AND USE IN MEDICINE. Gospodarka i Innowacje., 40, 179-181.