

# Investigation of the treatment from IONS of heavy metals whith wastewater of pulp production technology from husk of grain varieties

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## Abstract

© 2019, Institute of Advanced Scientific Research, Inc.. All rights reserved. New reagents from waste generated as a result of isolation of cellulose from fruit shells of cereal crops (wheat, oats and barley) by alkaline cooking have been obtained. for the purification of water from heavy metal ions (ITM) ( $Zn^{2+}$ ,  $Fe^{3+}$ ,  $Ni^{2+}$ ,  $Cu^{2+}$ ). These reagents contain alkaline lignin, dissolved polysaccharides, cellulose fragments, and unreacted NaOH. Since the wastewater obtained contains high-molecular compounds of plant origin, it has been proposed to use them as flocculants for water purification from ITM. Initially, experiments were carried out to remove ITM from aqueous media by traditional reagents-solutions of NaOH,  $Ca(OH)_2$ , and also together with flocculants of various nature (Prestol anion-, cationic, nonionic) and coagulant  $FeSO_4$ . The next step was to study the obtained alternative reagents. It has been shown that alkaline reagents possess the properties of flocculants due to the enlargement of the sizes of the precipitated particles, as well as the decrease in the values of the acid and ether number in the filtrates after purification from the ITM, which indicates participation of fragments of high molecular compounds with the formation of floccules with metal hydroxides.

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## Keywords

Alkaline reagent, Copper and zinc ionscoagulation-flocculation purification, Iron, Nickel

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