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Synthesis and Analysis of Dialdehyde Starch Employing a Novel Approach in Acidic Conditions

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Abstract:

Many studies have aimed to use organic acids as alternatives to mineral acids in order to minimise the environmental impact of these acids.

This study focuses on developing environmentally friendly dialdehyde starch (DS) utilizing a onestep synthesis of acid hydrolysis and oxidation using starch as a raw material and sodium periodate oxidizing agent. The process of oxidation of starch was carried out at different reaction times.

The dialdehyde starch (DAS) was characterized by Fourier transform infrared spectroscopy (FT-IR) to determine its structure. In addition, the percentage of aldehyde content of DAS oxidized was also determined. The results showed that the starch was successfully oxidized and the longer the reaction time, the higher the percentage of aldehydes in the DAS.

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