

## Eco-composite based on both mercerized starch and cellulose for medical application

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A new method for preparation of starch/cellulose composite is reported. The composite was obtained by mixing both mercerized cellulose and corn starch. Different techniques have been utilized for characterization of starch/cellulose composite such as FT-IR, X-ray diffractometer and differential scan calorimetric. FT-IR showed a C-O bond stretching band at 9.00 m<sup>-1</sup> for starch/cellulose composite (1:1) sharper than those in both cellulose and starch, indicating that there is interaction between the amorphous starch and cellulose. Moreover, X-ray diffractometer showed a strong interaction between both mercerized cellulose and starch at 80°C due to a possible enhancement in the close packing of the starch molecules. However, starch/cellulose composite at a ratio of 2:1 exhibited the smallest value of  $\Delta C_p$  compared to those of different ratios. This finding indicates that starch/cellulose prepared in a ratio of 2:1 has the lowest thermal expansion and the highest thermal stability.

### Biography

Sherif M. A. S. Keshk has completed his Ph.D. at the age of 30 years from University of Tokyo Metropolitan University and postdoctoral studies from both Tokyo and Kochi universities. He is the Director of Environmental Biotechnology Lab at Ain shams university, Cairo, Egypt. Now he is working at King Khalid University since 2009. He is also the Editorial Board Member of American Journal of Polymer Science, Bioscience Biotechnology Asia, International Journal of Agriculture and Food. He is member in Cellulose Society of Japan, Arab Society of Material Science, Egyptian Society of Biotechnology.

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