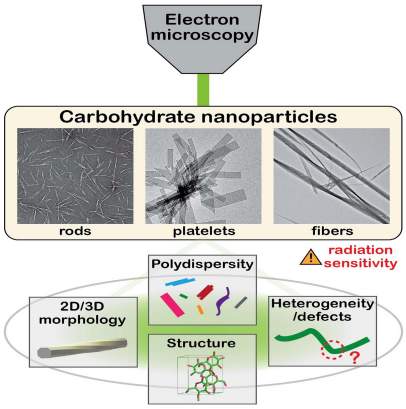


Recent Advances in Electron Microscopy of Carbohydrate Nanoparticles

Description

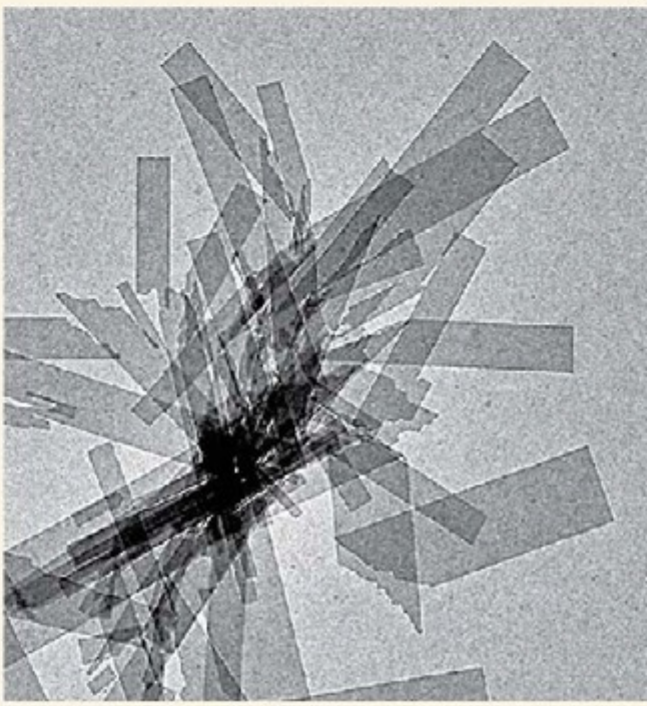
Carbohydrate nanoparticles, both naturally derived and synthetic ones, have attracted scientific and industrial attention as high-performance renewable building blocks of functional materials. Electron microscopy (EM) has played a central role in investigations of their morphology and molecular structure, although the intrinsic radiation sensitivity of carbohydrate crystals has often hindered the in-depth characterization with EM techniques.

Electron microscopy

Carbohydrate nanop



rods



platelets

Polydispersity

This contribution reviews the recent advances in the electron microscopy of carbohydrate nanoparticles. In particular, we highlight the recent efforts made to understand the three-dimensional shape and structural heterogeneity of nanoparticles using low-dose electron tomography and electron diffraction techniques coupled with cryogenic transmission electron microscopy.

Category

1. News