

An organic-metal nanocomposites attract attention as high-performance materials which possess high flexibility, easy processability and the lightweight originated from organic ingredient, and high mechanical strength, thermal resistance, electric and thermal conductivities from metal. Cellulose is well known as the most abundant renewable polymer on the earth. Furthermore, cellulose nanofiber, prepared by TEMPO-mediated oxidation treatment (TOCN) with 3 nm of fiber diameter, is well known to possess high mechanical properties, high specific surface area and high carboxylate group density.

TOCN/Ag nanocomposite was prepared using carboxylate groups along the entire TOCN surface as host compounds to introduce Ag ions and reducing there. Structure and properties of TOCN/Ag nanocomposite were described. For example, the thermal conductivity of TOCN/Ag nanocomposite with 10 wt% Ag loading was 180 % higher than that of the TOCN. In addition, TOCN/nanodiamond, TOCN/layered silicate would be also described.

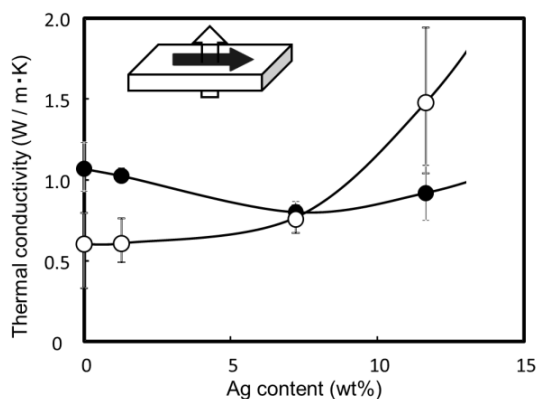


Fig.1 X-ray diffraction profiles of TOCN and TOCN/Ag nanohybrid with different Ag contents.