

第278回

物質科学セミナー

題名：Investigation of the Crystallization Behavior and Mechanical Properties of Poly(vinyl alcohol) Nanocomposites with Cellulose Nanofibers

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日時：2026. July 28 (Tue.) 12:50 – 14:20

場所：総合科学部 J303

講演要旨：

This research investigates the effects of cellulose nanofiber (CNF) loading and residual moisture on the crystallization, structural development, and mechanical properties of poly(vinyl alcohol) (PVA)/CNF nanocomposite films. Using thermal analysis, X-ray scattering, spectroscopy, microscopy, and mechanical testing, it was found that low CNF contents promote PVA crystallization by acting as nucleating agents, whereas higher CNF contents suppress crystallization by restricting polymer chain mobility. Residual moisture was also shown to significantly influence crystallization and stiffness. These findings provide new insights into the relationship between nanostructure, crystallization, and mechanical properties, offering useful guidelines for designing high-performance, sustainable polymer nanocomposites.

理工学融合共同演習の認定科目です。

学位公聴会を兼ねて実施します。

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