

伸長流動によるバイオエンブラ/汎用樹脂のアロイ化技術に関する研究

▶ 背景

バイオエンブラ

+

汎用性樹脂

= **ポリマーアロイ**

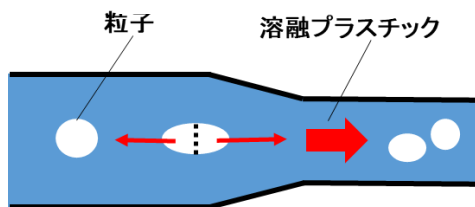
それぞれの特性を補い合った材料の取得が期待

▶ アロイ化の課題

- ・一般的にポリマーアロイは**非相溶性**であり、良好なアロイが取得できない
 - ・バイオエンブラは高温域で**熱分解**が生じる場合が多い
- ⇒ **せん断流動でのアロイ化には限界**

▶ 解決策

伸長流動



- ・幅広い粘度比で分散が可能
- ・発熱を生じない混練が可能



XBD



二軸押出機

二軸押出機にXBDを組み込み、混練中に伸長流動場をつくる
⇒ 良好なアロイの取得できるのでは？

▶ 目的

伸長流動を導入した二軸押出機による混練によって、分散相である汎用性樹脂の分散性に与える影響を明らかにすること。

Research on technology for alloying bio-based engineering plastics/commodity resins by elongational flow.

▶ Background

Bio-based engineering plastics + **Commodity resins** = **Polymer alloy**

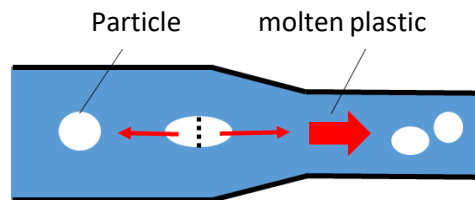
Expected to acquire materials that complement each other's characteristics

▶ Alloying Issues

- Polymer Alloy are incompatible and good alloys cannot be obtained
- Bio-based engineering plastics undergoes thermal decomposition in the high temperature range
⇒ Shear flow ×

▶ Solution

Elongation flow



- Dispersion over a wide range of viscosity ratios
- Mixing without heat generation is possible



XBD



Twin Screw Extruder

XBD is incorporated in a twin-screw extruder to create an elongated flow field during mixing
⇒ Good alloys can be acquired.

▶ Purpose

To clarify the effect of mixing by twin-screw extruder with elongational flow on the dispersion of commodity resins.