

背景

サイクルタイムの短い**射出成形**に着目し、
材料の**機械的性能を向上**させることで
幅広い部材へのFRPの適用を目指す

射出成形法



(引用 東洋機械金属HP)

材料



PA66 + 炭素長繊維
(ダイセルポリマー製)
繊維長: 9mm



PA66 + アラミド長繊維
(ダイセルポリマー製)
繊維長: 7mm

成形時間：短（1分～数分）

炭素繊維: **軽量**でありながら、**強度が高い**
アラミド繊維: **耐摩耗性**と**衝撃性に優れる**

アラミド繊維を添加することで
強度が低下する

→実験と解析から強度の要因を調査

目的

射出成形における材料の強度メカニズムを調査し、
炭素/アラミド繊維強化熱可塑性樹脂複合材料の機械的特性の向上を目指す

Research on Mechanical Properties of Carbon/Aramid Fiber Reinforced Thermoplastic Composites

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Background

Focusing on **injection molding**, which has short cycle times
By improving the mechanical performance of the material, FRP can be applied to a wide range of components by improving the mechanical performance of the material.

Injection Molding



Materials



PA66 + Carbon fiber
Fiber length: 9mm



PA66 + Aramid fiber
Fiber length: 7mm

Cycle time : short(few minutes)

Carbon fiber: **Lightweight** and **strong**

Aramid fiber: Excellent **abrasion** and **impact resistance**

strength is reduced
by the addition of aramid fibers
→Investigation of strength factors
through experimentation and analysis

Purpose

To investigate the strength mechanism of materials in injection molding and to improve the mechanical properties of carbon/aramid fiber reinforced thermoplastic composites, Aiming to improve the mechanical properties of carbon/aramid fiber-reinforced thermoplastic composites