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## 论文

### 导流介质对真空导入模塑工艺树脂流动行为的影响

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摘要:

采用可视化流动实验方法研究了高渗透率导流介质对真空导入模塑工艺中树脂流动行为的影响。结果表明: 导流介质能较大幅度地减少树脂的充模流动时间, 且充模时间随着导流介质使用比例的增加而呈线性减少的关系; 导流介质的提速作用随着预成型体厚度的增加而逐渐减弱; 预成型体上下表面树脂流动前沿位置差距与预成型体厚度呈良好的线性增加关系, 说明导流介质的影响作用具有明显的厚度效应。厚度效应原理为真空导入模塑工艺过程的参数优化和保证制品质量提供了理论依据。

关键词: 真空导入模塑工艺 导流介质 树脂流动行为 达西定律

### Effect of distribution medium on resin flow behavior in vacuum infusion molding process

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Abstract:

he effect of high-permeable distribution medium

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(DM) on resin flow behavior in the vacuum infusion molding process was studied through visualization flow experiments. The results show that DM is able to largely reduce the mold filling time in vacuum infusion molding process, and mold filling time is linearly reduced with the scale of DM. The flow-enhancement effect of DM decreases with the thickness of fiber preforms. The difference of resin flow front between top and bottom of fiber preforms linearly increases with the thickness of fiber preforms. The flow-enhancement mechanism of DM takes markedly on thickness effect. This thickness effect is important for vacuum infusion molding processing parameter optimization and quality control.

Keywords: vacuum infusion molding process  
distribution medium resin flow behavior Darcy's law

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