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Dynamic Visualization of Melt Flow Behaviour inside Split Runners in Ultra-High-Speed Injection Molding

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In this study, we attempted to dynamically visualize melt flow behaviour at the runner split portion, especially under ultra-high-speed injection molding. Visualization experiments were conducted using a glass-inserted mold, which was modified from the original visualization mold structure in order to improve the pressure endurance of the glass-inserted visible area. This paper deals with visualization analyses of melt flow behaviour inside two types of experimental split runner systems (three inclined split runners, and cascade layout of cross-shaped runners) from a low injection rate to ultra-high-speed filling rate, focusing on what happens inside the runner split area.