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Real-time Diagnosis for Micro Powder Injection Molding using Ultrasound

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Abstract

Real-time diagnostics of ceramic powder injection molding with a micromolding machine was performed using ultrasound. Miniature ultrasonic sensors were integrated onto the mold insert. Melt front, solidification and part detachment of the feedstock inside the mold cavity were observed. The assistance of ultrasonic velocity in feedstock inside the mold cavity, the ultrasonic contact time during which the part and mold are in contact and holding pressure may minimize part dimension variation.