

## Some Investigations of Primary Slurry Used for Production of Ceramic Shells

**Authors :** Balwinder Singh

**Abstract :** In the current competitive environment, casting industry has several challenges such as production of intricate castings, near net shape castings, decrease lead-time from product design to production, improved casting quality and to control costs. The raw materials used to make ceramic shell play an important role in determining the overall final ceramic shell characteristics. In this work, primary slurries were formulated using various combinations of zircon flour, fused silica and aluminosilicate powders as filler, colloidal silica as binder along with wetting and antifoaming agents (Catalyst). Taguchi's parameter design strategy has been applied to investigate the effect of primary slurry parameters on the viscosity of the slurry and primary coating of shell. The result reveals that primary coating with low viscosity slurry has produced a rough surface of the shell due to stucco penetration.

**Keywords :** ceramic shell, primary slurry, filler, slurry viscosity, surface roughness

**Conference Title :** ICSRD 2020 : International Conference on Scientific Research and Development

**Conference Location :** Chicago, United States

**Conference Dates :** December 12-13, 2020