

Technological Properties and Characterization of Ceramic Slurries Based on Yttrium Iii Oxide for Shell Moulds Preparation

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Abstract : The goal of this study was to analyze the technological properties of ceramic slurries based on Yttria (Y₂O₃) for fabrication "prime coat" in ceramic shell moulds for investment casting process. The Yttria with two different granulation of (200# and 325#) in ratio-65%-35% by weight were used for preparation the ceramic slurries. Solid phase was 77 wt.%. The experiment was carried out for 96h. Main technological properties like: viscosity, pH, plate weight test, and density were measured every 24h. Additionally, dynamic viscosity was performed after 96h of test. For further material characterization SEM observations, Zeta potential, XRD measurements were done. Those research showed that Yttria ceramic slurries had very promising properties and there are perspective for future fabrication.

Keywords : ceramic slurries, mechanizal properties, viscosity, fabrication

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