
Synopsis Seminar

Seminar Title	: Study on alumina–spinel castable: preformed and insitu spinel
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Venue	: Seminar Hall, Ceramic Engg. Dept
Date and Time	: 03 Jul 2025 (10:30 AM)
Abstract	: Alumina spinel castable, containing pre-reacted and in situ spinel, is becoming extremely important for steel ladle lining due to its unique combination of properties such as high refractoriness, low porosity, excellent hot strength, good resistance to thermal shock, superior resistance against corrosion, etc. In the present work, spinel containing high alumina castable is studied by using pre-formed and in-situ spinel in the castable composition. The work is planned to study the effect of different particle size distributions, namely vibratable and self-flowing consistency effect of spinel content using varying amounts of preformed spinel and fine magnesia respectively effect of flow modifier (fume silica) content effect of addition alumina dispersants (no fume silica containing), effect of property enhancing additives etc. Castable compositions are processed conventionally, and vibratable and self-flow compositions were studied using a distribution coefficient (as per Dinger and Funk model) of 0.29 and 0.21, and the castables are evaluated at 110, 1000, and 1550 °C for the various refractory properties. Slightly lower density and strength values are found for castables with in-situ spinel composition, due to volume expansion associated with spinel formation.