DEPARTMENT OF

ENERGY AND MINERAL ENGINEERING

COLLEGE OF EARTH AND MINERAL SCIENCES

EGEE/PNGE 590 Colloquium

Study on the Effect of Operational Temperature and Time on the Characteristics of Melting Process Slag Aggregate

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Abstract:

The disposal of the industrial sludge and sludge from water works has become an important issue in Taiwan. Among the alternatives for sludge quantity reduction, the sludge melting process not only reduces the volume of sludge, but enables the sludge slag to be used as a construction material. The objective of this study is to investigate the influence of operational temperature and time on the characteristics of slag, and further evaluate the effect of operational condition changes on molten sludge recovery as fine aggregate. The co-melting mixing ratio of calcium fluoride sludge and water works sludge is four to six, at which ratio a relatively low eutectic temperature could be found. The experimental melting temperatures were set from 1,200 ^{o}C to 1,350 ^{o}C in 50 ^{o}C increments, and the experimental melting times were 10, 20, and 30 minutes. Each batch of molten sludge was cooled in water and ground to match the aggregate gradation code. After that, gravity, absorption, void, unit weight, and soundness of the slag samples were measured.

Thursday, February 7, 2008
1:00 – 2:15 p.m.
157 Hosler Building

light refreshments will be served at 1:00 p.m.