

**AGENDA**  
**Fly Ash in Concrete, ACI 232**  
**October 15, 2018, 1:00 – 4:00**  
**Rio Hotel Jaguar A-B**  
**Las Vegas, NV USA**

1. Welcome by Chair (L. Sutter)
2. Mini-Session: Recovered Fly Ash for Use in Concrete (1:00 PM – 2:00 PM) – Titles and Abstracts attached to this agenda (Attachment 1).
3. Call to Committee 232 Meeting to Order (L. Sutter)
4. Introductions by attendees
5. Approval of the Agenda
6. Approval of the Minutes of the March 26, 2018 meeting (done by ballot)
7. Membership update – 35 Voting, 48 Associate, 1 Consulting, 1 Liaison
  - a. Quorum Check (40% - 14 voting members)
8. Chair's Comments
  - a. TAC Breakfast Report
9. Liaison Reports
  - a. TAC – M. Brown
  - b. ACAA – T. Adams
  - c. ASTM – B. Descheneaux
  - d. NRMCA – K. Obla
  - e. NIST – D. Bentz
  - f. CIA – Dak Baweja
  - g. FHWA
  - h. Others
10. 232.2R - Revisit outline, Assign chapter authors
11. New Documents
  - a. Tech Note – Discuss TAC comments
12. Sessions this Meeting
  - a. Mini Session: Recovered Fly Ash for Use in Concrete
13. Future Sessions
14. Old Business
  - a. Use of recovered ash - Discussion & Updates (F. Rajabipour)
  - b. Bottom ash – Strategic fit within ACI
15. New Business
16. Adjournment

## Attachment 1

### **MINI SESSION: Recovered Fly Ash for Use in Concrete Mon, October 15, 2018 1:00 PM - 2:00 PM, Jaguar A-B**

The objective is to provide information on the recovery of fly ash from landfills or impoundments and discuss how that ash is processed for use in concrete.

Learning Objectives:

1. Summarize the recovery process of fly ash from landfills or impoundments;
2. Discuss what processing steps are used to render this material suitable for use in concrete;
3. Review data on how recovered ash performs when used in concrete;
4. Apply current tests and specifications apply to recovered fly ash.

#### **Extending the Supply of Supplementary Cementitious Materials with Recovered Fly Ash**

Presented By: Ivan Diaz-Loya

Affiliation: Boral Resources

Description: Fly ash has become an integral part of concrete mixtures in the US. The concrete industry relies on fly ash to improve workability, reduce bleeding, improve pumpability of fresh concrete and to improve the durability of concrete structures. However, in recent years the amount of concrete-grade fly ash generated from coal-fired power plants has been in decline. Since 2008, fly ash production in the US dropped from 72 to 38 million tons according to annual surveys conducted by the American Coal Ash Association. Although, the concrete industry has historically used less than 38% of the total amount of fly ash produced, still this decrease has strained the supply-demand chain. One alternative to meet regional demands for supplementary cementitious materials is by recovering fly ash from landfills and surface impoundments. This presentation shows the performance evaluation of fly ash recovered from a landfill compared to fly ash that is currently being produced at the same plant.

#### **Landfilled Fly Ash Reclamation and Beneficiation Using Triboelectrostatic Separation**

Presented By: Eric Koehler

Affiliation: Titan America

Description: Triboelectrostatic separation has been used for the commercial beneficiation of coal combustion fly ash to produce a low carbon product for use as a cement replacement in concrete for over twenty years. With 20+ separators in 14 coal-fired power plants across the world, ST Equipment and Technology LLC's (STET) patented triboelectrostatic separator has been used to produce over 18 Million tons of low carbon product. Commercial triboelectrostatic beneficiation of fly ash has been performed primarily on dry "run of station" fly ash. Studies have shown that the exposure of fly ash to moisture, and subsequent drying influences the triboelectrostatic charging mechanism, with carbon and mineral particles charging in the opposite polarity to that experienced with run of station ash. Pilot studies have been performed by STET with landfilled domestic and foreign ashes to determine the effect of moisture exposure on separation efficiency of several ashes that have been reclaimed from landfills and dried. Charge reversal was experienced following drying, but overall separation efficiency was achieved equivalent to that experienced with fresh run of station ash.

#### **Reclaimed Fly Ash: Have No Fear**

Presented By: Tilghman Keiper

Affiliation: The SEFA Group

Description: Harvesting fly ash from fill sites and surface impoundments is a mature and commercial means of meeting current and future demands for high quality pozzolan in concrete. This presentation reviews current specifications and tests, and compares and contrasts freshly generated ash to that harvested from legacy storage sites.

#### **Protocol for Sampling and Evaluation of Landfilled Fly Ash for Use as Concrete Pozzolan**

Presented By: Farshad Rajabipour

Affiliation: Pennsylvania State University

Description: This talk presents a statistics-based protocol for sampling and testing fly ash landfills to evaluate the degree of ash uniformity across the landfill and to identify the necessary beneficiation methods. The required number of boring samples is determined based on the reliability of historical utility data, test results on preliminary samples, and the acceptable tolerance on fly ash properties. A case-study of a fly ash landfill in Pennsylvania is presented.