

**Meeting Minutes**  
**ACI Committee 236: Material Science of Concrete**  
**Monday, October 22, 2012, 4:30-5:30 pm**  
**Sheraton City Centre: City Hall Room**  
**Toronto, Ontario**

**Voting members in attendance:** Juenger, Maria G (Chair); Grasley, Zachary (Secretary); Boyd, Andrew; Riding, Kyle; Bullard, Jeff; D'Ambrosia, Matthew; Rangaraju, Prasad; Vichit-Vadakan, Wilasa; Kurtis, Kim; Ley, Tyler; Ideker, Jason; Shi, Caijun; Lange, David; Sobolev, Konstantin; Wang, Kejin; Nokken, Michelle; Nemati, Kamran; Brown, Paul; Rothstein, David; Shao, Yixin; Betts, Jeremy; Tanesi, Jussara; Koehler, Eric; Isgor, Burkan; Peethamparan, Sulapha; Khayat, Kamal;

**Associate members in attendance:** Hartell, Julie Ann; Ferron, Raissa; Bassuoni, Mohamed; Ferraris, Clarissa; Castro, Javier; Pour-Ghaz, Mohammed;

**Visitors:** Mozenski, Scott; Sanchez, Leandro; Deir, Elisabeth; Yahia, Ammar; Byard, Benjamin; Schindler, Anton; Lopez, Mauricio; Komar, Andrew; El-Hassan, Hilal; Bentivegna, Anthony; Dongell, Jonathan; Werner, Anne; Barcelo, Laurent;

1. Meeting called to order by Chair Maria Juenger at 4:38 pm. Introductions by everyone in room.
2. The purpose of meeting and agenda were reviewed by Juenger.
3. Juenger gave the membership update (61 voting members (no change from previous), 2 consulting members, 62 associate members (-2)). 8 subcommittee members that are not members of the main committee.
4. Clarissa Ferraris motioned to approve the minutes from Spring 2012, David Lange seconded. The minutes were unanimously approved.
5. Report from TAC liaison Clarissa Ferraris (with input from Juenger):  
 ACI is trying to increase interaction in ACI and between ACI and other similar international organizations. Free professional photos are available from ACI at this convention to go on the ACI website.
6. Sub-Committee and Task Group Reports:

<b>Sub-committee/Task Group</b>	<b>Chair</b>	<b>Update</b>
236-D Nanotechnology of Concrete	Sobolev	Sobolev: Met yesterday. Main goal was to discuss ballot on report (on whole document). Voting closed Oct 7. Document "Report on Applications of Nanotechnology." Addressed negatives and comments during meeting. Request 2 weeks to address issues before sending to the main committee for balloting.
236-TG1 Advanced Analysis Techniques for Concrete	Shao	Shao: No formal meeting yet [first meeting was next day]. Will make list of analysis tools. Will ask, "Are they advanced?" Will create standard format to describe each technique, and ultimately will create informational document for each technique. Discussion will be on quantitative methods. Must get permission from TAC before starting document – have not done this yet. Members were welcomed to join.

236-TG2	Sustainability Engineered by Materials Science	Rajabipour	Juenger (on behalf of Rajabipour): Had session yesterday. Yixin Shao will present tomorrow during meeting on beneficial use of CO <sub>2</sub> in concrete production. Part of mission of subcommittee is to provide a forum for topical presentations.
236-TG4	Modeling and Simulation Methods	Sant	Bullard (on behalf of Sant): Meeting tomorrow. Plan to do a session for 2013. Will discuss recent NIST vision statement document (hydration roadmap).

7. Further update on 236.YR: Report on Nanotechnology and Nanoscience of Cement-based Materials: For first time, document will be balloted with full committee members. Members are asked to become associate members (rather than voting members) if they do not want to participate. Will have 30 days once opened for voting. Need people to respond. Jussara Tanesi suggests we could ballot by chapter. Sobolev says that 2 week grace period may be given for long documents. Juenger states that discussion of negatives will be done outside the main meeting time, preferably in private communication or in subcommittee meeting.
8. Liaison with other Committees: an important part of our mission is to coordinate with other committees.

<b>236 Member</b>	<b>Liaison to:</b>	<b>Update?</b>
Kim Kurtis	EAC	None
Jan Olek	123, 211, 234	None
Farshad Rajabipour	130	None
Tyler Ley	130A	Handling of negatives in document by spring.
Jason Ideker	201	New chair and secretary.
Christopher Ferraro	207, 224	None
David McDonald/Mahmoud Reda Taha	209	None
Prasad Rangaraju	221, 232, 233	Interest in co-sponsoring future session on high volume SCM and microstructure.
Andrew Boyd	228	Andrew is new chair. 236b elimination means no more conflict with permeability tests. They will utilize part of 236b document focusing on in situ techniques.
Maria Juenger/Zach Grasley	231	Working on thermal effects document, several chapters should be balloted within next year. Are interested in co-sponsoring possible session with 236.
Clarissa Ferraris	238, 552	Meeting tomorrow.
Dale Bentz	308	None
Jason Weiss	365	None

Narayanan Neithalath	522	None
Mahmoud Reda Taha	548	None
Other?	Other?	None

9. Update on publications in *Concrete International*:

Since last convention, a paper was published in the September 2012 Issue: “Virtual Testing in a Cement Plant “ by P. Sahachaiyunta, K. Pongpaisanseree, J.W. Bullard, P.E. Stutzman, E.J. Garboczi, and W. Vichit-Vadakan. New calendar of deadlines and themes for next year were noted by Juenger (see attached document). Juenger notes that there are many relevant themes for this committee. It was noted that it takes less than three months from submission to publication. As a reminder, this committee has an arrangement with Concrete International whereby papers on materials science topics will be periodically submitted on behalf of the committee, with manuscripts peer reviewed by the committee members or affiliates.

Abstracts submitted to R. Donahey

Calcium aluminate cements – J. Ideker and C. Gosselin. It was noted that this could fit the repair and renovation theme for April.

Papers suggested but not (yet) submitted

- Structural concrete with lightweight synthetic particles – M. D’Ambrosia
- Classification of Fly Ash with new characterization techniques – T. Ley
- Methods for testing concrete for permeability on site – M. Basheer and M. Nokken
- Self-healing and bio-inspired materials – Mondal and Ferron
- Alternative cements from a materials science perspective – M. Juenger
- Alkali-activated slags – S. Peethamparan and A. Radlinska

New ideas: Email Maria Juenger with your suggested idea.

10. Sessions at this convention:

“Teaching Sustainability to Current and Future Engineers”

F. Rajabipour and L. Rowland (with 130G)

Sunday, October 21, 3:30PM – 5:30PM, Dominion South

Session was well attended with about 35-40 in the audience. It was noted that there were several good talks that included industry perspective, too. There was a mixture of industry, faculty, and students present (mostly faculty and students).

11. Future sessions:

Spring 2013 – Minneapolis - Responsibility in Concrete

**(Sessions with preliminary approval – submit final session request by October 26, 2012)**

- Green Cement Technology – with SP under development (Neithalath, Obla, Hicks, and Meyers with Committees 232 and 130 as co-sponsors). Organizers started collecting abstracts and have speakers lined up.
- Early age properties of repair binders (D’Ambrosia and Riding with 231). Organizers state that they need one more speaker, and to contact Kyle Riding if interested. Prasad Rangaraju volunteered.

Fall 2013 – Phoenix: Innovation in Conservation

**(Submit preliminary session request by October 26, 2012)**

- Self-Healing and Bio-Mimetic Materials (Mondal and Wang). Organizers already have preliminary approval. 8 speakers are lined up. Organizers plan to have an SP and bring in international speakers. On track schedule-wise.
- Nano-based Cementitious and Polymeric Composites for Construction, Parts 1 & 2 (Taha and Nemunaitis, with Committee 548 co-sponsoring). Organizers already have preliminary approval. Speakers are lined up. On track schedule-wise.
- Cementitious Materials for Waste Containment (Kurtis, Sanchez, Juenger with Cozzi). Organizers just submitted preliminary form. Multiple sessions are desired along with support from related committees (co-sponsorship with Committees 349 & 552 suggested by Matt D'Ambrosia. and Kamal Khayat). It is noted that the proposed session timing is good since MS&T meeting is international at that time, so ACerS (American Ceramic Society) Nuclear Division members could attend.

#### Spring 2014 – Reno, NV

**(Submit prelim. session request by April 19, 2013 and SP request by September 21, 2012)**

- Hydration and Property Evolution of Concretes with Low Portland Cement Content (Bullard and Sant). Co-sponsored with 231. Will speak about this session in Task Group meeting (TG4). Organizers want to pull together characterization and experimental research with computer modeling. Session will probably have multiple sessions. Organizers have about a dozen proposed speakers. Approached Committees 231, 232, & 233 for co-sponsoring, and might also include 130A as a co-sponsor. The advantage to co-sponsoring is better broadcasting of sessions to members.

#### Suggestions with unspecified future dates

**F 2014 Washington, D.C. - Sp 2015 Kansas City – F 2015 Denver - Sp 2016 Milwaukee**

- Inorganic mineral replacements in concrete (with an interest in high volume replacements >50%) (Sant) perhaps with 231 and 130
- Modeling and Simulation of Fluid and Ion Transport in Cementitious Materials (Sant, Isgor, Shahsavari)
- By-product utilization center started by Naik would be good for Milwaukee in Spring 2016. Perhaps session in honor of Naik with 232 and 130 (Sobolev)
- Cement-admixture interactions (Kamal Khayat with help from Tyler Ley, Reno S 2014)
- Aggregate optimization (K. Sobolev with help from Eric Kohler and Raissa Ferron, DC F 2014)
- In situ transport measurements (co-sponsor with 228, M. Nokken and A. Boyd, F 2014?)

#### 12. New Business and Announcements

- NICOM 5, Chicago May 2015. Call for papers forthcoming. Call for support from 236 and ACI to be initiated by Sobolev.
- Workshop and session at TRB meeting on Nanotechnology, noted by Sobolev.
- ACerS-ACBM Annual meeting July 8-10 2013. David Lange and Paramita Mondal are contacts.
  - o Website: <http://ceramics.org/divisions/cements-division>. Details will be posted in next few months.
- SCMT3 in Kyoto Japan, 2013.
- New international journal: Journal of Sustainable Cement-based Materials. Taylor Francis is the publisher.
  - o Website: <http://www.tandfonline.com/loi/tscm20>

#### 13. Next meeting – Monday afternoon at ACI Spring 2013 in Minneapolis.

#### 14. Meeting adjourned at 5:33 pm. Motion by Ferraris, seconded by Sobolev.

# Editorial Calendar

Every issue of *CI* reaches the **40,000 most powerful decision makers** in the concrete industry. Be where these decision makers go for their most trusted concrete industry news and information in every issue.

## January

**Theme: Admixtures & Cementitious Materials**

Space Deadline: 11/12/2012  
Artwork Deadline: 11/21/2012

**Product/Services Showcase:**  
Admixtures

**Bonus Distribution:**  
World of Concrete

## February

**Theme: Infrastructure**

Space Deadline: 12/10/2012  
Artwork Deadline: 12/21/2012

**Product/Services Showcase:**  
Anchorage Systems

**Bonus Distribution:**  
ACI Spring Convention

## March

**Theme: Decorative & Architectural Concrete**

Space Deadline: 1/14/2013  
Artwork Deadline: 1/24/2013

**Product/Services Showcase:**  
Decorative Concrete Products

**Bonus Distribution:**  
ACI Spring Convention

## April

**Theme: Repair & Renovation**

Space Deadline: 2/11/2013  
Artwork Deadline: 2/21/2013

**Product/Services Showcase:**  
Repair Products

## May

**Theme: Concrete in Extreme Environments**

Space Deadline: 3/11/2013  
Artwork Deadline: 3/21/2013

**Product/Services Showcase:**  
Testing Equipment

## June

**Theme: Formwork**

Space Deadline: 4/10/2013  
Artwork Deadline: 4/23/2013

**Product/Services Showcase:**  
Formwork & Accessories

**Bonus Distribution:**  
ASCC CEO Forum

## July

**Theme: Floors & Foundations**

Space Deadline: 5/13/2013  
Artwork Deadline: 5/23/2013

**Product/Services Showcase:**  
Grinding & Cutting Equipment

## August

**Theme: Mixing, Placing & Curing**

Space Deadline: 6/10/2013  
Artwork Deadline: 6/21/2013

**Product/Services Showcase:**  
Consolidation Technologies

**Bonus Distribution:**  
ASCC Annual Conference

## September

**Theme: Software & Technology**

Space Deadline: 7/12/2013  
Artwork Deadline: 7/24/2013

**Product/Services Showcase:**  
Design & Management Software

**Bonus Distribution:**  
ACI Fall Convention  
ASCC Annual Conference

## October

**Theme: Precast/Prestressed & Post Tensioned**

Space Deadline: 8/12/2013  
Artwork Deadline: 8/22/2013

**Product/Services Showcase:**  
Fiber Reinforcement

**Bonus Distribution:**  
ACI Fall Convention

## November

**Theme: Sustainability & Resilience**

Space Deadline: 9/10/2013  
Artwork Deadline: 9/23/2013

**Product/Services Showcase:**  
Durability Enhancing Products

## December

**Theme: 2014 Concrete Product Guide**

Space Deadline: 10/11/2013  
Artwork Deadline: 10/24/2013

**Product/Services Showcase:**  
Innovative Products

**Bonus Distribution:**  
World of Concrete 2014