



American Concrete Institute  
*Always advancing*



**ACI International Forum**

**Anaheim, CA, USA**

*October 15, 2017*

# **ACI Italy Chapter**

**Paolo Casadei, Member of the Board of Directors\***

**\* Product Manager Structural Strengthening Division at KERAKOLL Group**

# ABOUT ACI ITALY CHAPTER (1)

- ACI Italy Chapter is among the 100+ chapters, equally subdivided between USA and abroad (26 in Canada and Latin America, 8 in Europe and 18 in Asia)
- ACI Italy Chapter was funded in 2003 by **Professors Antonio Nanni (University of Miami, FL, USA)** and **Mario Alberto Chiorino (Politecnico di Torino, Italy)**, now Honorary President of the Chapter
- There are **15 members** in the Board, 50% from the academy and 50% from the industry and design bureaus, beside the President
- The members of ACI I.C. are about **100**, among them **5 supporting members from the industry** (BASF Italia, Heidelberg-Calcestruzzi-Italcementi Group, General Admixtures, Kerakoll and Buzzi Group)
- Roughly 20% of the members are **young members** (fresh from PhD studies, PhD candidates and associate researchers)

# ABOUT ACI ITALY CHAPTER (2)

**PRESIDENT, ROBERTO REALFONZO** - Associate Professor, University of Salerno, Dept. of Civil Engineering

**VICE PRESIDENT, PAOLO RIVA** - Full Professor. University of Bergamo, Dept. of Engineering and Applied Science

**HONORARY PRESIDENT, MARIO ALBERTO CHIORINO** - Professor Emeritus, Politecnico di Torino, Dept. of Structural, Building and Geotechnical Engineering

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**Marco Bressan**, Engineer - General Admixtures S.p.A.

**Paolo Casadei**, Product Manager Structural Strengthening Division - Kerakoll Group

**Luigi Coppola**, Associate Professor - University of Bergamo, Dept. of Engineering and Applied Science

**Ciro Faella**, Full Professor - University of Salerno, Dept. of Civil Engineering

**Liberato Ferrara**, Associate Professor - Politecnico di Milano, Dept. of Civil and Environmental Engineering

**Marco Francini**, Head of Technology and Research & Development – Buzzi Unicem S.p.A

**Pietro Gambarova**, Professor Emeritus - Politecnico di Milano, Dept. of Civil and Environmental Engineering

**Gennaro Magliulo**, Assistant Professor - University of Naples, Dept. of Structures for Engineering and Architecture

**Emidio Nigro**, Full Professor - University of Naples, Dept. of Structures for Engineering and Architecture

**Francesco Santonicola**, Laboratory Manager - Calcestruzzi S.p.A

**Giuseppe Schlitzer**, Manager - Federbeton

**Ivana Torresan**, Segment manager Admixtures and Cement Additives - BASF Construction Chemicals Italia Spa

# ABOUT ACI ITALY CHAPTER (3)

- **Initiatives at the national level**

Awards to PhD dissertations concerning **structural and nonstructural cementitious materials, and R/C-P/C constructions**

- **Initiatives at the national/international level**

Workshops on **«New Boundaries of Structural Concrete»** (2010, Salerno; 2011, Ancona; 2013, Bergamo; 2016 Capri (Naples); 2019, Milan)

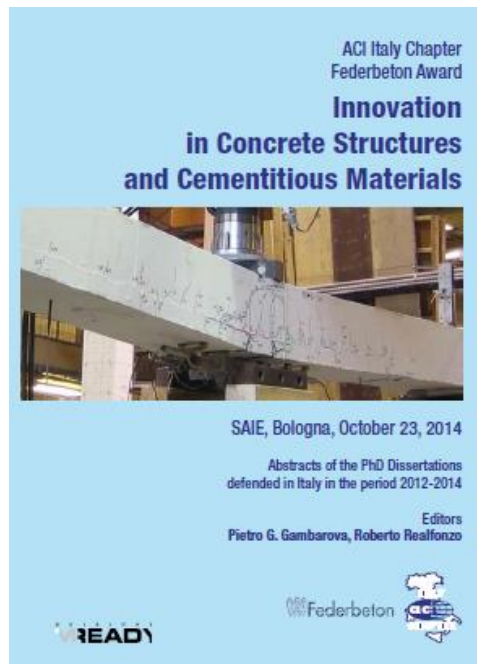
- **Initiatives at the international level**

Workshops on **«Durability and Sustainability of Concrete Structures»** (2015, Bologna – Italy and 2018, Moscow – Russia)

- **Training Initiatives**

Professional courses for **building-site and laboratory technicians**

# PhD Student Awards 2014 (1)



## First Edition

**Innovation in Concrete Structures and Cementitious Materials  $\Rightarrow$  27 dissertations (2012-14)**

**SAIE – Building and Construction Exhibition 2014  
(Bologna, Italy, October 23, 2014)**

**Three awards offered by Federbeton – Italian Federation of Cement Producers, under the supervision of ACI Italy Chapter**

**Proceedings edited by:**

**Roberto Realfonzo – President of ACI Italy Chapter  
and**

**Pietro G. Gambarova – Member of the Board**

# PhD Student Awards 2014 (2)





# PhD Student Awards 2016 (1)

ACI Italy Chapter  
Federbeton Award

Innovation  
in Concrete Structures  
and Cementitious Materials - 2016



SAIE, Bologna, October 19, 2016

Abstracts of the PhD Dissertations  
defended in Italy in the period 2015-2016

Editors

Pietro G. Gambarova and Roberto Realfonzo

READY

Federbeton



## Second Edition

**Innovation in Concrete Structures and Cementitious Materials 2016  $\Rightarrow$  29 dissertations (2015-16)**

**SAIE – Building and Construction Exhibition 2016  
(Bologna , Italy – October 19, 2016)**

**Three awards offered by Federbeton – Italian  
Federation of Cement Producers, under the  
supervision of ACI Italy Chapter**

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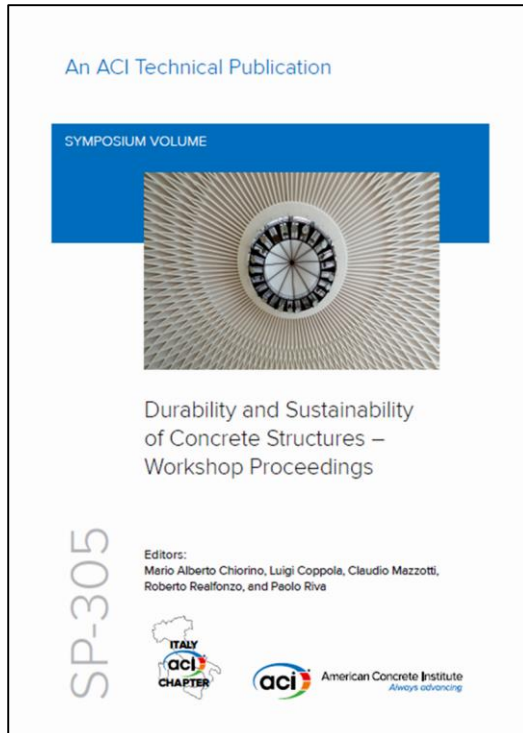
# PhD Student Awards 2016 (2)





# 1<sup>st</sup> Int. Workshop DSCS 2015 (1)

First edition of the workshop on  
**Durability and Sustainability of Concrete Structures**  
**Bologna (Italy) – October 3, 2015**



The workshop was jointly organized by **ACI Italy Chapter** and by the **Dept. of Civil, Chemical, Environmental and Materials Engineering of the University of Bologna**, under the auspices of **ACI Committee 201 (Proc. in ACI SP 305)**

# **1<sup>st</sup> Int. Workshop DSCS 2015 (2)**

## **Keynote Lectures:**

**From the "old" to a "new" construction industry-sustainability design of structures**

**Koji SAKAI - Japan Sustainability Institute**

**Building toward a sustainable and resilient future**

**Julie BUFFENBARGER – Lafarge**

**New trends in service life design**

**Giuseppe MANCINI - Department of Structural, Geotechnical and Building Engineering,  
Politecnico di Torino**

**Prediction of service life of reinforced concrete by considering the initiation and the propagation periods**

**Carmen ANDRADE PERDIX - Institute of Construction Sciences “Eduardo Torroja” - CSIC**

**Structural Concrete in the Epoch of Sustainable Development**

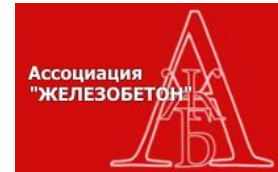
**Vyacheslav FALIKMAN - Moscow State University of Civil Engineering (MSUCE)**

**Durability of concrete subjected to high temperature fields: continuum and discrete constitutive approaches**

**Guillermo ETSE - CONICET, National University of Tucuman**

# 2<sup>nd</sup> Int. Workshop DSCS 2018 (1)

The workshop is organized by the **American Concrete Institute Italy Chapter** and the **Russian Engineering Academy** with the assistance of the *Russian Academy of Sciences* and the *Russian Academy of Architecture and Construction Science*.



The Workshop is co-sponsored by:

- **American Concrete Institute** and its Committees: **C130** (Sustainability of Concrete), **C201** (Durability of Concrete), **C446** (Fracture Mechanics of Concrete - Joint ACI/ASCE), **C544** (Fiber Reinforced Concrete), **C549** (Thin Reinforced Cementitious Products and Ferrocement).
- **fib** (Federation for Structural Concrete)
- **RILEM** (International union of laboratories and experts in construction materials, systems and structures)



The Workshop is included in the **ACI Ambassador Program**

# 2<sup>nd</sup> Int. Workshop DSCS 2018 (2)

## Organizing Committee

V. Falikman, Chair (Russia)  
R. Realfonzo, Chair (Italy)  
L. Coppola (Italy)  
P. Hájek (Czech Republic)  
P. Riva (Italy)

## Local Organizing Committee

B. V. Gusev, (Chair)  
A. I. Zvezdov  
V. F. Stepanova  
L. S. Barinova  
Y. I. Kuznetsov  
M. E. Leybman  
V. I. Travush  
A. Davidyuk

## Honor Committee

M.A. Chiorino (Italy)  
M. Collepari (Italy)  
B. V. Gusev (Russia)  
K. Sakai (Japan)  
S. P. Shah (USA)

**Around 200 accepted abstracts**

## Important dates:

**Submission of full papers: November 15, 2017**

**Paper acceptance notification: February 15, 2018**

**Submission of final papers: March 15, 2018**

**The full papers will be collected in an ACI Special Publication**

# 2<sup>nd</sup> Int. Workshop DSCS 2018 (3)

## Tentative Program

### June 6<sup>th</sup>, 2017

08:30	09:00	Registration
09:00	09:30	Opening welcome
09:30	10:00	<b>Keynote Lecture - N. Banthia</b>
10:00	11:30	<b>Parallel Sessions</b>
11:30	12:00	<i>Coffee break</i>
12:00	13:30	<b>Parallel Sessions</b>
13:30	14:30	<i>Lunch break</i>
14:30	15:00	<b>Keynote Lecture - H. Muller</b>
15:00	16:30	<b>Parallel Sessions</b>
16:30	17:00	<i>Coffee break</i>
17:00	18:30	<b>Parallel Sessions</b>

**11 sessions on DURABILITY**

**10 sessions on SUSTAINABILITY**

**2 sessions on FRC**

**3 sessions on RETROFIT**

**3 sessions on RECYCLE**

**Other topics**

### June 7<sup>th</sup>, 2017

08:30	09:00	<b>Keynote Lecture - R. Gettu</b>
09:00	09:30	<b>Keynote Lecture - S. Shah</b>
09:30	11:00	<b>Parallel Sessions</b>
11:00	11:30	<i>Coffee break</i>
11:30	13:00	<b>Parallel Sessions</b>
13:00	14:00	<i>Lunch break</i>
14:00	14:30	<b>Keynote Lecture - D. Hooton</b>
14:30	16:00	<b>Parallel Sessions</b>
16:00	16:30	<i>Coffee break</i>
16:30	18:00	<b>Parallel Sessions</b>
18:00	18:30	Conclusion



# 2<sup>nd</sup> Int. Workshop DSCS 2018 (4)

## Keynote Lectures:

**Bio-Inspired Fiber Reinforced Concrete for the Next Generation Sustainable, Smart and Sleek Infrastructure**

**Nemkumar (Nemy) BANTHIA - Canada India Research Center of Excellence – ACI Ambassador Speaker**

**Ravindra GETTU - Industrial Consultancy & Sponsored Research Indian Institute of Technology Madras, India**

**Performance-based Concrete Design for Durability and Sustainability**

**R. Doug HOOTON - Chair of ACI Subcommittee 130-A, Secretary of ACI Committee 201, Durability of Concrete**

**Design approach and properties of a new generation of sustainable structural concretes**

**Harald S. MÜLLER - Immediate Past President of the International Federation for Structural Concrete**

**Nano-Engineered Meta Cement-Based Materials and Durability**

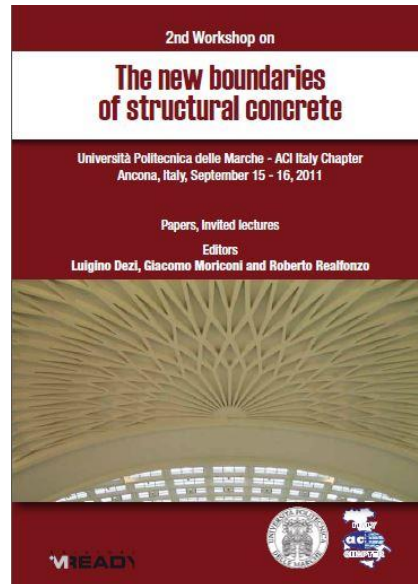
**Surendra P. SHAH - Center for Advanced Cement Based Materials Northwestern University Evanston, USA**

# 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> Nat. Workshops NBSC (1)

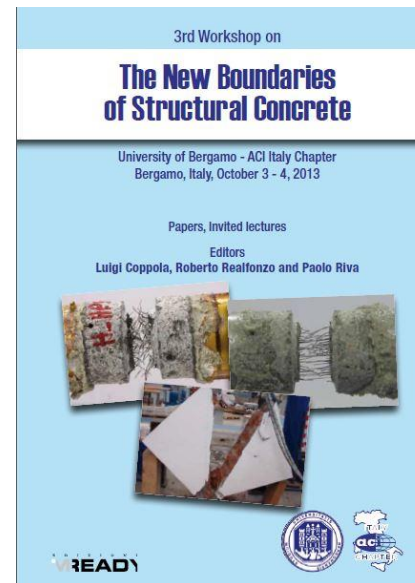
## New Boundaries of Structural Concrete



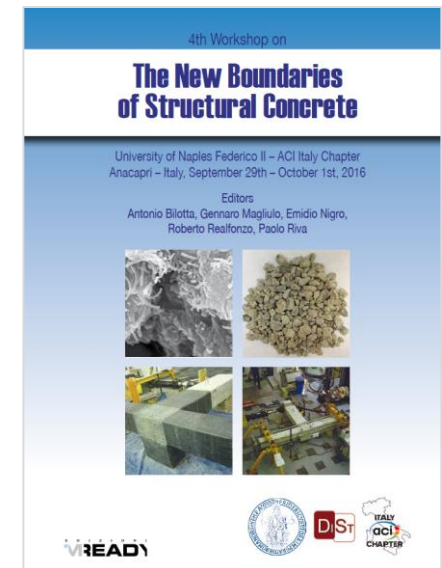
**First edition**  
**Salerno, April 2010**



**Second edition**  
**Ancona, September 2011**



**Third edition**  
**Bergamo, October 2013**



**Fourth edition**  
**Anacapri, October 2016**

# **1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> Nat. Workshops NBSC (2)**

## **New Boundaries of Structural Concrete**

**Among the others, the workshop deals with the following topics :**

- **Performance and life-cycle costs of new concrete structures**
- **Controlled-performance concrete**
- **New scenarios for concrete**
- **On-site quality control of concrete**
- **Innovative strengthening systems for concrete structures**
- **Ultra High-Strength Concretes: ongoing projects and recent achievements**

**Future edition: Politecnico di Milano, 2019**

**The Call for Abstracts will be soon available**

# ACI Excellence in Concrete Award (1)

In the Spring 2016, ACI - Italy Chapter proposed the candidacy of **Palazzo Italia** (Italian Pavilion at the Expo 2015 – World Exhibition 2015, Milan) to the second edition of **ACI Excellence in Concrete Construction Award - Category “Decorative Concrete”** (Philadelphia, USA, October 25, 2016)

## Construction Team Members

Owner: **Expo 2015 Co.**

Architectural Firm: **Nemesi & Partners Ltd**

Engineering Firm: **Bms Progetti Ltd and Proger Co.**

General Contractor: **Italiana Costruzioni Ltd**

Concrete Contractor: **Styl-Comp Ltd**

Cement Supplier: **Italcementi Group**



**Michael J. Schneider**

*« [...] The project visit was very memorable. The structure is way more impressive in person than in pictures. Its award is certainly well deserved.»*

**Concrete International – October 2017**





# ACI Excellence in Concrete Award (2)

Palazzo Italia got both the first award in the category **Decorative Concrete** and the **Excellence in Concrete Construction Award** (25/11/2016)





# ACI Certification Courses (1)

**ACI Italy Chapter is the only European chapter recognized by ACI to certify (by means of on-line courses, laboratory tests and exams):**



## *First-level technicians for concrete testing on site*

- Required skills: mastery of the experimental procedures and paperwork related to testing cementitious materials at the fresh state (7 basic tests).

## *Concrete Construction Specialized Inspector – CCSI certificate*

- Required skills: mastery of the procedures, operations and documents required to certify the inspections on R/C buildings according to the ongoing technical and safety norms .

# ACI Certification Courses (2)

## Concrete Field Testing Technician Grade I

Module	Section	Laboratory	Topics	Module	Section	Laboratory	Topics
1	Foundamentals on concrete - Part 1	1.1	NO Introduction and ingredients (cementitious materials, water, aggregates, chemical admixtures, fibers) Properties (workability, time of setting, heat of hydration) Properties (strength, resistance to freezing and thawing, permeability)	6	ASTM C231	6.1	YES Air content of freshly mixed concrete by the pressure method - Significance and apparatus Air content of freshly mixed concrete by the pressure method - Procedure and calculation Air content of freshly mixed concrete by the pressure method - Example
		1.2				6.2	
		1.3				6.3	
2	Foundamentals on concrete - Part 2	2.1	NO Before construction (selection of properties and materials, mix design) Construction (mixing, transporting, placing, finishing, curing and protection) Durability and maintenance	7	ASTM C173	7.1	YES Air content of freshly mixed concrete by the volumetric method - Significance and apparatus Air content of freshly mixed concrete by the volumetric method - Procedure and calculation Air content of freshly mixed concrete by the volumetric method - Example
		2.2				7.2	
		2.3				7.3	
3	ASTM C1064 ASTM C172	3.1	YES Temperature of freshly mixed hydraulic-cement concrete - Significance and apparatus Temperature of freshly mixed hydraulic-cement concrete - Procedure and example	8	ASTM C31	8.1	YES Making and curing concrete test specimens in the field - Apparatus Making and curing concrete test specimens in the field - Casting and curing Making and curing concrete test specimens in the field - Example
		3.2				8.2	
		3.3	YES Sampling freshly mixed concrete - Scope, procedure and example			8.3	
4	ASTM C143	4.1	YES Slump of hydraulic-cement concrete - Significance and apparatus Slump of hydraulic-cement concrete - Procedure and precision Slump of hydraulic-cement concrete - Example	9	ASTM C29	9.1	YES Bulk density and voids in aggregate - Terminology and apparatus Bulk density and voids in aggregate - Procedure and calculation Bulk density and voids in aggregate - Example
		4.2				9.2	
		4.3				9.3	
5	ASTM C138	5.1	YES Density, yield and air content (gravimetric) of concrete - Apparatus and procedure Density, yield and air content (gravimetric) of concrete - Calculation Density, yield and air content (gravimetric) of concrete - Example	10	ASTM C94	10.1	NO Ready-mixed concrete - Materials, ordering information and workability Ready-mixed concrete - Air-entrained concrete, measuring materials, batching plant and mixing Ready-mixed concrete - Delivery, test on fresh concrete, mechanical performances
		5.2				10.2	
		5.3				10.3	

Online lessons will be available for e-learning courses

**Thank you for your attention!**

**[www.aciitaly.com](http://www.aciitaly.com)**

**[aciitalychapter@gmail.com](mailto:aciitalychapter@gmail.com)**