**Final Program of the 36th International Conference on Cement Microscopy**

**Sponsored and Organized By:**
International Cement Microscopy Association (ICMA)  
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**Co-Sponsored By:**
Mapei S.p.A., Milan, Italy

**April 13 - 17, 2014**

**Hotel Melia Milano**  
via Masaccio 19, Milan 20149, Italy  
melia.milano@melia.com

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**THURSDAY, APRIL 17, 2014**

**8:00 – 8:35 A.M.** WELCOME

**8:35 – 9:00 A.M.** IDENTIFICATION OF AAR IN SOUTH ISLAND BRIDGES IN NEW ZEALAND  
A. Shayan, ARRB Group, Vermont South, VIC, Australia  
S. Freitag, Opus International Consultants,  
Lowe Hutt, New Zealand

**9:00 – 9:25 A.M.** RELICTS OF UNHYDRATED CEMENT CLINKER IN A HISTORIC CONCRETE FROM THE 19TH CENTURY – MICROSCOPY WITH EDS ANALYSIS  
T. Katayama, Y. Ando, S. Hiroko, D. Sawaki  
Taiheiyo Consultant Co. Ltd., Sakura, Japan

**9:25 – 9:50 A.M.** MICROSCOPICAL ANALYSIS OF CEMENTITIOUS TILE ADHESIVES  
S. Carra, M. Monaco, T. Cerulli, & D. Nicoletti  
Mapei S.p.A., Milan, Italy

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**THURSDAY, APRIL 17, 2014**

**10:55 – 11:20 A.M.** DISCOLORATION OF FAIR-FACED CONCRETE – A CASE STUDY  
B. Veerle, Belgian Building Research Institute  
Limelette, Belgium

**11:20 – 11:45 A.M.** DAMAGE EVALUATION OF TWO DIFFERENT MIX DESIGNS CONTAINING SULFIDE BEARING AGGREGATES  
A. Rodrigues, B. Fournier, & J. Duchesne  
Center of Research of Concrete Infrastructures (CRIIB)  
Department of Geology & Geological Engineering  
Laval University, Quebec City, QC, Canada

**11:45 – 12:10 P.M.** NANOPETROGRAPHY TECHNIQUES CONTRIBUTION TO THE BEHAVIOUR OF TRACE ELEMENTS INTO CLINKERS  
F. Amin & E. Moudilou, CTG Italcementi Group, Cedex, France  
P. Le Coustumer, University of Bordeaux, Bordeaux, France

**12:10 – 1:00 P.M.** LUNCH BREAK

**1:00 – 1:25 P.M.** QUANTITATIVE XRD-ANALYSIS OF HYDRATED CEMENTITIOUS SYSTEMS  
T. Fullmann & T. Witzke, PANalytical B.V., Almelo, The Netherlands  
A. Scholer, F. Winnefeld, & B. Lothenbach  
EMPA, Swiss Federal Laboratories for Materials Science & Technology, Laboratory for Concrete & Construction Chemistry  
Dübendorf, Switzerland

**1:25 – 1:50 P.M.** INVESTIGATION OF THE HYDRATION OF HEMIHYDRATE WITH MICROSCOPIC METHODS  
C. Pritzel & R. Trettin, Institute for Building and Materials Chemistry, University of Siegen, Siegen, Germany

**1:50 – 2:15 P.M.** QUANTITATIVE PHASE DEVELOPMENT AND HEAT-FLOW CALCULATION OF CAC HYDRATION WITH CALCIUM SULFATES  
F. Goetz-Neunhoeffer, J. Neubauer, C. Stabler, C. Breunig  
University of Erlangen-Nuremberg (FAU)  
GeoZentrum Nordbayern Erlangen-Nurnberg  
Erlangen, Germany

**2:15 – 2:40 P.M.** INFORMATION ABOUT CONCRETE FROM A PETROGRAPHIC STUDY OF THE CEMENT MATRIX  
A. B. Poole, Private Consultant  
Parks House, Oxford, United Kingdom

**2:40 – 3:00 P.M.** BREAK

**3:00 – 3:25 P.M.** PETROGRAPHIC EVALUATION OF THE ALKALI-REACTIVITY POTENTIAL OF AGGREGATES FOR CONCRETE  
Ian Sims – Secretary, RILEM TC 219-ACS  
RSK Environment Ltd., United Kingdom  
P. Nixon – Chairman, RILEM TC 219-ACS  
Building Research Establishment, United Kingdom  
Isabel Fernandes – Petrographic Atlas Team Leader  
RILEM TC 219-ACS, Portugal University, Portugal

**3:25 – 3:50 P.M.** MINERALOGICAL AND MICROSCOPICAL STUDY OF TOW CALCOSCHIST ROCKS TO ASSESS SUITABILITY OF AGGREGATES FOR CONCRETE  
A.K. Crumbie, EGIS Structures & Environment/Geotechnique  
Seysins, France

**3:50 – 4:15 P.M.** EXAMINATION OF RAW MIX COMBINATIONS TO DETERMINE THE IMPACT ON BURNABILITY FACTORS  
P. Dufoit, Lafarge Cement Technical Center, IPEA  
Vienna GmbH, Austria

**4:15 – 4:40 P.M.** FROM ALITE TO C-S-H  
J. Neubauer, F. goetz-Neunhoeffer, S. Bergold, CH Breunig, D. Ectors, S. Dittrich, & D. Jansen  
University of Erlangen-Nurnberg  
GeoZentrum Nordbayern (FAU) Erlangen-Nurnberg  
Erlangen, Germany

**4:40 – 5:05 P.M.** STUDY ON THE CLINKER MINERAL MATCHING OF NUCLEAR ENGINEERING CEMENT (NEC)  
X. Gao, J. Wang, Y. Yao, M. Wang, Z. Wen  
China Building Materials Academy, The State Key Laboratory of Green Building Materials, Chaoyang District, Beijing, China

**6:00 – 9:00 P.M.** ICMA HOSTED RECEPTION  
(Mementoes Courtesy of 8853)
SUNDAY, APRIL 13, 2014

8:00 – 8:00 P.M. REGISTRATION & WELCOME RECEPTION
Melia Milano Hotel, Milan, Italy
Hosted by ICMA & Mapei, S.p.A.

MONDAY, APRIL 14, 2014

8:00 – 9:00 A.M. REGISTRATION
Melia Milano Hotel, Milan, Italy

9:00 – 9:10 A.M. WELCOME ADDRESS
Arianna LoPresti, Co-Chairman
ICMA European Organizing Committee

9:10 – 9:20 A.M. OPENING ADDRESS
Arturo G. Nisperos, ICMA General Chairman

9:20 – 9:50 A.M. KEYNOTE ADDRESSES
Dr. Giorgio Squinzi, Keynote Speaker
CEO, Mapei S.p.A., Milan, Italy
Prof. Amilcare Collina, Keynote Speaker, CEO Research & Innovation, Advisor, Mapei S.p.A., Milan, Italy

9:50 – 10:00 A.M. PROGRAM INTRODUCTION
Lou Jany/Herbert Poellmann
Program Committee Chairman & Co-Chairman

10:00 – 10:25 A.M. APPLICATION OF ADVANCED X-RAY MICRO-TOMOGRAPHY TO THE CHARACTERIZATION OF THE 3D MICROSTRUCTURE IN CEMENT PASTES
G. Artioli, L. Valentini, MC Dalconi, M. Secco
Department of Geoscience and CIRCe Center University of Padua, Padua, Italy

10:25 – 10:40 A.M. BREAK

10:40 – 11:05 A.M. INVESTIGATION ABOUT THE EFFECT OF CHEMICAL GRINDING AIDS ON CEMENT MILLING AND SEPARATION EFFICIENCY
M. Magistri & P. D’Arcangelo – Cement Additives Division
D. Salvioni – Microscopy Lab, Mapei S.p.A., Milan, Italy

11:05 – 11:30 A.M. INFLUENCE OF MINERALIZERS ON THE CLINKER BURNING TEMPERATURE AND ITS MORPHOLOGY
S. Ibrahim, N. Ben Jamaa – Environment Catalysis of Processes, Research (ECAP), National School of Engineering of Gabes, University of Gabes, Tunisia
M. Bagane – Applied Thermodynamics Unit Research, University of Gabes, Tunisia
M. Ben Ammar – Cement Society of Gabes, Gabes, Tunisia
A. Lecomte & C. Deliberto – Jean Lamour Institute, IUT Nancy-Brabois, Le Montet, Cedex, France

11:30 – 11:55 A.M. EFFECT OF MINOR ELEMENTS ON CLINKER MINERALOGY AND REACTIVITY
M. Marchi, M. Segata, F. Scotti, CTG S.p.A. – Italcementi Group, Bergamo, Italy

11:55 – 12:10 P.M. INTRODUCTION OF EXHIBITORS
Dr. Stella Marusin, Exhibitors Committee Chairman

12:10 – 1:00 P.M. LUNCH BREAK

1:00 – 1:25 P.M. PETROGRAPHY OF BUILDING MATERIALS DETERIORATED BY SULFATE ATTACK
J. Duchesne, Centre of Research of Concrete Infrastructures (CRIIB), Department of Geology & Geological Engineering Laval University, Quebec City, QC, Canada

1:25 – 1:50 P.M. DETECTING THE CLINKER PHASES OF PORTLAND CEMENT CLINKER
C. Pritzl & R. Trettin, Institute for Building and Materials Chemistry, University of Siegen, Siegen, Germany

1:50 – 2:15 P.M. HYDRATION PROPERTIES OF NATURAL CEMENTITIOUS PHASES BEARING ROCKS
V. Thiery & D. Damidot, Mines Douai, Douai, France
E.V. Sokol & S. N. Kokh, V. S. Sobolev Institute of Geology and Mineralogy, Siberian Branch of the RAS Akademiya Koptyuga Novosibirsk, Russia

2:15 – 2:40 P.M. HYDRATION CONTROL OF PORTLAND CEMENT AND CALCIUM ALUMINATE CEMENT USING METAL NAPHTHOATE HYDRATES
H. Poellmann, K. Fischer, & R. Kaden
University of Halle/Saale, Halle, Germany

2:40 – 3:00 P.M. BREAK

3:00 – 3:25 P.M. NEW SILICA FUME FROM RECYCLED WASTE GLASS
A. Tagnit-Hamou, D. Harbec, H. Bahri
University of Sherbrooke, Sherbrooke, Quebec, Canada

3:25 – 6:00 P.M. PANEL DISCUSSION: WELLBORE CEMENTS
Conducted By: Workshop Coordinators, Tom Dealy - Chair & Mileva Radonjic - Co-Chair

Panelists:
- Dr. Karen Luke of Trican Well Service Ltd., Calgary, Alberta, Canada; 3
- Prof. Dr. Johann Plank of Dept. of Chemistry, Garching, Germany: “CO2 Stable Well Cements: A Review of the State of Art.”
- Dr. Mileva Radonjic of Louisiana, State University, Baton Rouge, Louisiana, U.S.A.: “Utilization of Existing Field Practices to Prevent & Remediate Leaky Wellbores.”

5:00 P.M. BUS RIDE BACK TO THE MELIA MILANO HOTEL, MILAN, ITALY

TUESDAY, APRIL 15, 2014

9:00 A.M. – 5:00 P.M. TOUR AND VISIT OF THE LABORATORIES & PLANTS OF MAPEI S.p.A., MILAN, ITALY

5:00 P.M. – \( 10 \text{:} 30 \text{ P.M.} \) \( \text{BUS RIDE BACK TO THE MELIA MILANO HOTEL, MILAN, ITALY} \)

WEDNESDAY, APRIL 16, 2014

8:00 – 8:35 A.M. REGISTRATION & WELCOME
9:50 – 10:15 A.M. INVESTIGATION ON COMMERCIAL AND SYNTHETIC CALCIUM SULFOALUMINATE CEMENTS
H. Poellmann & S. Stoeber, University of Halle/Saale
Halle, Germany

10:15 – 10:30 A.M. BREAK

10:30 – 10:55 A.M. TECHNICAL ASPECT OF ADOBE STONE RESTORATION AND ENHANCEMENT OF THE HISTORIC MANILA CATHEDRAL, PHILIPPINES, BUILT IN 1581
T.B. Malicse, G. Balin & I. Busbus - International Phil, Inc., Manila, Philippines
M. L.M. Reyes – University of Santo Tomas Graduate School, Cultural Heritage Studies, Manila, Philippines
M. Patabawan – Tropiks Design Company, Manila, Philippines

10:55 – 11:20 A.M. NANO-DISPERSION OF SILICATE HYDRATE FOR THE SOLIDIFICATION/STABILIZATION OF WASTE
G. Ferrari, V. Russo, & M. Squinzi, Mapei S.p.A., Milan, Italy
G. Artioli, CIRCe Centre, Department of Geosciences University of Padua, Padua, Italy

11:20 – 11:45 A.M. COMPARISON OF PORE STRUCTURE OF HARDENED MORTARS BASED ON ORDINARY PORTLAND CEMENT AND CALCIUM ALUMINATE CEMENT
T. A. Bier, Institute fur Keramik, Glas und Baustofftechnik, Leipziger Freiberg, Germany
I. Markja, Polytechnic University Tirana, Tirana, Albania

11:45 – 12:10 P.M. THE ROLE OF MICROSTRUCTURE ON THE THERMAL DECOMPOSITION AND BURNABILITY OF LIMESTONES USED IN INDUSTRIAL CEMENT CLINKER
N. Marinoni, A. Bernasconi, G. Della Porta, and M. Galmerti, Department of Earth Sciences, University of Milan, Milan, Italy
M. Marchi, CTG – Italcementi Group, Bergamo, Italy

12:10 – 1:00 P.M. LUNCH BREAK

1:00 – 1:25 P.M. SYNTHESIZING NANO-STRUCTURED SiO2 PARTICLES THROUGH HIGH ENERGY MILLING OF SAND AND ASSESSING POTENTIAL USE IN CEMENTITIOUS MIXTURES
S. Al-Otaibi, M. S. El-Eskandarany, M. F. Abdulsalam & J. Chakkamalayath, Energy & Building Research Center Kuwait Institute for Scientific Research, Kuwait

1:25 – 1:50 P.M. DURABILITY OF MASONRY MORTAR IN HISTORICAL BUILDINGS: COMPARISON AMONG HYDRAULIC BINDERS COMMONLY USED IN COMMERCIAL PRODUCTS
F. Cella, D. Scala, C. Pistolesi, D. Salvioni, E. Moretti
Mapei S.p.a., R & D Central Laboratory, Milan, Italy

1:50 – 2:15 P.M. INVESTIGATION OF A GEOPOLYMER CONCRETE USED IN RETAINING WALLS OF A BRIDGE
A. Shayan and A. Xu, ARRB Group, Vermont South, VIC, Australia
F. Andrews-Phaedonos, VicRoads, Burwood East, VIC, Australia

2:15 – 2:40 P.M. IN-SITU X-RAY DIFFRACTION ANALYSIS OF EARLY HYDRATION OF CEMENTITIOUS SYSTEMS AND MICROSTRUCTURAL INVESTIGATION WITH SEM
E. Ooku, T. Westphal, T.A. Bier
Institute fur Keramik, Glas und Baustofftechnik, Leipziger Freiberg, Germany
T. Dilo, Department of Physics, Faculty of Natural Sciences University of Tirana, Tirana, Albania

2:40 – 3:05 P.M. MICROSTRUCTURE AND MICROCHEMISTRY OF MECHANICALLY MANIPULATED WELLBORE CEMENT SHEATH
M. Radonjc, Craft and Hawkins Department of Petroleum Engineering, Louisiana State University, Baton Rouge, Louisiana, U.S.A.

3:05 – 3:20 P.M. BREAK

3:20 – 3:45 P.M. MICRO-CHEMICAL AND MICRO-MINERALOGICAL CHARACTERIZATION OF CLINKER RELICTS FROM AGED CEMENT COMPOSITES
M. Secco – Inter-Departmental Research Center for the Study of Cement Materials & Hydraulic Binders (CEPCe)
L. Peruzzo – CNR, Institute of Geosciences & Georesources
G. Artioli, L. Valentini, & MC Dalconi – Department of Geosciences, University of Padua, Padua, Italy
G. Ferrari & V. Russo, Mapei, S.p.A., Milan, Italy

3:35 – 3:50 P.M. CLOSING REMARKS
Arturo G. Nisperos, ICMA General Chairman

3:50 P.M. ADJOURNMENT (End of Technical Session)

GUEST/SPOUSE PROGRAM
Guest/Spouse Program will be organized on demand for the 36th ICMA Conference in Milan, Italy and details will be shared as registration progresses and will be announced in the ICMA webpage (www.cemmicro.org). Please identify on your registration if a spouse or guests will accompany you at the conference.
(Spouse & Guest Committee: Lourdes M. Nisperos- Chairman; Karen Campbell, Co-Chair; Maria Poellmann Co-Chair)

SEE YOU ALL AT THE 2015 ICMA CONFERENCE VENUE TO BE ANNOUNCED AT THE ICMA WEBSITE (WWW.CEMMICRO.ORG)
The original HQ of Mapei, founded in 1937, is now home to the Research & Development laboratories. The R&D laboratory in Milan coordinates the activities carried out by the Group’s 18 laboratories. They are all equipped with modern, sophisticated equipment, making these the most important laboratories in the world specialised in chemical products for the building industry.

**Investment in research for 2011:**
- 12% of employees (900 out of a total of 7,500)
- 5% of total annual revenue (105 million Euros)

The Mediglia plant, Strada Provinciale 159 - Robbiano di Mediglia, Milan / Employees: 490

In collaboration with Bologna, the installation of a battery of photovoltaic panels for the production of electricity was completed. The photovoltaic panels, installed on the roofs of the workshops, will allow the company to significantly reduce its consumption of electrical energy in the area of production and thus contribute to the environment.

In 2011, the building industry was hit by a crisis, and many production plants were forced to reduce their workforce. However, Mapei was able to maintain its production levels due to its strong financial position and efficient cost management.