

## Welcome

Welcome to the 7<sup>th</sup> international RILEM conference on Self-Compacting Concrete, the 1<sup>st</sup> international RILEM conference on rheology and processing of construction materials and the 67<sup>th</sup> RILEM week.

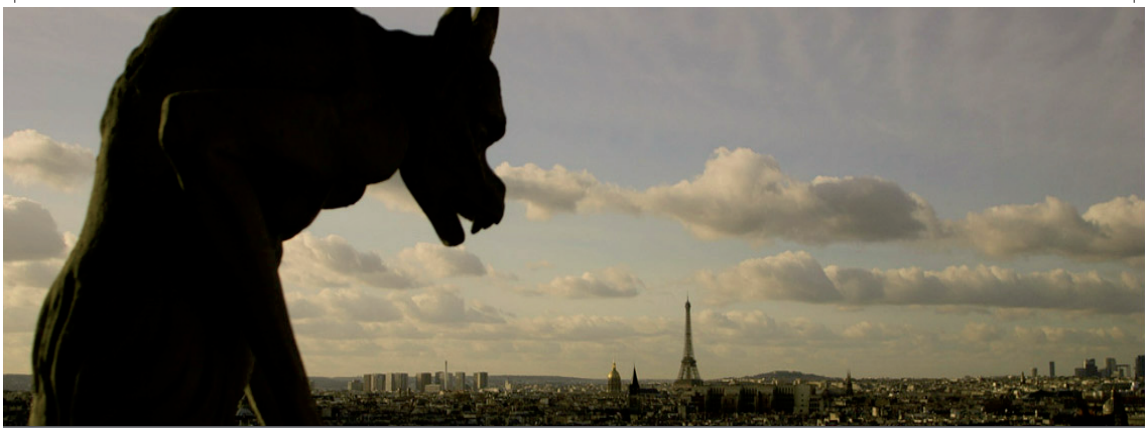
The response to the call for papers for these joined conferences has been impressive. Following an anonymous reviewing process, 48 papers among almost 300 abstracts were selected for publication in the peer-reviewed proceedings that each attendee shall find in its conference bag. We have moreover received around 160 additional papers or extended abstracts for the electronic proceedings.

From a material point of view, these two joined conferences deal with a variety of construction materials, including concrete, mortar, grouts, renders, plasters, bitumen, paints or adhesives... In particular, as expected, a wide set of works concerning the rheology, design and processing of self-compacting concrete are to be presented in the coming days.

We would like to use this first opportunity to thank the organizing and scientific committee for their dedicated work along with the French Association of Civil Engineering (AFGC) and RILEM for their unconditional technical and financial support.

Finally, we would like to thank you all for participating in these conferences. We hope you enjoy your time in Paris.

**Nicolas Roussel and Hela Bessaies-Bey**



## Overview

### Monday

09:00/10:00	Opening Session	p. 03
10:15/12:30	Adapted Rheometry for construction materials (I)	p. 04
13:45/15:00	Adapted Rheometry for construction materials (II)	p. 05
15:05/16:50	Mix design and rheology of cementitious materials (I)	p. 06
17:05/18:50	Mix design and rheology of cementitious materials (II)	p. 07
10:15/12:30	Geopolymers and alkali-activated materials	p. 08
13:35/17:10	Bituminous materials	p. 09
17:20/18:50	Fiber reinforced concrete (I)	p. 11
10:15/12:30	Self-compacting concretes with low environmental impacts	p. 12
13:45/16:20	Durability of self-compacting concrete	p. 13
16:50/18:55	Mineral additives and mix design	p. 14

### Tuesday

08:15/9:45	RILEM invited lectures	p. 34
10:00/12:30	Admixture and polymers for construction materials (I)	p. 15
13:35/16:55	Admixture and polymers for construction materials (II)	p. 16
17:05/18:50	Lightweight construction materials	p. 18
10:00/12:30	Fiber reinforced concrete (II)	p. 19
13:45/16:00	Foam and air in construction materials	p. 20
16:05/16:50	Case, product and market studies (I)	p. 21
17:05/18:35	Case, product and market studies (II)	p. 22
10:00/12:30	Mechanical properties of self-compacting concrete	p. 23
13:45/15:45	Incorporation of wastes in construction materials	p. 24
15:50/16:50	Mixing, production and online control of construction materials (I)	p. 25
17:05/18:35	Mixing, production and online control of construction materials (II)	p. 26

### Wednesday

08:15/10:15	RILEM invited lectures	p. 34
08:15/12:00	Casting and placing processes (I)	p. 27
13:30/15:00	Casting and placing processes (II)	p. 29
10:30/12:15	Organic aggregates	p. 30
08:15/12:00	Curing and early age properties of cementitious materials (I)	p. 31
13:30/14:45	Curing and early age properties of cementitious materials (II)	p. 33
13:30/15:00	RILEM general Council	p. 36
15:15/15:45	Closing session	p. 03

**RILEM WEEK PROGRAM** p. 36

**CONFERENCE and MEETINGS VENUES** p. 38



## OPENING SESSION

Location Faraboeuf – Les Cordeliers  
Time shift Monday - 09:00/10:00  
Chair Dr. Nicolas ROUSSEL

**09:00/09:05** WELCOME AND PROGRAM OVERVIEW by Nicolas ROUSSEL (IFSTTAR)

**09:05/09:10** WELCOME AND RILEM WEEK OPENING by Mark ALEXANDER (RILEM)

**09:10/09:15** WELCOME AND CONFERENCE OPENING by Bruno GODARD (AFGC)

**09:15/10:00 [KEYNOTE LECTURE]** “RHEOLOGY OF CONSTRUCTION MATERIALS” by Philippe COUSSOT.

## CLOSING SESSION

Location Faraboeuf – Les Cordeliers  
Time shift Wednesday - 15:15/15:45  
Chair Dr. Nicolas ROUSSEL

**15:15/15:35** CONCLUDING REMARKS by Henri VAN DAMME (IFSTTAR)

**15:35/15:40** NEXT SCC CONFERENCE by Caijun SHI.

**15:40/15:45** OFFICIAL CLOSING by Nicolas ROUSSEL (IFSTTAR).

SESSION 1.1.1

**ADAPTED RHEOMETRY FOR CONSTRUCTION MATERIALS (I)**

Location	Faraboeuf – Les Cordeliers
Time shift	10:15-12:30
Chair	Prof. Christophe LANOS / Dr. Guillaume OVARLEZ

**10:15/10:45 INTRODUCTION LECTURE « ADAPTED RHEOMETRY FOR CONSTRUCTION MATERIALS »** by Dr. Guillaume OVARLEZ.

**10:45/11:00** "FROM SLUMP TO SPREADING FLOW: A NEW ANALYTICAL MODEL FOR YIELD STRESS EVALUATION" by A. Pierre, P. Estelle and C. Lanos.

**11:00/11:15** "SLUMP FLOW CURVES OF SCC RHEOLOGICALLY EVALUATED WITH INSTRUMENTED SPREAD TABLE" by H.W. Reinhardt and A. Huss.

**11:15/11:30** "COMPARISON OF SCC RHEOLOGICAL BEHAVIOUR USING LABORATORY AND IN-SITU RHEOLOGICAL TESTING" by S. Mokeddem, C. Lanos and B. Casacliu.

**11:30/11:45 [SELECTED PAPER]** "A UNIQUE PROCEDURE FOR FINDING THE RHEOLOGICAL PROPERTIES OF FRESH PORTLAND CEMENT CONCRETE USING CONCRETE SHEAR TESTS" by S. Girish and B.S. Santhosh.

**11:45/12:00** "DETERMINATION OF CONCRETE YIELD STRESS: APPLICATION OF LINEAR OR NON-LINEAR RHEOLOGICAL MODELS?" by D. Feys, K.H. Khayat, J.E. Wallevik and O.H. Wallevik.

**12:00/12:15 [SELECTED PAPER]** "A CONCRETE RHEOMETER: FEATURES AND INDUSTRIAL APPLICATIONS " by F. Fabbris, W. De Carvalho and D. Lootens.

**12:15/12:30** "COMPARISON AND LIMITATIONS OF DIFFERENT CONCRETE RHEOMETERS" by D. Feys and K.H. Khayat.

SESSION 1.1.2

**ADAPTED RHEOMETRY FOR CONSTRUCTION MATERIALS (II)**

ROOM	Faraboeuf– Les Cordeliers
TIME SHIFT	13:45/15:00
CHAIR	Prof. Christophe LANOS / Dr. Guillaume OVARLEZ

**13:45/14:00** "IN LINE MEASUREMENT OF SELF COMPACTING CONCRETE RHEOLOGY" by M. Santos de França, F.A. Cardoso, R.G. Pileggi and B. Cazacliu.

**14:00/14:15** "NON-DESTRUCTIVE DETERMINATION OF CHANGES IN RHEOLOGICAL PROPERTIES OF MORTAR BY ULTRASOUND" by M. Krüger.

**14:15/14:30** "HYBRID INTENSIVE CONE MIXER WITH INTEGRATED RHEOMETER FOR HIGH PERFORMANCE CONCRETE" by H. Garrecht, C. Baumert and A.E. Schliesser.

**14:30/14:45** "DEVELOPMENT OF HIGH THROUGHPUT RHEOLOGY SCREENING OF MICROMORTARS" by X. Chen, S. Deshmukh, J. Dominowski, M. Schmitz, R. Baumann and M. Radler.

**14:45/15:00** "CEMENT PARTICLE FLOCCULATION MONITORING AT STEADY SHEAR RATES" by J.H. Kim, H.J. Yim and S.H. Kwon.

SESSION 1.1.3

**MIX DESIGN AND RHEOLOGY OF CEMENTITIOUS MATERIALS (I)**

ROOM	Faraboeuf– Les Cordeliers
TIME SHIFT	15:05/16:50
CHAIR	Dr. Didier LOOTENS

**15:05/15:35 INTRODUCTION LECTURE** *“MIX DESIGN AND RHEOLOGY OF CEMENTITIOUS MATERIALS”* by Dr. Nicolas ROUSSEL.

**15:35/15:50** *“EFFECTS OF PASTE QUANTITY AND QUALITY ON FRESH AND HARDENED PROPERTIES OF SELF-CONSOLIDATING CONCRETE”* by N. Ghafoori and M. Najimi.

**15:50/16:05 [SELECTED PAPER]** *“EFFECT OF THE MIX COMPOSITION ON RHEOLOGICAL BEHAVIOR OF A FRESH GRANULAR-CEMENT PASTE MATERIAL”* by H. Hoornahad and E.A.B. Koenders.

**16:05/16:20** *“EFFICIENCY OF CEM METHOD TO PREDICT RHEOLOGICAL PROPERTIES OF CORRESPONDING CONCRETE”* by A. Hočevár, F. Kavčič and V.B. Bosiljkov.

**16:20/16:35** *“PACKING DENSITY MEASURES OF FINE PARTICULES INCLUDING A MODEL SKELETON OF SELF-COMPACTING CONCRETE: A NEW APPROACH TO OPTIMIZE POWDER MIXTURE”* by F. Chalencon, A. Flaus, J. Frecon, D. Rogat and C. Clergue.

**16:35/16:50** *“WET PACKING OF AGGREGATE IN MINIMISING THE USE OF CEMENT IN CONCRETE”* by M. McKinley and A.K.H. Kwan.

## SESSION 1.1.4

# MIX DESIGN AND RHEOLOGY OF CEMENTITIOUS MATERIALS (II)

ROOM	Faraboeuf– Les Cordeliers
TIME SHIFT	17:05/18:50
CHAIR	Dr. Didier LOOTENS

**17:05/17:20** “RHEOLOGICAL OPTIMIZATION OF FLOWABLE CONCRETES BASED ON COMPUTATIONAL FLUID DYNAMICS (CFD)” by D. Lowke, S. Illguth, T. Kränkel and C. Gehlen.

**17:20/17:35** “SCC MATRIX RHEOLOGY WITH CRUSHED AGGREGATE FILLERS: EFFECT OF PHYSICAL AND MINERALOGICAL PROPERTIES, REPLACEMENT, CO- POLYMER TYPE AND W/B RATIO” by R. Cepuritis, S. Jacobsen and B. Pedersen.

**17:35/17:50 [SELECTED PAPER]** “ROBUSTNESS OF SELF-CONSOLIDATING CONCRETE: NEW TESTING METHOD AND EFFECT OF AGGREGATE PROPERTIES” by L. Shen, H.B. Jovein, L. Ai and H. Shi.

**17:50/18:05** “AN EXPERIMENTAL STUDY ON THE WORKABILITY OF HIGH PERFORMANCE SELF-CONSOLIDATING CONCRETE (HPSC)” by A.A. Ramezani pour, A. Kazemian, M. Nikravan, M.A. Moghadam and A. Mahpur.

**18:05/18:20** “STATE OF THE ART IN SCC INDUSTRIAL MIX DESIGN” by C. Shi.

**18:20/18:35** “ELASTIC PROPERTIES OF SELF-COMPACTING CONCRETE” by H. Yildirim and O. Sengul.

**18:35/18:50** “DEVELOPING HIGH STRENGTH FLOWABLE CEMENTITIOUS MATRICES FOR FERROCEMENT APPLICATIONS” by S. Mourad and M. Shannag.

SESSION 1.2.1

**GEOPOLYMERS AND ALKALI-ACTIVATED MATERIALS**

ROOM	Salle des thèses– Les Cordeliers
TIME SHIFT	10:15/12:30
CHAIR	Prof. John PROVIS

**10:15/10:45 INTRODUCTION LECTURE** “GEOPOLYMERS AND ALKALI-ACTIVATED MATERIALS” by Prof. Jean Baptiste d’ESPINOSE.

**10:45/11:00** “MECHANICAL PROPERTIES AND COMPOSITIONAL HETEROGENEITIES OF FRESH GEOPOLYMER PASTES” by A. Favier, G. Habert , J-B. d’Espinose de Lacaille and N. Roussel.

**11:00/11:15** “INFLUENCE OF ALKALI-ACTIVATOR ON THE RHEOLOGICAL BEHAVIOR DURING GEOPOLYMERIZATION” by P. Steins, A. Poulesquen, F. Frizon and S. Rossignol

**11:15/11:30** “MONITORING THE VISCOELASTIC BEHAVIOUR OF THE HARDENING GEOPOLYMER WITH ULTRASONIC SHEAR WAVES REFLECTION” by J. Rouyer, A. Poulesquen, and F. Frizon.

**11:30/11:45 [SELECTED PAPER]** “PROPERTIES OF FLY ASH BASED GEOPOLYMER CONCRETE MADE USING SPECIAL FLY ASH AGGREGATES” by M. Talha Junaid, O. Kayali, and A. Khennane.

**11:45/12:00 [SELECTED PAPER]** “RHEOLOGY OF GEOPOLYMER: COMPARATIVE STUDY BETWEEN PORTLAND CEMENT AND METAKAOLIN BASED GEOPOLYMER” by A. Favier, J. Hot, G. Habert, J-B. d’Espinose de Lacaille and N. Roussel.

**12:00/12:15** “ALKALI-ACTIVATED CEMENT PASTE RHEOLOGY. EFFECT OF SUPERPLASTICISERS” by C. Varga, M.M. Alonso and F. Puertas.

**12:15/12:30** “MOLECULAR DESIGN OF PCE SUPERPLASTICIZERS FOR ALKALI ACTIVATED BLENDED CEMENTS” by D. Marchon, U. Sulser, A. Eberhardt and R.J. Flatt.



## SESSION 1.2.2

### BITUMINEOUS MATERIAL

ROOM  
TIME SHIFT  
CHAIR

Salle des thèses– Les Cordeliers  
13:35/17:10  
Prof. Manfred PARTL / Dr. Emmanuel CHAILLEUX

**13:35/14:05 INTRODUCTION LECTURE “BITUMINEOUS MATERIALS”** by Dr. Emmanuel CHAILLEUX.

**14:05/14:20 [SELECTED PAPER]** “APPLICATION OF LARGE DEFORMATION CIRCULAR CYLINDER TORSION TEST FOR IDENTIFICATION OF MATERIAL MODEL AND PARAMETERS IN CASE OF MODIFIED BINDERS” by M. Gajewski and S. Jemioło.

**14:20/14:35 [SELECTED PAPER]** “ORIGINAL APPROACH TO PREDICT FATIGUE ENDURANCE LIMIT OF ASPHALT BINDERS CONSIDERING HEALING CAPACITY” by F. Canestrari, A. Virgili, A. Graziani and A. Stimilli.

**14:35/14:50 [SELECTED PAPER]** “AN EXPERIMENTAL APPROACH TO THE RHEOLOGICAL CHARACTERIZATION OF BITUMINOUS MIXTURES BASED ON PSEUDO-RANDOM STRESS EXCITATIONS ” by A. Virgili, F. Canestrari and A. Graziani.

**14:50/15:05 [SELECTED PAPER]** “MODELING THE PHASE ANGLE MASTER CURVES OF MODIFIED BITUMINOUS BINDERS: ESTIMATING THE PLATEAU ZONE USING HEAVISIDE STEP FUNCTION” by S. M. Asgharzadeh, N. Tabatabaee, K. Naderi and M. Partl.

15:05/15:10

BREAK

**15:10/15:25 [SELECTED PAPER]** “COMBINED EFFECT OF RECLAIMED ASPHALT AND SELECTED BINDERS ON STIFFNESS AND LOW-TEMPERATURE CHARACTERISTICS OF HIGH STIFFNESS MODULUS ASPHALT CONCRETE” by K. Miláčková, J. Valentin and P. Mondschein.

**15:25/15:40 [SELECTED PAPER]** “HUET MODEL FOR OSCILLATORY AND STATIC LOADING OF ASPHALT BINDERS AT LOW TEMPERATURE” by K.H. Moon, M. Marasteanu and A. Cannone-Falchetto.

**15:40/15:55** “DEVELOPMENT OF A NEW METHOD TO ASSESS THE LOW TEMPERATURE PROPERTIES OF BITUMINOUS BINDERS WITH THE DYNAMIC SHEAR RHEOMETER” by M.bueno, M.Hugener and M. Partl.

## SESSION 1.2.2

### BITUMINEOUS MATERIAL

ROOM	Salle des thèses– Les Cordeliers
TIME SHIFT	13:35/17:10
CHAIR	Prof. Manfred PARTL / Dr. Emmanuel CHAILLEUX

**15:55/16:10** “INFLUENCE OF RAP AND ASPHALT MIX COMPOSITION ON MECHANICAL PROPERTIES OF ASPHALT MIXES” by S. Mangiafico, H. Di Benedetto, C. Sauzéat, F. Olard, S. Pouget, S. Dupriet, L. Planque and R. Van Rooijen.

**16:10/16:25** “HETEROGENEITY OF RECLAIMED ASPHALTS (RA) AND ASPHALTS CONTAINING RA” by M. Lopes, T. Gabet, V. Mouillet and L. Bernucci.

**16:25/16:40** “RHEOLOGICAL BEHAVIOR OF ASPHALTITE-MODIFIED BITUMINOUS BINDERS” by A. Themeli, E. Chailleux, F. Farcas, C. Chazallon and J-L. Duchez.

**16:40/16:55** “THE USE OF LINEAR AMPLITUDE SWEEP TESTS TO CHARACTERIZE FATIGUE DAMAGE IN FINE AGGREGATE MATRICES” by Renato P. Coutinho, Veronica T. F. Castelo Branco, Lucas F. de A. L. Babadopulos and Jorge B. Soares.

**16:55/17:10** “INFLUENCE OF THE INTERLAYER CONTACT SURFACE CONDITIONS ON THE SHEAR PERFORMANCE” by A. Boschetto, L. Bottini, A. D’Andrea and C. Tozzo.

SESSION 1.2.3

FIBER REINFORCED CONCRETE (I)

ROOM	Salle des thèses– Les Cordeliers
TIME SHIFT	17:20/18:50
CHAIR	Prof. Liberato FERRARA

**17:20/17:50 INTRODUCTION LECTURE** “FIBER REINFORCED CONCRETE” by Dr. Steffen GRUNEWALD.

**17:50/18:05** “EXPERIMENTAL TECHNIQUES WITH ASSOCIATED DATA INTERPRETATION METHODS FOR CHARACTERISING RHEOLOGY OF FIBER REINFORCED CEMENT-BASED MATERIALS FOR EXTRUSION” by X. Zhou and Z. Li.

**18:05/18:20** “RHEOLOGICAL BEHAVIOUR OF CEMENT MORTARS REINFORCED WITH ACRYLIC FIBRES” by L-A. Pereira de Oliveira, J-C. Monteiro de Carvalho and M-C. Santos Nepomuceno.

**18:20/18:35 [SELECTED PAPER]** “THE EFFECT OF MINERAL ADDITIONS AND ADDING VARIOUS TYPES, LENGTH AND VOLUME OF FIBERS ON FRESH PROPERTIES OF SELF-COMPACTING CONCRETE” by G-A. Samad Salman.

**18:35/18:50** “INFLUENCE OF LENGTH AND DOSAGE OF POLYPROPYLENE FIBRES ON THE FRESH AND HARDENED PROPERTIES OF SELF-COMPACTING CONCRETE” by K. K. Sideris

SESSION 1.3.1

**SELF COMPACTING CONCRETES WITH LOW ENVIRONMENTAL IMPACTS**

ROOM  
TIME SHIFT  
CHAIR

Bilski Pasquier— Les Cordeliers  
10:15/12:30  
Prof. Geert DE SCHUTTER / Prof. Ólafur WALLEVIK

**10:15/10:45 INTRODUCTION LECTURE “SELF COMPACTING CONCRETES WITH LOW ENVIRONMENTAL IMPACTS” by Prof. Ólafur WALLEVIK.**

**10:45/11:00 [SELECTED PAPER] “HIGHLY WORKABLE ECO-FRIENDLY CONCRETES – INFLUENCE OF THE CONSTITUENTS ON THE RHEOLOGICAL PROPERTIES” by T. Proske, M. Rezvani, S. Hainer and C-A. Graubner.**

**11:00/11:15 “LOW CEMENTITOUS SELF CONSOLIDATING CONCRETE (LF SCC) – A DEFINITE POSSIBILITY IN ASIA PACIFIC” by N. Kar and J.R. Bolt.**

**11:15/11:30 “SELF-COMPACTING CONCRETE WITH LOW BINDER – THE NEW BEGINNING FOR SELF-COMPACTING CONCRETES USED IN POLAND” by A. Wcislo and K. Kuniczuk.**

**11:30/11:45 “SSCC – SUSTAINABLE SELF-COMPACTING CONCRETE” by A. Kanellopoulos, D. Nicolaides and M.F. Petrou.**

**11:45/12:00 “SCC PRODUCED WITH HIGH VOLUMES OF GROUND COAL BOTTOM ASH ” by W.L. Repette, R. Pilar, L. Onghero and A.J. Dalmoro.**

**12:00/12:15 “THE EFFECTS OF BINARY AND TERNARY MIXES WITH FLY ASH (FA) AND LIMESTONE FILLER (LF) ON SHRINKAGE AND MECHANICAL PROPERTIES OF SELF-COMPACTING CONCRETE (SCC)” by P.R. da Silva and J. de Brito.**

**12:15/12:30 “DRYING SHRINKAGE BASED FLY ASH BLENDED SELF COMPACTING CONCRETE MIX DESIGN ” by S. Chundupalli, G.J. Jadaprolu and V.R. Nelluru.**

## SESSION 1.3.2

### DURABILITY OF SELF-COMPACTING CONCRETE

ROOM  
TIME SHIFT  
CHAIR

Bilski Pasquier– Les Cordeliers  
13:45/16:20  
Prof. Mette GEIKER

**13:45/14:15 INTRODUCTION LECTURE** “DURABILITY OF SELF COMPACTING CONCRETE” by Prof. Geert DE SCHUTTER.

**14:15/14:30** “FREEZE-THAW EFFECT ON THE SELF-COMPACTING PUMICE AGGREGATE CONCRETE” by M. Emirođlu, Y. Erdođdu, B. omak and A. Yalama.

**14:30/14:45** “THE EFFECT OF SILICA FUME AND METAKAOLIN ON SELF-COMPACTING CONCRETE DURABILITY” by I.P. Sfikas, E.G. Badogiannis and K.G. Trezos.

**14:45/15:00 [SELECTED PAPER]** “EVALUATION OF POROSITY IN SELF-COMPACTING CONCRETE (SCC) PRODUCED WITH FLY ASH (FA) AND LIMESTONE FILLER (LF)” by P.R. da Silva and J. de Brito.

**15:00/15:15 [SELECTED PAPER]** “RELATIONSHIP BETWEEN ELECTRICAL CONDUCTIVITY AND SPATIAL STRUCTURE OF CAPILLARY PORES IN CEMENT PASTES” by S-I. Igarashi.

15:15/15:20 BREAK

**15:20/15:35** “PERFORMANCE OF SELF-COMPACTING CONCRETE UNDER ACIDIC ENVIRONMENT” by S. Venkateswara Rao, M.V. Seshagiri Rao, D. Ramaseshu and P.R. Kumar.

**15:35/15:50** METHOD FOR RAPID ASSESSMENT OF INTERNAL DAMAGE OF CONCRETE EXPOSED TO FREEZE-THAW CYCLES” by Z. Wang , Y. Yao and L. Wang.

**15:50/16:05** “DURABILITY OF SELF-COMPACTING CONCRETE WITH PARTIAL REPLACEMENT OF FINE AGGREGATE BY GRANULATED BLAST FURNACE SLAG” by C. Parra, I. Miđano, M. Valcuende, F. Benito and C. Rodrđguez.

**16:05/16:20 [SELECTED PAPER]** “YOU ARE YOUNG ONCE, BUT CAN STAY IMMATURE INDEFINITELY: HOLISTIC VIEW OF SCC DURABILITY” by M. T. Bassuoni and M. L. Nehdi.

### SESSION 1.3.3

## MINERAL ADDITIVES AND MIX DESIGN

ROOM  
TIME SHIFT  
CHAIR

Bilski Pasquier– Les Cordeliers  
16:50/18:55  
Prof. Tor HAMMER

**16:50/17:05** “INFLUENCE OF NANO-CLAY ADDITION AND CLAY REPLACEMENT ON THIXOTROPIC BEHAVIOR OF FRESH CEMENT PASTE ” by Z. Quanji, K. Wang, G.R. Lomboy and S.P. Shah.

**17:05/17:20 [SELECTED PAPER]** “RATIONAL USE OF FLASH METAKAOLIN APPLIED TO INDUSTRIAL DESIGN OF SELF-COMPACTING CONCRETE” by P. Diederich, R. Bucher, M. Mouret, M. Cyr and G. Escadeillas.

**17:20/17:35 [SELECTED PAPER]** “EFFECT OF SILICA FUME ON SELF-COMPACTING CONCRETE” by H. Abdelgader, A. Saud and A. El-Baden.

**17:35/17:50** “INFLUENCE OF SILICA FUME IN SELF COMPACTING CONCRETE UNDER ITS FRESH AND HARDENED STATE” by J. Karthikeyan and C. Arunkumar.

**17:50/18:05 [SELECTED PAPER]** “RHEOLOGICAL BEHAVIOUR OF FRESH MORTAR FORMULATED FROM SELF-COMPACTING HIGH PERFORMANCE CONCRETE INCORPORATING RICE HUSK ASH ” by H. Thanh Le, K. Siewert and H-M. Ludwig.

**18:05/18:20** “RHEOLOGICAL PROPERTIES OF SELF-CONSOLIDATING MORTARS CONTAINING NANO SIO<sub>2</sub>” by A.A. Ramezani pour and M. Mahdikhani.

**18:20/18:40** “STRESS RELAXATION AND CRACKING SENSITIVITY OF SELF-CONSOLIDATING CONCRETE: EFFECT OF LIMESTONE FILLER CONTENT” by H. Samouh, E. Rozière, A. Loukili and P. Sigwalt.

**18:40/18:55** “SELF-COMPACTING CONCRETE WITH GROUND WASTE GLASS AND ASH” by P. Kara.

## SESSION 2.1.1

### ADMIXTURE AND POLYMERS FOR CONSTRUCTION MATERIALS (I)

Location	Faraboeuf – Les Cordeliers
Time shift	10:00/12:30
Chair	Dr. Nicolas ROUSSEL / Prof. Robert FLATT

**10:00/10:30 INTRODUCTION LECTURE** “ADMIXTURE AND POLYMERS FOR CONSTRUCTION MATERIALS” by Prof. Robert FLATT.

**10:30/10:45 [SELECTED PAPER]** “NEW POLY-PHOSPHONIC SUPERPLASTICIZERS PARTICULARLY SUITED FOR THE MANUFACTURE OF HIGH PERFORMANCE SCC” by M. Bellotto and L. Zevnik.

**10:45/11:00** “MIX DESIGN OF HIGH STRENGTH SELF COMPACTED CONCRETE (HSSCC) USING ADVA SUPERPLASTICIZER” by S. Madsuri, E. Arijoeni Basoenondo, E. Tjahjono and N. Yunita.

**11:00/11:15** “NEW TYPE OF SUPERPLASTICIZER FOR SCC MIXTURES WITH INCREASED ROBUSTNESS” by V.B. Bosiljkov, N. Gašperič and L. Zevnik.

**11:15/11:30** ““WATER RETENTION” ENHANCEMENT IN MORTARS DUE TO CELLULOSE ETHERS: VISCOSITY OR FILTRATION EFFECT?” by C. Marlière, E. Mabrouk, P. Faure, M. Lamblet and P. Coussot.

**11:30/11:45 [SELECTED PAPER]** “PORTLAND-CEMENT BASED SIMPLE REPAIRING MORTAR WITH MODIFIED INORGANIC ADMIXTURES AND SAP” by K. Ichimiya, H-W. Reinhardt and A. Assmann.

**11:45/12:00** “EFFECT OF SUPERABSORBENT POLYMERS (SAP) ON RHEOLOGICAL PROPERTIES OF FRESH CEMENT-BASED MORTARS” by E. Secieru and V. Mechtcherine.

**12:00/12:15 [SELECTED PAPER]** “FROM RHEOMETER TO CONCRETE SCALE: A STUDY OF SUPERPLASTICIZER-DESIGN-CONTROLLED THIXOTROPY TO MATCH SCC APPLICATION REQUIREMENTS” by L. Ferrari, P. Boustingorry, A. Pineaud and L. Bonafous.

**12:15/12:30** “A SIMPLE TEST METHOD TO ASSESS THE INFLUENCE OF PCES ON THE RHEOLOGY OF FLOWABLE CEMENTITIOUS SYSTEMS” by W. Schmidt, H. J. H. Brouwers, H-C. Kühne and B. Meng.

## SESSION 2.1.2

### ADMIXTURE AND POLYMERS FOR CONSTRUCTION MATERIALS (II)

Location	Faraboeuf – Les Cordeliers
Time shift	13:35/16:55
Chair	Dr. Nicolas ROUSSEL / Prof. Johann PLANK

**13:35/14:05 INTRODUCTION LECTURE** “ADMIXTURE AND POLYMERS FOR CONSTRUCTION MATERIALS” by Prof. Johann PLANK.

**14:05/14:20** “CHARACTERIZATION OF CEMENT-ADMIXTURE INTERACTION USING TUNING-FORK VIBRATION” by C-T. Chen, and W-L. Chou.

**14:20/14:35 [SELECTED PAPER]** “VALIDATING CONCRETE ADMIXTURE DOSAGES WITH UV-VIS SPECTROSCOPY” by N. Ghafoori and M. Barfield.

**14:35/14:50** “RHEOLOGICAL PROPERTIES OF PORTLAND CEMENT PASTES WITH POLYCARBOXYLATE SUPERPLASTICIZERS” by Y. Zhang, X. Kong and J. Wang.

**14:50/15:05 [SELECTED PAPER]** “EFFECT OF DIFFERENT TYPES OF SUPERPLASTICIZERS ON FRESH PROPERTIES AND STRENGTH OF SELF-CONSOLIDATING CONCRETE” by A. Mardani-Aghabaglou, M. Tuyan, G. Yılmaz, O. Ariöz and K. Ramyar.

15:05/15:10 BREAK

**15:10/15:25** “EFFECTS OF COMBINED CHEMICAL ADMIXTURES ON CEMENT PASTE RHEOLOGY ” by K. Lesage, O. Cizer, L. Vandewalle, G. De Schutter, B. Desmet and J. Vantomme.

**15:25/15:40** “ADSORPTION OF SUPERPLASTICISERS ON THE C3A AND CA PHASES IN CEMENT ” by M.M. Alonso and F. Puertas.

**15:40/15:55** “COMPETITIVE ADSORPTION OF POLYMERS AT THE SURFACE OF CEMENT PARTICLES” by H. Bessaies-Bey, R. Baumann, M. Schmitz, M. Radler and N. Roussel.

**15:55/16:10 [SELECTED PAPER]** “SYNERGISTIC EFFECT OF CHEMICAL ADMIXTURES ON WORKABILITY OF MORTAR CONTAINING ZEOLITE POWDER” by H.A. Jafari, J. Berenjian, M. Shekarchi and B. Ahmadi.



## SESSION 2.1.2

### ADMIXTURE AND POLYMERS FOR CONSTRUCTION MATERIALS (II)

Location	Faraboeuf – Les Cordeliers
Time shift	13:35/16:55
Chair	Dr. Nicolas ROUSSEL / Prof. Johann PLANK

**16:10/16:25** “IMPACT OF VARIETIES IN CLINKER PARAMETERS ON RHEOLOGICAL PROPERTIES OF CEMENT PASTE IN COMBINATION WITH DIFFERENT PCE-MOLECULE STRUCTURES ” by A. Schneider, S. Ratzinger and A. Marcini.

**16:25/16:40** “INFLUENCE OF CEMENT GRAIN SPHERICITY ON THE COMPATIBILITY BETWEEN CEMENT AND WATER REDUCER” by L. Wang, Y. Yao, X. Jia and P. Tian.

**16:40/16:55** “COMPATIBILITY ASSESSMENT OF COMMERCIAL CEMENTS AND SUPERPLASTICIZERS” by J. Custódio, S. Coelho, J. Catarino, M. Vieira, A. Ribeiro, J. Prata and M. Matos.

### SESSION 2.1.3

## LIGHTWEIGHT CONSTRUCTION MATERIALS

Location	Faraboeuf – Les Cordeliers
Time shift	17:05/18:50
Chair	Prof. Kamal KHAYAT

**17:05/17:20** “THE EFFECTS OF HIGH TEMPERATURE ON LIGHTWEIGHT SELF-COMPACTING MORTARS” by M. Emiroğlu, A. Yalama, B. Çomak and Y. Erdoğdu.

**17:20/17:35** “APPLICATION OF STATISTICAL MODELS IN PROPORTIONING LIGHTWEIGHT SELF-CONSOLIDATING CONCRETE” by A. Lotfy, K.M. Anwar Hossain and M. Lachemi.

**17:35/17:50** “CHARACTERISTICS OF LIGHTWEIGHT SELF-CONSOLIDATING CONCRETE INCORPORATING BINARY BLEND OF VOLCANIC MATERIALS ” by K. M. Anwar Hossain.

**17:50/18:05** “AN APPROACH TO FORMULATE SUITABLE LIGHTWEIGHT SELF-COMPACTING” by L. Bello, E.G. Diaz and P. Rougeau.

**18:05/18:20** “COMPARATIVE FIELD EVALUATION OF LIGHTWEIGHT AND NORMAL-WEIGHT SCC FORMWORK PRESSURE” by M. Kaffetzakis and C. Papanicolaou.

**18:20/18:35** “NEW LIGHTWEIGHT CONCRETE FORMULATION OBTAINED FROM EXPANDED CLAY” by C. Halima.

**18:35/18:50** “EFFECT OF THE TYPE OF COARSE LIGHTWEIGHT AGGREGATE ON PROPERTIES OF LIGHTWEIGHT SELF-COMPACTING CONCRETE” by M. Sonebi, J. Kwasny, A. Linton and S.N.M. Torsad.

## SESSION 2.2.1

### FIBER REINFORCED CONCRETE (II)

Location	Salle des thèses– Les Cordeliers
Time shift	10:00/12:30
Chair	Prof. Liberato FERRARA / Dr. Steffen GRUNEWALD

**10:00/10:15** “EFFECTS OF CASTING PROCESS ON TOUGHNESS PROPERTIES OF FIBER REINFORCED-SELF COMPACTING CONCRETE AS FROM EN 14651” by L. Ferrara and M. Cremonesi.

**10:15/10:30** “COMPOSITION OF STEEL FIBRE REINFORCED SELF-COMPACTING CONCRETE FOR OPTIMAL RHEOLOGICAL AND MECHANICAL PROPERTIES” by T. Ponikiewski and J. Golaszewski.

**10:30/10:45** “MIX DESIGN AND MECHANICAL PROPERTIES OF ULTRA HIGH PERFORMANCE FIBRE REINFORCED CEMENTITIOUS COMPOSITES (UHPRCC)” by D. Nicolaidis, A. Kanellopoulos, P. Savva, A. Mina and M.F. Petrou.

**10:45/11:00 [SELECTED PAPER]** “POTENTIAL METHODS FOR QUALITY CONTROL OF FIBRE DISTRIBUTION IN FRC SCC” by G. Žirgulis, M.R. Geiker, O. Svec and T. Kanstad.

**11:00/11:15 [SELECTED PAPER]** “SELF-COMPACTING FIBRE REINFORCED CONCRETE APPLIED IN THIN PLATES” by S. Grünewald, R. Shionaga and J.C. Walraven.

**11:15/11:30 [SELECTED PAPER]** “RHEOLOGY OF FIBRE REINFORCED FINE-GRAINED HIGH PERFORMANCE CONCRETE FOR THIN-WALLED ELEMENTS - EFFECT OF TYPE AND CONTENT OF STEEL FIBRES” by S. Illguth, D. Lowke and C. Gehlen.

**11:30/11:45 [SELECTED PAPER]** “SHEAR BEHAVIOUR OF STEEL FIBRE REINFORCED SELF-COMPACTING CONCRETE” by P. Van Itterbeeck, B. Parmentier, B. Craeye and L. Vandewalle.

**11:45/12:00** “FLEXURAL CREEP PERFORMANCE OF FR-SCC FOR REPAIR OF CONCRETE INFRASTRUCTURE” by F. Kassimi and K.H. Khayat.

**12:00/12:15 [SELECTED PAPER]** “TESTING AND SIMULATION OF FIBRE ORIENTATION IN REINFORCED WALLS CAST WITH SFRSCC” by L.N. Thrane, O. Svec, H. Stang and T. Kasper.

**12:15/12:30** “AN EXPERIMENTAL AND NUMERICAL STUDY ON THE LONG-TERM BEHAVIOUR OF CRACKED FIBRE-REINFORCED SELF-COMPACTING CONCRETE BEAMS” by N. Buratti and C. Mazzotti.

## SESSION 2.2.2

# FOAM AND AIR IN CONSTRUCTION MATERIALS

Location	Salle des thèses– Les Cordeliers
Time shift	13:45/16:00
Chair	Dr. Dimitri FEYS

**13:45/14:15 INTRODUCTION LECTURE** “FOAM AND AIR IN CONSTRUCTION MATERIALS” by Dr. Olivier PITOIS.

**14:15/14:30 [SELECTED PAPER]** “EFFECT OF ENTRAPPED AND ENTRAINED AIR ON THE WORKABILITY AND RHEOLOGY OF CEMENTITIOUS MATERIALS” by J. Dils, V. Boel, S. Aggoun, A. Kaci and G. De Schutter.

**14:30/14:45** “AIR-VOID CHARACTERISATION OF SELF-COMPACTING CONCRETE ” by K. Lesage, J. Andries and L. Vandewalle.

**14:45/15:00** “RHEOLOGICAL BEHAVIOUR OF SUSPENSIONS OF BUBBLES IN A YIELD STRESS FLUID” by L. Ducloué, J. Goyon, M. Kogan, X. Chateau, O. Pitois and G. Ovarlez.

**15:00/15:15** “FLUIDIFYING EFFECT OF AIR ENTRAINING AGENTS (AEA)” by J. Hot, D. Feys and N. Roussel.

**15:15/15:30** “STRENGTHENING OF SOFT POLYMER FOAMS LOADED WITH RIGID INCLUSIONS” by O. Pitois, Y. Khidas and B. Haffner.

**15:30/15:45** “STUDY OF THE INFLUENCE OF SLUMP AND AIR CONTENT ON COMPRESSIVE STRENGTHS OF LOCAL CONCRETES” by S.M. El Amine Boukli Hacene, F. Ghomari, F. Schoefs and A. Khelidj.

**15:45/16:00** “STUDY ON THE PORE STRUCTURED MODEL CONSIDERING WATER DIFFUSION DEPENDING ON PORE DIAMETER” by K. Ohtsuki and H. Oshita.

SESSION 2.2.3

CASE, PRODUCT AND MARKET STUDIES (I)

Location	Salle des thèses– Les Cordeliers
Time shift	16:05/16:50
Chair	Prof. Nader GHAFORI

**16:05/16:20** “RUSSIAN EXPERIENCE IN SCC PRODUCTION AND USE” by V. Falikman, A. Pavlov and P. Vasilyev.

**16:20/16:35** “KEY SUCCESS FACTORS TO MEET DEMANDING SPECIFICATIONS WITH SCC” by M. Shink, V. Waller, G. Brager, L. Nolot, G. Calaciura, M. Guérinet and E. Mercier.

**16:35/16:50** “ONLY TALL THINGS CAST SHADOWS: CHALLENGES OF SCC IN SUPER-TALL BUILDINGS” by M.L. Nehdi.

## SESSION 2.2.4

### CASE, PRODUCT AND MARKET STUDIES (II)

Location	Salle des thèses– Les Cordeliers
Time shift	17:05/18:35
Chair	Prof. Nader GHAFORI

**17:05/17:20** “DESIGN AND CONSTRUCTION OF AN UNDERPASS BRIDGE USING STEEL FIBRE REINFORCED SCC” by M. Blond, A. Winkler, A. Nybroe, M. Strøm, L.N. Thrane, B. Tvede-Jensen and T. Kasper.

**17:20/17:35** “RHEOLOGICAL OPTIMISATION FOR FLOWABLE CONCRETE FOR SUB-SAHARAN ENVIRONMENTAL CONDITIONS” by W. Schmidt, N.S. Msinjili and H-C. Kühne.

**17:35/17:50** “PERFORMANCE OF SULPHO-BASED RAPID HARDENING CONCRETE” by S. Tortelli, M. Borsa and M. Marchi.

**17:50/18:05** “SELF-COMPACTING MICROCONCRETE” by G.R. de Sensale, R. Rolfi, C. Romay and V. Ulfe.

**18:05/18:20 [SELECTED PAPER]** “FLEXURAL AND SHEAR BEHAVIOUR OF PRECAST SANDWICH SLABS COMPRISING THIN WALLED STEEL FIBRE REINFORCED SELF-COMPACTING CONCRETE” by C. de Sousa, J.O. Barros, M. Azenha and R. Lameiras.

**18:20-18:35** “SULFATE RESISTANCE AND CARBONATION OF SELF-COMPACTING CONCRETE BASED WITH VARIOUS MINERAL ADMIXTURES: COMPARATIVE STUDY” by H. Siad, H. Mesbah, S. Kamali-Bernard and M. Mouli.

## SESSION 2.3.1

# MECHANICAL AND THERMAL PROPERTIES OF SELF-COMPACTING CONCRETE

Location	Bilski Pasquier– Les Cordeliers
Time shift	10:00/12:30
Chair	Prof. Geert DE SCHUTTER/Prof. Kamal KHAYAT

**10:00/10:15** “CONSTITUTIVE BEHAVIOUR OF FERROCEMENT CONFINED REINFORCED SELF COMPACTING CONCRETE (FCRSCC) UNDER AXIAL COMPRESSION” by P.R. Kumar and M.S. Chand.

**10:15/10:30 [SELECTED PAPER]** “INFLUENCE OF SPECIMEN SHAPE AND DIMENSIONS ON THE COMPRESSIVE STRENGTH OF SELF-COMPACTING CONCRETE” by V. Boel, B. Craeye, P. Desnerck, F. Van Der Vurst and G. De Schutter.

**10:30/10:45** “CONVERSION FACTORS FOR DIRECT AND INDIRECT TENSILE STRENGTH IN CASE OF SELF-COMPACTING CONCRETE” by P. Desnerck, R. Raeymaekers and G. De Schutter.

**10:45/11:00** “A CREEP MODEL FOR SELF-COMPACTING CONCRETE TAKING INTO ACCOUNT MIX DESIGN PARAMETERS” by C. Mazzotti and E. Galli.

**11:00/11:15** “INFLUENCE OF SELF-COMPACTING FRESH PROPERTIES ON BOND WITH REINFORCEMENT” by I. Pop, G. De Schutter, P. Desnerck and T. Onet.

**11:15/11:30 [SELECTED PAPER]** “RESIDUAL BOND STRESS OF SELF-COMPACTING CONCRETE SPECIMENS AFTER HIGH TEMPERATURE TREATMENT” by K.G. Trezos and I.P. Sfikas.

**11:30/11:45** “THERMAL PROFILE OF SELF-COMPACTING CONCRETE MIXTURES INCORPORATING METAKAOLIN” by E.G. Badogiannis, K.G. Trezos and I.P. Sfikas.

**11:45/12:00 [SELECTED PAPER]** “HIGH TEMPERATURE BEHAVIOUR OF SELF-COMPACTING CONCRETE WITH LIMESTONE POWDER” by K. Pistol, F. Weise and B. Meng.

**12:00/12:15** “THE INFLUENCE OF LIMESTONE FILLER ON FIRE BEHAVIOUR OF SELF-COMPACTING CONCRETE” by P.A. Gil, M. del Carmen Andrade Perdrix, Á.C. Talavera, M.E.M. Torregrosa.

**12:15/12:30** “MULTISCALE APPROACH FOR THE MIX DESIGN OF SELF-COMPACTING REFRACTORY CONCRETES” by E. Cailleux, J. Pierard and V. Pollet.

## SESSION 2.3.2

# INCORPORATION OF WASTES IN CONSTRUCTION MATERIALS

Location	Bilski Pasquier– Les Cordeliers
Time shift	13:45/15:45
Chair	Prof. Mohammed Sonebi

**13:45/14:15 INTRODUCTION LECTURE** “INCORPORATION OF WASTES IN CONSTRUCTION MATERIALS” by Prof. Guillaume HABERT.

**14:15/14:30** “FRESH PROPERTIES AND COMPRESSIVE STRENGTH OF SELF-COMPACTING CONCRETE CONTAINING WASTE FLUID CATALYTIC CRACKING CATALYST” by J.L. António, P. Silva and C. Costa.

**14:30/14:45 [SELECTED PAPER]** “THE RHEOLOGICAL PROPERTIES OF FRESH CONCRETE AND MORTAR WITH HIGH CALCIUM FLY ASH IN THE VARIABLE TEMPERATURES” by J. Gołaszewski, A. Kostrzanowska and G. Cygan.

**14:45/15:00** “AN EXPERIMENTAL STUDY ABOUT THE POSSIBILITY OF SUBSTITUTING NATURAL AGGREGATES WITH EAF SLAG IN CONCRETE PRODUCTION” by F. Faleschini and C. Pellegrino.

**15:00/15:15 [SELECTED PAPER]** “RHEOLOGICAL BEHAVIOUR OF CEMENTS BLENDED WITH CONTAINING CERAMIC WASTES” by C. Medina, P.F.G. Banfill, M.I. Sánchez de Rojas and M. Frías.

**15:15/15:30** “INFLUENCE OF FILLERS ON THE PROPERTIES OF SELF-COMPACTING CONCRETE” by H. Yildirim, E.G. Daskiran and O. Sengul.

**15:30/15:45** “STUDY OF HARDENED STATE PROPERTIES OF SCC WITH PARTIAL REPLACEMENT OF NATURAL AGGREGATE BY BLAST FURNACE SLAG” by C. Parra, I. Miñano, M. Valcuende, F. Benito and C. Rodríguez.



SESSION 2.3.3

**MIXING, PRODUCTION AND ONLINE CONTROL OF  
CONSTRUCTION MATERIALS (I)**

Location	Bilski Pasquier– Les Cordeliers
Time shift	15:50/16:50
Chair	Dr. Bogdan CAZACLIU / Dr. Emmanuelle GOUILLARD

**15:50/16:20 INTRODUCTION LECTURE** “MIXING OF CONSTRUCTION MATERIALS” by Dr. Emmanuelle GOUILLARD.

**16:20/16:35 [SELECTED PAPER]** “MIXING SELF-COMPACTING CONCRETE: MIXERS, MIXING METHODS, MIXING TIME” by B. Cazacliu.

**16:35/16:50** “METHOD FOR MIXING SHEARING ESTIMATION IN CEMENTITIOUS MATERIALS” by M. David, K. Mehiri, S. Dehault and N. Roussel.

SESSION 2.3.4

**MIXING, PRODUCTION AND ONLINE CONTROL OF  
CONSTRUCTION MATERIALS (II)**

Location	Bilski Pasquier– Les Cordeliers
Time shift	17:05/18:35
Chair	Dr. Bogdan CAZACLIU

**17:05/17:20** “INFLUENCE OF THE MIXING ORDER PROCEDURE ON THE WORKABILITY OF CONCRETE” by L. Zevnik and M. Bellotto.

**17:20/17:35** “EFFECT OF PROLONGED MIXING TIME ON FRESH AND HARDENED PROPERTIES OF SELF-CONSOLIDATING MORTAR” by I. Mehdipour, N. Nouri, M.H. Karimnezhad, H.R. Salehi and M. Shahrabadi.

**17:35/17:50 [SELECTED PAPER]** “THE ASSESMENT AND CONTROL OF THE RHEOLOGICAL PROPERTIES OF SELF-COMPACTING CONCRETE IN A CONCRETE MIXER” by F. Fleischmann, M. Greim and W. Kusterle.

**17:50/18:05** “STABILITY OF SCC – ROBUSTNESS FOR CHANGES IN WATER CONTENT AND SAND PARTICLE DISTRIBUTION” by T.A.M. Hammer, S. Smeplass, K. De Weerdts and Y. Peng.

**18:05/18:20** “EFFECT OF TEMPERATURE AND AGITATION ON FRESH PROPERTIES OF SELF-CONSOLIDATING CONCRETE” by J. Pan, K. Khayat and E. Wirquin.

**18:20/18:35 [SELECTED PAPER]** “MECHANISMS FOR THE CHANGES IN FLUIDITY AND HYDRATION KINETICS OF GROUTS AFTER MIXING” by K. Takahashi and T. Bier.

## SESSION 3.1.1

### CASTING AND PLACING PROCESSES (I)

Location	Faraboeuf – Les Cordeliers
Time shift	08:15/12:00
Chair	Dr. Tilo PROSKE

**08:15/08:45 INTRODUCTION LECTURE** “PUMPING OF CONCRETE” by Dr. Dimitri FEYS.

**08:45/09:00** “TEST METHODS FOR THE PUMPABILITY OF FRESH CONCRETE WITH AGGREGATES PRODUCED FROM EXCAVATION MATERIAL” by M. Reinhold, A. Riedl and V. Wetzig.

**09:00/09:15** “PREPLACED-AGGREGATE CONCRETE WITH SELF-COMPACTING MORTAR. ON SITE WORLD PREMIER APPLICATIONS” by M. Vieira, A. Bettencourt Ribeiro and A. Camelo.

**09:15/09:30** “EXPERIMENTAL STUDY ON PUMPABILITY OF CONCRETE USING SLIDING PIPE RHEOMETER” by N. Venkatesh Naidu, K. Kasten and V. Mechtcherine.

**09:30/09:45** “EVALUATION OF VIBRATION PROPERTIES OF FRESH CONCRETE WITH DIFFERENT MIX PROPORTIONS” by S-I. Hashimoto, Y. Emoto, C Hashimoto and S. Date.

**09:45/10:00** “EFFECT OF INTERNAL VIBRATION AND CONCRETE RHEOLOGY ON PROPERTIES OF REINFORCED CONCRETE” by G. Grampeix, J. Dupoirier and N. Roussel.

**10:00/10:15 [SELECTED PAPER]** “FRACTURE BEHAVIOUR OF SELF-COMPACTING CONCRETE COMPARED TO VIBRATED CONCRETE” by S. Korte, V. Boel, W. De Corte and G. De Schutter.

10:15/10:30 BREAK

**10:30/10:45 [SELECTED PAPER]** “INTERNAL VIBRATION AND VISCOUS CONCRETE: APPLICATION AND PREDICTION OF THE RADIUS OF ACTION” by G. Grampeix, J. Dupoirier and N. Roussel.

**10:45/11:00** “FILLING CAPACITY OF SELF-COMPACTING CONCRETE AND ITS INFLUENCE ON THE PROPERTIES OF INTERFACE IN ROCK-FILLED CONCRETE ” by Y. Xie, F. Jin, D.J. Corr, M. Chaouche and S.P. Shah.

SESSION 3.1.1

CASTING AND PLACING PROCESSES (I)

Location	Faraboeuf – Les Cordeliers
Time shift	08:15/12:00
Chair	Dr. Tilo PROSKE

**11:00/11:15 [SELECTED PAPER]** *“MODEL OF SCC FLOW THROUGH REINFORCED SECTIONS: EXPERIMENTAL VALIDATION ”* by K. Vasilic, W. Schmidt, H-C. Kühne and N. Roussel.

**11:15/11:30** *“PREDICTION OF FLOW INDUCED INHOMOGENEITIES IN SELF-COMPACTING CONCRETE ”* by M. Geiker, J. Spangenberg, J. Skocek, N. Roussel, J. Hattel, H. Stang and P. Szabo.

**11:30/11:45 [SELECTED PAPER]** *“NUMERICAL SIMULATION OF GRAVITY INDUCED AGGREGATE MIGRATION IN LARGE IN-SITU SCC WALL CASTINGS”* by J. Spangenberg, J.H. Hattel, N. Roussel and M.R. Geiker.

**11:45/12:00** *“RHEOLOGICAL PARAMETERS USED FOR DELIBERATE DEFORMATION OF A FLEXIBLE MOULD AFTER CASTING”* by R. Schipper, S. Grünewald and P. Raghunath.

## SESSION 3.1.2

### CASTING AND PLACING PROCESSES (II)

Location	Faraboeuf – Les Cordeliers
Time shift	13:30/15:00
Chair	Dr. Dimitri FEYS

**13:30/13:45** “NUMERICAL SIMULATIONS OF CONCRETE FLOWS” by J. Wallevik.

**13:45/14:00** “CONCRETE PRESSURE ON INCLINED FORMWORK – EXPERIMENTAL STUDIES AND MODELING” by T. Proske, B. Freund and C-A. Graubner.

**14:00/14:15** “PROPERTIES OF SELF-COMPACTING UNDERWATER CONCRETES SUBJECT TO HYDROSTATIC PRESSURE” by E. Horszczaruk, P. Brzozowski and G. Adamczewski.

**14:15/14:30** “SMART DYNAMIC CASTING OR HOW TO EXPLOIT THE LIQUID TO SOLID TRANSITION IN CEMENTITIOUS MATERIALS” by A.R. Shahab, E. Kristensen, P. Fischer, F. Gramazio, M. Kohler and R.J. Flatt.

**14:30/14:45** “INFLUENCE OF THE WORKABILITY ON ADHESIVE PROPERTIES OF POLYMER-MODIFIED MORTARS USED FOR REPAIR” by I.L. Tchetgnia Ngassam, S. Marceau and T. Chaussadent.

**14:45/15:00** “PREDICTION OF THE RAM EXTRUSION FORCE OF CEMENT-BASED MATERIALS” by A. Perrot.

SESSION 3.2.1

ORGANIC AGGREGATES

Location	Salle des thèses – Les Cordeliers
Time shift	10:30/12:15
Chair	Dr. Sandrine MARCEAU / Prof. Sofiane AMZIANE

**10:30/11:00 INTRODUCTION LECTURE “ORGANIC AGGREGATES”** by Prof. Sofiane AMZIANE.

**11:00/11:15 “INFLUENCE OF PRESATURATION REGIME, PERCENTAGE OF LIME AND COMPACTION ON THE PERFORMANCE OF HEMP CONCRETE”** by M. Sonebi, A. Robinson and S. Amziane.

**11:15/11:30 “EFFECT OF PLASTERING ON MOISTURE BUFFERING OF HEMP CONCRETE”** by F. Collet, S. Prétot and C. Lanos.

**11:30/11:45 “WATER TRANSFERS WITHIN HEMP LIME CONCRETE FOLLOWED BY NMR”** by P. Faure, U. Peter, D. Lesueur and P. Cousot.

**11:45/12:00 “INFLUENCE OF WETTING-DRYING CYCLES ON THE MECHANICAL, PHYSICO-CHEMICAL AND MICROSTRUCTURAL PROPERTIES OF HEMP CONCRETES”** by P. Hellebois, S. Marceau, M. Guéguen and S. Amziane.

**12:00/12:15 “EFFECT OF MIXTURE CHARACTERISTICS ON HYGRO-MECHANICAL PROPERTIES OF WOOD-AGGREGATE CONCRETE”** by A. Akkaoui, S. Caré and M. Vandamme.

SESSION 3.3.1

**CURING AND EARLY AGE PROPERTIES OF CEMENTITIOUS MATERIALS (I)**

Location	Bilski Pasquier – Les Cordeliers
Time shift	08:15/12:00
Chair	Dr. Pietro LURA

**08:15/08:45 INTRODUCTION LECTURE** *“CURING AND EARLY AGE PROPERTIES OF CEMENTITIOUS MATERIALS”* by Prof. Ole M. JENSEN.

**08:45/09:00** “COMPARATIVE STUDY OF SELF-CURED CONCRETE WITH CONVENTIONALLY CURED CONCRETE” by S. Girish, G.N. Mallikarjuna and L.M. Naveen.

**09:00/09:15** “EFFECT OF MIX COMPOSITION ON RHEOLOGY AND SURFACE FINISH OF CEMENT-BASED MORTARS” by J. Kwasny, M. Sonebi, S. Amziane and J. Plasse.

**09:15/09:30** “STUDY ON THE EFFECTS OF TWO HYDROGELS AS CURING AGENTS FOR MORTARS” by K-C. Hsu, Y-C. Chen and W-H. Hung.

**09:30/09:45** “PLACING AND CURING SELF-COMPACTING CONCRETE IN HOT CLIMATES” by C.F.A. Calado, A. Camões and S. Jalali.

**09:45/10:00** “HYDRO-MECHANICAL PROPERTIES OF FRESH CEMENT PASTES ” by A. Perrot, D. Rangeard, V. Picandet and Y. Mélinge.

**10:00/10:15** “EFFECTS OF MICRO-ORGANISMS ON THE EARLY HYDRATION PROPERTIES OF OPC ” by S. Lee, S. Jeon and M. Song.

10:15/10:30 BREAK

**10:30/10:45** “VISCOSITY OF STRUCTURED MOISTURE AND ITS IMPACT ON HARDENING CEMENT-CONCRETE COMPOSITIONS STRENGTHENING” by D. Stackelberg , B. Vilge and S. Boiko.

**10:45/11:00** “STUDY ON MECHANISM OF VOLUMETRIC CHANGES BY INTERNAL VAPOR DIFFUSION BASED ON KINETIC THEORY OF GASES ” by S. Yokoyama and H. Oshita.

SESSION 3.3.1

**CURING AND EARLY AGE PROPERTIES OF CEMENTITIOUS  
MATERIALS (I)**

Location	Bilski Pasquier – Les Cordeliers
Time shift	08:15/12:00
Chair	Dr. Pietro LURA

**11:00/11:15 [SELECTED PAPER]** “FROM THE CONCRETE TO THE PASTE: A SCALING OF THE CHEMISTRY” by L. Oblak, L. Pavnick and D. Lootens.

**11:15/11:30** “COMPETITION BETWEEN DRYING AND SETTING OF CEMENT PASTE AT EARLY AGE” by O. Yazoghli-Marzouk and C. Boulay.

**11:30/11:45** “ARTIFICIAL NEURAL NETWORK AND PRINCIPAL COMPONENT ANALYSIS FOR PREDICTING DRYING SHRINKAGE OF CONCRETE” by L. Bal , F. Buyle-Bodin , S. Kenai and A. Bal.

**11:45/12:00** “REALIZATION OF A STRUCTURES LABORATORY STRONG FLOOR MADE OF A VHS SCC” by C. Boulay, S. Favre, B. Godart, S. Letort, P. Marchand, S. Rocher and F. Toutlemonde.



## SESSION 3.3.2

# CURING AND EARLY AGE PROPERTIES OF CEMENTITIOUS MATERIALS (II)

Location	Bilski Pasquier – Les Cordeliers
Time shift	13:30/14:45
Chair	Prof. Ole M. JENSEN

**13:30/13:45** “TIME-DEPENDENT PROPERTIES OF CONCRETE AT EARLY AGES: SOLIDIFICATION AND THE STRAIN AND STRESS DEVELOPMENT UNDER RESTRAINED CONDITIONS” by F.C. Antico, P.D. Zavattieri and W.J. Weiss.

**13:45/14:00** “MONITORING OF CEMENT SETTING AND HARDENING WITH A UNIQUE TOOL TO DESCRIBE RHEOLOGICAL, THERMAL AND DIMENSIONAL VARIATIONS” by S. Amziane, A. Perrot, T. Lecompte and V. Picandet.

**14:00/14:15 [SELECTED PAPER]** “INFLUENCE OF MIXING AND CURING TEMPERATURES ON THE PROPERTIES OF FRESH AND HARDENED SELF CONSOLIDATED CONCRETE IN HOT WEATHER CONDITIONS” by V.A Le, F. Cassagnabere and M. Mouret.

**14:15/14:30** “IMPACT OF ADMIXTURES ON THE CRACKING RISK OF SELF-COMPACTING CONCRETE DUE TO PLASTIC SHRINKAGE” by A. Leemann, P. Nygaard and P. Lura.

**14:30/14:45** “HYDROSTATIC PRESSURE MEASUREMENTS FOR FRESH CEMENT PASTE STABILITY DETECTION” by Y. Peng, S. Jacobsen, K. De Weerd and B. Pedersen.

# RILEM WEEK INVITED LECTURES

Chair      *Prof. Ravindra GETTU.*

## TUESDAY – FARABOEUF (LES CORDELIERS)

**08:15/08:45 [ROBERT L'HERMITE MEDALIST LECTURE]** “GEOPOLYMERS AND OTHER ALKALI ACTIVATED MATERIALS – WHY, HOW, AND WHAT?” by John L. PROVIS.

**08:45/09:15 [RILEM TECHNICAL COMMITTEE LECTURE]** “REPORT OF TC 242-MDC (MULTI-DECADE CREEP AND SHRINKAGE OF CONCRETE)” by Z.P. BAZANT.

**09:15/17:50 [RILEM TECHNICAL COMMITTEE LECTURE]** “Report of TC 228-MPS (Mechanical properties of self-compacting concrete)” by K.H. KHAYAT.

## WEDNESDAY – SALLE DES THESES (LES CORDELIERS)

**08:15/08:45 [RILEM TECHNICAL COMMITTEE LECTURE]** “Report of TC 229-EPE (Electrokinetic processes in civil and environmental engineering)” by L. OTTOSEN.

**08:45/09:15 [RILEM TECHNICAL COMMITTEE LECTURE]** “Report of TC 234-DUC (Design procedures for the use of composites in strengthening of reinforced concrete structures)” by C. PELLEGRINO.

**09:15/09:45 [RILEM TECHNICAL COMMITTEE LECTURE]** “Report of TC 214-CCD (Concrete cracking and its relation to durability)” by J. WEISS.

**09:45/10:15 [RILEM TECHNICAL COMMITTEE LECTURE]** “Report of TC 219-ACS (Alkali Aggregate Reaction in concrete structures)” by P. NIXON.



2013 ROBERT L'HERMITE MEDALIST

John L. PROVIS

University of Sheffield, UNITED KINGDOM



## GEOPOLYMERS AND OTHER ALKALI ACTIVATED MATERIALS – WHY, HOW, AND WHAT?

### ABSTRACT

This lecture presents a review of alkali-activation technology, moving from the atomic scale and chemical reaction path modeling, towards macroscopic observables such as strength and durability of alkali-activated concretes. These properties and length scales are intrinsically interlinked, and so the chemistry of both low-calcium ('geopolymer') and high-calcium (blast furnace slag-derived) alkali-activated binders can be used as a starting point from which certain engineering properties may be discussed and explained. These types of materials differ in chemistry, binder properties, chemical structure and microstructure, and this leads to the specific material properties of each type of binder. The secondary binder products formed during alkali-activation (zeolites in low-Ca systems, mostly layered double hydroxides in alkali-activated slags) are of significant importance in determining the final properties of the materials, particularly in the context of durability. The production of highly durable concretes must remain the fundamental aim of research and development in the area of alkali-activation. However, to enable the term 'highly durable' to be defined in a satisfactory way, the underlying mechanisms of degradation – which are not always the same for alkali-activated binders as for Portland cement-based binders, and cannot always be tested in precisely the same ways – need to be further analyzed and understood. The key open questions in this area will thus be highlighted.

### **RILEM Robert L'Hermite Medalists**

*Each year, the Robert L'Hermite Medal may be awarded to an author of less than 40 years who has made exceptional contributions to the field of Materials and Structures. The last 10 medalists were*

2012 - Dimirios AGGELIS  
2011 - Laura DE LORENZIS  
2010 - Nele DE BELIE  
2009 - Pietro LURA  
2008 - Jason WEISS

2007 - Nicolas ROUSSEL  
2005 - Maria Rosa VALLUZZI  
2003 - Robert FLATT  
2002 - Franz ULM  
2001 - Geert DE SCHUTTER

# RILEM WEEK PROGRAM



## **RILEM GENERAL COUNCIL** (all RILEM members are welcome)

Wednesday

13:30-15:00

Salle des theses (Les Cordeliers)

## **STANDING COMMITTEE MEETINGS** (only for RILEM OFFICERS)

### **Sunday 1<sup>st</sup> September 2013 (at Eurosites)**

Technical Advisory committee – Part 1	9:00-12:00
Technical Advisory committee – Part 2	13:30-15:00
Management Advisory committee – Part 1	9:00-12:00
Management Advisory committee – Part 2	13:30-15:00
Development meeting	15:30-17:00

### **Monday 2<sup>nd</sup> September 2013 (Room V119 – Les Mines)**

Board of editors for Materials and Structures	10:30-12:30
Educational Activities Committee	14:00-17:00

### **Tuesday 3<sup>rd</sup> September 2013 (Room V119 – Les Mines)**

RILEM Bureau – Part 1	10:00-18:00
-----------------------	-------------

### **Wednesday 4<sup>th</sup> September 2013 (Room V119 – Les Mines)**

RILEM Bureau – Part 2	10:30-12:00
RILEM Bureau – Part 3	16:00-18:00

## TECHNICAL COMMITTEE MEETINGS



### Monday 2<sup>nd</sup> September 2013

TC MCT	08:00-13:00	Room V115 (Les Mines)
<i>Multi-component transport and chemical equilibrium in cement based materials</i>		
TC MMB	10:15-18:00	Room V111 (Les Mines)
<i>Methods of measuring moisture in building materials and structures</i>		
TC CSM	10:15-18:00	Room V116 (Les Mines)
<i>Composites for sustainable strengthening of masonry - part 1</i>		
TC NUM	13:30-18:00	Room V112-113-114 (Les Mines)
<i>Numerical modeling of cement-based materials</i>		
TC 236-BBM	13:30-18:00	Room V115 (Les Mines)
<i>Bio-aggregates based building materials</i>		

### Tuesday 3<sup>rd</sup> September 2013

TC 240-FDS	08:00-13:00	Room V111 (Les Mines)
<i>Durability design of fiber-reinforced strain-hardening cement-based composites</i>		
TC CSM	10:00-18:00	Room V116 (Les Mines)
<i>Composites for sustainable strengthening of masonry - part 2</i>		
TC TDC	13:30-18:00	Room V112-113-114 (Les Mines)
<i>Test methods to determine durability of concrete under combined environmental actions and mechanical load</i>		
TC 225-SAP	13:30-18:00	Room V111 (Les Mines)
<i>Application of super absorbent polymers in concrete construction</i>		
TC SRT	13:30-18:00	Room V115 (Les Mines)
<i>Sulfate resistance testing</i>		

### Wednesday 4<sup>th</sup> September 2013

TC 238-SCM	08:00-18:00	Room V115 (Les Mines)
<i>Hydration and microstructure of concrete with supplementary cementitious materials</i>		
TC 242-MDC	10:30-12:30	Room V111 (Les Mines)
<i>Multi-decade creep and shrinkage of concrete: material model and structural analysis</i>		
TC 228-MPS	16:00-18:00	Room V112-113-114 (Les Mines)
<i>Mechanical properties of self-compacting concrete</i>		

### Thursday 5<sup>th</sup> September 2013

TC 233-FPC	09:00-16:00	Room C323 (IFSTTAR)
<i>Form pressure generated by fresh concrete</i>		
TC 219-ACS	09:00-18:00	Room 16-20 (IFSTTAR)
<i>Alkali Aggregate Reactions in concrete structures – part 1</i>		

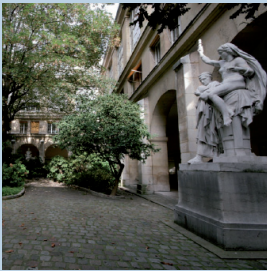
### Friday 6<sup>th</sup> September 2013

TC 219-ACS	09:00-18:00	Room 16-20 (IFSTTAR)
<i>Alkali Aggregate Reactions in concrete structures – part 2</i>		

## CONFERENCE AND MEETING VENUES

The conference venue and RILEM week meeting rooms are located in several places in Paris but also at the IFSTTAR head office outside Paris city. All conference sessions are located at "Les Cordeliers".

### ***Les Cordeliers, 21, rue de l'école de médecine, Paris VI***



*The 1<sup>st</sup> RILEM conference on rheology and processing of construction materials and the 7<sup>th</sup> RILEM international conference on self-compacting concrete are held in the conference center "Les Cordeliers". This historical building is located in the heart of the Latin Quarter, within walking distance from the Pantheon, the Botanical Gardens and Notre Dame Cathedral.*

The conference sessions are distributed between three theaters (Faraboeuf, Bilski-Pasquier and Salle des theses) and all coffee breaks and lunches will be served in the Marie Curie Room.



## Les Mines, 60, boulevard Saint-Michel, Paris VI



RILEM technical and standing committees meetings on Monday, Tuesday and Wednesday will be located at the prestigious “Ecole des Mines” about 8 minutes walk from the conference venue “Les Cordeliers”.

**From “Les Cordeliers” to “Les Mines”**  
Follow “Rue de l’École de Médecine” (200 m)  
Turn right on Bd. Saint Michel (650 m)



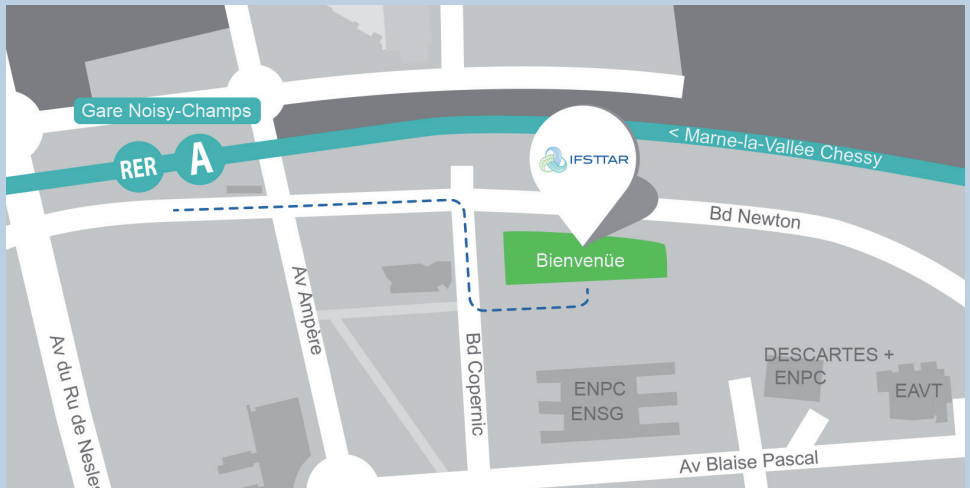
**IFSTTAR**, 14-20 Boulevard Newton, Cité Descartes, Champs sur Marne



RILEM technical committees meetings on Thursday and Friday will be located at the head office of IFSTTAR. It can easily be accessed by train (Line RER B). The station is Noisy-Champs.

The French Institute of Science and Technology for Transport, Development and Networks, born on January 1st 2011, from the merger of INRETS and LCPC, is a Public Institution of a Scientific and Technical Nature, under the joint supervision of the ministry of ecology, sustainable development and energy and the ministry of higher education and research.

New organization of reference in the international arena, IFSTTAR conducts applied research and expert appraisals in the fields of transport, infrastructure, natural hazards and urban issues with the aim of improving the living conditions of our fellow citizens and, more widely, promoting the sustainable development of our societies.





PERSONAL NOTES

PERSONAL NOTES

PERSONAL NOTES

PERSONAL NOTES