






ICCRRR 2018 Programme




SUNDAY 18th November 2018, 17:00 – 19:00: Registration and Welcome Function, GSB (V&A Waterfront)			
Session	MONDAY 19th NOVEMBER 2018		
1 (8:30 -10:30)	Conference Opening & KEYNOTE LECTURES (Venue A)		
Tea Break (10:30-11:00)			
2 (11:00-12:45)	Condition assessment and NDT (Venue A)	Concrete deteriorating mechanisms and prediction of durability (Venue B)	Repair materials and systems (Venue C)
Lunch (12:45-13:45)			
3 (13:45 - 14:45)	KEYNOTE LECTURES (Venue A)		
4 (14:50 – 16:00)	Condition assessment and NDT (Venue A)	Bio-deterioration of concrete (Venue B)	Repair materials and systems (Venue C)
Tea break (16:00-16:30)			
5 (16:30-18:00)	Condition assessment and NDT (Venue A)	Concrete deteriorating & prediction of durability (Venue B)	Structural repair materials and systems (Venue C)
Session	TUESDAY 20th NOVEMBER 2018		
6 (8:30 - 10:00)	KEYNOTE LECTURES (Venue A)		
Tea break (10:00 – 10:30)			
7 (10:30 - 12:15)	Reinforcement corrosion: mechanisms, prediction and modelling (Venue A)	Concrete deteriorating mechanisms and prediction of durability (Venue B)	Structural repair materials and systems (Venue C)
Lunch (12:15 -13:15)			
8 (13:15 - 14:45)	Reinforcement corrosion: mechanisms, prediction and modelling (Venue A)	Concrete deteriorating mechanisms and prediction of durability (Venue B)	Structural repair materials and systems (Venue C)
Tea break (14:45 – 15:15)			
9 (15:15 - 16:45)	Case studies: repair and strengthening (Venue A)	Bonded concrete overlays (Venue B)	Concrete materials technology (Venue C)
Gala dinner 18:30 for 19:00			
Session	WEDNESDAY 21st NOVEMBER 2018		
10 (8:30 – 10:00)	KEYNOTE LECTURES (Venue A)		
Tea break (10:00 – 10:30)			
11 (10:30 -12:15)	Case studies: repair and strengthening (Venue A)	Repair materials and systems (Venue B)	Concrete materials technology (Venue C)
Lunch (12:15 -13:15)			
12 (13:15 - 14:45)	Reinforcement corrosion prevention and cathodic protection (Venue A)	Alkali Silica Reaction (Venue B)	Concrete materials technology (Venue C)
Tea break (14:45 – 15:15)			
13 (15:15 - 16:45)	Rebar corrosion prevention and cathodic protection (Venue A)	Alkali Silica Reaction (Venue B)	
Closing 16:45 - 17:30			


Monday 19th November 2018

Session 1 (8:30 -10:30) (Venue A)		
Conference Opening <i>Hans Beushausen, Mark Alexander, Pilate Moyo and Frank Dehn</i>		
KEYNOTE & INVITED LECTURES (Chair: Mark Alexander)		sponsor 
Forensic engineering - fib MC 2020 and existing structures <i>Stuart Matthews and Giuseppe Mancini</i>		
What bridge heritage are we leaving? <i>Edwin Kruger</i>		
Sustainable, durable concrete – are specifications always fit for purpose – a case study <i>Michael G. Grantham</i>		
Tea Break (10:30 – 11:00)		sponsored by 
Session 2 (11:00 – 12:45)		
Condition assessment and NDT (Chair: Christian Sodeikat)	Concrete deteriorating mechanisms and prediction of durability B (Chair: Alexandra Bertron)	Repair materials and systems (Chair: Benoit Bissonnette)
<p>Reliability assessment of existing bridge constructions based on results of non-destructive testing <i>Stefan Küttenbaum, Alexander Taffe, Thomas Braml and Stefan Maack</i></p> <p>Demolition of Old Oak Bridge B4113: condition of a 54-year old prestressed concrete bridge <i>Wandie Kramer, William Martin and Harry Viljoen</i></p> <p>New Ashton Arch - functional assessment of direct and indirect construction costs and evaluation of service life with respect to flooding risk <i>Philip Ronné, Abe Newmark, Gesina du Toit and Heinrich van Wijk</i></p> <p>Suggestions for improved reinforced concrete half-joint bridge inspection in England <i>Pieter Desnerck, Pierfrancesco Valerio, Janet M Lees and Neil Loudon</i></p> <p>Investigations on the detectability of water intruding into bridge deck sealings by electrical resistivity <i>Carla Driessen and Michael Raupach</i></p> <p>Validation of artificial defects for Non-destructive testing measurements on a reference structure <i>Maack Stefan, Villalobos Salvador and Scott David</i></p>	<p>Optimizing the Acid Resistance of Concrete with Granulated Blast-Furnace Slag <i>Rolf Breitenbücher, Jan Bäcker, Sebastian Kunz, Andreas Ehrenberg, and Christian Gerten</i></p> <p>A new test for combined Ca-leaching and sulphate resistance of cementitious materials <i>Florian R. Steindl, Andre Baldermann, Isabel Galan, Marlene Sakoparnig, Martin Dietzel and Florian Mittermayr</i></p> <p>Sulfate Resistance of Rice Husk Ash Concrete <i>John Kamau, Ash Ahmed and Killian Ngong</i></p> <p>Assessing the influence of self-healing capacity of lime-based mortars on brick-mortar interface strength in masonry units <i>Cristina De Nardi, Antonella Cecchi and Liberato Ferrara</i></p> <p>Performance of concrete with and without crystalline admixtures under repeated cracking/healing cycles <i>Liberato Ferrara, Estefania Cuenca, Antonio Tejedor and Enricomaria Gastaldo Brac</i></p> <p>Development of an improved cracking method to reduce the variability in testing the healing efficiency of self-healing mortar containing encapsulated polymers <i>Tim Van Mullem, Kim Van Tittelboom, Elke Gruyaert, Robby Caspeepe and Nele De Belie</i></p>	<p>Design and development of concretes for special rehabilitation tasks <i>Alexander Flohr and Andrea Osburg</i></p> <p>Intrinsic modification of repair mortars made with EVA and CaO, impacts at the earlier age <i>Inès L. Tchetgnia Ngassam, Wolfram Schmidt, Hans Beushausen and Hans-Carsten Kühne</i></p> <p>Using GLP as Partial Replacement in Cement Mortars <i>Ahmed El-Tair, Passant Youssef and Amr El-Nemr</i></p> <p>Workability and mechanical properties of ultrafine cement based grout for structural rehabilitation: A parametric study on the partial replacement with SCMs <i>Md Shamsuddoha, Götz Hüsken, Wolfram Schmidt, Hans-Carsten Kühne and Matthias Baeßler</i></p> <p>Non-destructive testing of concrete treated with penetrating surface sealant using a Karsten-tube <i>Sunday O. Nwaubani</i></p>
Lunch (12:45 -13:45)		sponsored by 
Session 3 (13:45 -14:45) (Venue A)		
KEYNOTE LECTURES (Chair: Joost Walraven)		sponsor 
Modelling of chloride ingress in concrete based on benchmarking field results <i>E.A.B. Koenders</i>		
Condition assessment: from the good choice of methods to reliable results that meet the customer demand <i>Alexander Taffe</i>		




Session 4 (14:50 – 16:00)		
Condition assessment and NDT (Chair: Stuart Matthews)	Bio-deterioration of concrete (Chair: Liberato Ferrera)	Repair materials and systems (Chair: Ines Ngassam)
<p>Detection of near-surface reinforcement in concrete components with ultrasound <i>Sarah Vonk and Alexander Taffe</i></p> <p>Corrosion on prestressing wires due to segregation of the injection mortar – Detection of injection defects with Ultrasonic-Echo Technique <i>Christian Sodeikat, Klaus Mayer and Philipp Obermeier</i></p> <p>Alternative methodology for linear polarization resistance assessment of reinforced concrete structure <i>Gabriel Samson, Fabrice Deby, Jean-Luc Garciaz and Jean-Louis Perrin</i></p> <p>A practical methodology to assess corrosion in concrete sewer pipes <i>Shima Taheri, Martin Ams, Heriberto Bustamante, Steve Barclay, Louisa Vorreiter, Michael Withford and Simon Martin Clark</i></p> <p>Application of laser induced breakdown spectroscopy for the chemical investigation of concrete infrastructure <i>Gerd Wilsch</i></p>	<p>Biodeterioration mechanisms and kinetics of SCM and aluminat based cements and AAM in the liquid phase of an anaerobic digestion <i>Marie Giroudon, Matthieu Peyre Lavigne, Cédric Patapy and Alexandra Bertron (Invited Speaker)</i></p> <p>Evaluation of the resistance of CAC and BFSC mortars to biodegradation: laboratory test approach <i>Amr Aboulela, Matthieu Peyre-Lavigne, Cédric Patapy and Alexandra Bertron</i></p> <p>Microbial induced acid corrosion from a field perspective - Advances in process understanding and construction material development <i>Cyrill Grengg, Florian Mittermayr, Neven Ukrainczyk, Eddie Koenders, Günther Koraimann, Sabine Kienesberger and Martin Dietzel</i></p> <p>Optical pH imaging of concrete exposed to chemically corrosive environments <i>Cyrill Grengg, Bernhard Mueller, Florian Mittermayr, Torsten Mayr, Sergey Borisov and Martin Dietzel</i></p>	<p>UHPFRC for concrete repair <i>Alexandrine Maltais, Nikola Petrov, Michel Thibault, Benoit Bissonnette</i></p> <p>Rehabilitation of marine concrete structure with under-water hydro demolition and sprayed concrete <i>Kyong-Ku YUN, Kyeo-Re KIM, Seung-Yeon HAN, Yong-Gon KIM and Soo-Ahn KWONI</i></p> <p>Characterization tools for shrinkage-compensating repair materials <i>Benoît Bissonnette, Samy-Joseph Essalik, Charles Lamothe, Marc Jolin, Luc Courard, Richard Gagné and Richard Morin</i></p> <p>Use of polypropylene fiber and silica fume modified concrete as a repair material <i>Jing Liu, Xinhua Wen, Wen Liu, Xinguo Zheng and Chao Guo</i></p>
Tea break (16:00 – 16:30)		sponsored by 
Session 5 (16:30 – 18:00)		
Condition assessment and NDT (Chair: Alexander Taffe)	Concrete deteriorating mechanisms and prediction of durability (Chair: Mike Otieno)	Structural repair materials and systems (Chair: Mark Alexander)
<p>Condition assessment of reinforced concrete beams – Comparing digital image analysis with optic fibre Bragg gratings <i>Elsabe Kearsley and SW Jacobsz</i></p> <p>Health monitoring and repair of a concrete shell roof structure <i>Pazhanivel K, Arunachalam S and Meenakshisundaram S</i></p> <p>The MFL technique - Basic application for PT cable break detection in concrete structures <i>Andrei Walther, Martin Wilcke, Klaus Szielasko and Sargon Youssef</i></p> <p>Assessment of the in situ compressive and tensile strength of existing massive hydraulic structures <i>Frank Spörel</i></p> <p>Client/consultant partnership in 70-year old concrete evaluation <i>Avanti C. Shroff</i></p>	<p>Concrete quality on-site vs separately manufactured specimens <i>Frank Jacobs</i></p> <p>Effects of concrete quality and natural Johannesburg environment on concrete carbonation rate <i>Jacob Olumuyiwa Ikotun</i></p> <p>Changes of microstructure and diffusivity in blended cement pastes exposed to natural carbonation <i>Wioletta Soja, Hamed Maraghechi, Fabien Georget and Karen Scrivener</i></p> <p>Interest of using a model combining carbonation/chloride ingress and depassivation to better anticipate the rehabilitation of concrete structures <i>Lucie Schmitt, Jonathan Mai-Nhu, Frédéric Duprat, Thomas De Larrard and Patrick Rougeau</i></p>	<p>Retrofit and Renovation of Concrete Bridges with Fibre Reinforced Polymer (FRP): The Third Alternative <i>Gerrit Visser, Kees Van Ijselmuijden, Ernst Klamer and Gideon Van Zijl</i></p> <p>Axial stress-strain behaviour of pre-damaged square concrete column repaired with FRP jackets <i>Pengda Li, Yingwu Zhou, Ningxu Han and Feng Xing</i></p> <p>Durability of concrete with CFRP wrapping <i>Qian-Qian Yu, Xiang Li and Xiang-Lin Gu</i></p>


Tuesday 20th November 2018

Session 6 (8:30 – 10:00) (Venue A)		
KEYNOTE LECTURES (Chair: Elsabe Kearsley)		sponsor 
<p>Multiple performance goals in bridge management systems – overview of COST TU 1406 results <i>Irina Stipanovic</i></p> <p>FRP Strengthening of structures – bridging gaps in research and industry - 25-years' experience creating innovation <i>Björn Täljsten</i></p> <p>Fibre Reinforced Concrete for repairing and strengthening RC structures: some recent advancements <i>Giovanni A. Plizzari</i></p>		
Tea break (10:00 – 10:30)		sponsored by 
Session 7 (10:30 -12:15)		
Reinforcement corrosion: mechanisms, prediction and modelling (Chair: Rob Polder)	Concrete deteriorating mechanisms and prediction of durability (Chair: Joost Gulikers)	Structural repair materials and systems (Chair: Christoph Dauberschmidt)
<p>Towards understanding corrosion initiation in concrete – Influence of local electrochemical properties of reinforcing steel <i>Lucas Michel and Ueli Angst</i></p> <p>Towards understanding corrosion initiation in concrete – influence of local concrete properties in the steel-concrete interfacial zone <i>Carolina Boschmann Käthler, Ueli Angst and Bernhard Elsener</i></p> <p>A new approach to determine the chloride threshold initiating corrosion: preliminary results <i>Chantal Chalhouh, Raoul François and Myriam Carcassés</i></p> <p>Corrosion of steel in concrete due to one and two dimensional chloride ingress <i>Ze Gyang Zakka and Mike Otieno</i></p> <p>Macrocell corrosion between crossed steel rebars embedded in concrete under chloride environments <i>Xianglin Gu, Zheng Dong and Zhihao Jin</i></p> <p>Corrosion behaviour of rebars 1.4003 in cracks of RC structures containing chlorides <i>Christoph Dauberschmidt and Andreas Fraundorfer</i></p>	<p>Perpendicular-to-crack chloride ingress in cracked and autonomously healed concrete <i>Bjorn Van Belleghem, Philip Van den Heede, Kim Van Tittelboom and Nele De Belie</i></p> <p>Deterioration model of RC beams under marine atmospheric environment <i>Hongyuan Guo, Guobing Li and Xianglin Gu</i></p> <p>Assessment of the effect of nanosilica on the mechanical performance and durability of cementitious materials <i>Gerlinde Lefever, Dimitrios G. Aggelis, Nele De Belie, Didier Snoeck and Danny Van Hemelrijck</i></p> <p>Investigation on the transport properties of chlorides in concrete (I) Identification of ITZ <i>TIAN Ye, JIN Xianyu and JIN Nanguo</i></p> <p>Investigation on the transport properties of chlorides in concrete (II) Numerical simulation <i>TIAN Ye, JIN Xianyu and JIN Nanguo</i></p>	<p>A study on the numerical modelling of UHPFRC-strengthened members <i>Renaud Franssen, Serhan Guner, Luc Courar and Boyan Mihaylov</i></p> <p>Behavior of RC beams strengthened in shear with ultra-high performance fiber reinforced concrete (UHPFRC) <i>Mohammed A. Sakr, Ayman A. Sleemah, Tarek M. Khalifa and Walid N. Mansour</i></p> <p>A study on the bond behavior of different FRCM systems <i>Adel Younis and Usama Ebead</i></p> <p>Characterization and application of FRCM as a strengthening material for shear-critical RC beams <i>Adel Younis and Usama Ebead</i></p> <p>Use of Strain-Hardening Cement-Based Composites (SHCC) for Retrofitting <i>Steffen Müller and Viktor Mechtcherine</i></p>
Lunch (12:15 -13:15)		sponsored by 

Session 8 (13:15 – 14:45)		
Reinforcement corrosion: mechanisms, prediction and modelling (Chair: Wolfgang Schwarz)	Concrete deteriorating mechanisms and prediction of durability (Chair: Frank Jacobs)	Structural repair materials and systems (Chair: Gideon van Zijl)
<p>Monitoring DIAMOND device for corrosion state evaluation of reinforced concrete structures <i>Gabriel Samson, Fabrice Deby, Jean-Luc Garciaz and Jean-Louis Perrin</i></p> <p>Probability Distribution of Cross-sectional radius of Corroded Steel Bars in Concrete and its application <i>Li Chongkai, ZHANG Weiping and GU Xianglin</i></p> <p>Correlation between surface crack width and steel corrosion in reinforced concrete <i>Michele Win Tai Mak, Pieter Desnerck and Janet M. Lees</i></p> <p>Effect of the degree of corrosion on bond performance of Cement Polymer Composite (CPC) Coated steel rebars <i>Deepak K. Kamde and Radhakrishna G. Pillai</i></p> <p>Role of crack width on the service life of concrete structures <i>Joost Walraven</i></p>	<p>Outcomes of the round robin tests of RILEM TC 247-DTA on the durability of alkali-activated concrete <i>John L. Provis and Frank Winnefeld (Invited Speakers 30 mins)</i></p> <p>Leaching, carbonation and chloride ingress in reinforced alkali-activated fly ash mortars <i>Gregor J. G. Gluth, Petr Hlaváček, Steffi Reinemann, Gino Ebell and Jürgen Mietz</i></p> <p>Pore structure of mortars containing limestone powder and natural pozzolan assessed through mercury intrusion porosimetry and dynamic vapour sorption <i>Natalia Alderete, Yury Villagrán, Arn Mignon, Didier Snoeck and Nele De Belie</i></p> <p>Sasol ash as partial replacement of Portland cement – effect on selected durability properties of concrete <i>Dikeledi Maboea and Mike Otieno</i></p>	<p>Seismic Retrofitting of a Bridge Pier with Ultra High-Performance Fibre Reinforced Concrete <i>Reggia Adriano, Alessandro Morbi and Giovanni A. Plizzari</i></p> <p>Basalt reinforced concrete structures for retrofitting concrete surfaces <i>Benjamin Wolf, Andrea Kustermann, Christian Schuler and Christoph Dauberschmidt and Ömer Bucak</i></p> <p>Acoustic monitoring of a prestressed concrete beam reinforced by adhesively bonded composite <i>Sylvain Chataigner, Laurent Gaillet, Yannick Falaise, Jean-François David, Richard Michel, Christophe Aubagnac, Adrien Houel, Didier Germain and Jean-Philippe Maherault</i></p> <p>Characterization of shear strength of FRP anchors <i>Philipp Mahrenholtz, Jae-Yeol Cho, Ja-Min Park and Rolf Eligehausen</i></p>
Tea break (14:45 – 15:15)		sponsored by 
Session 9 (15:15 – 16:45)		
Case studies: repair and strengthening (Chair: Matteo Angelucci)	Bonded concrete overlays (Chair: Richard Morin)	Concrete materials technology (Chair: Giovanni Plizzari)
<p>Case Study of Concrete Repairs on Jetty in Port Nolloth, Northern Cape <i>Malan Schrecker Duan Viljoen and Pierre van der Spuy</i></p> <p>The widening of structures over the Orange river on national route 12 section 9 near Hopetown, the Northern Cape <i>Tiago Massingue and Chris Lourens</i></p> <p>The Rehabilitation of Structures on the National Route 10 Section 12 between Upington Km 0.0 and Nakop Km134.17 <i>Tiago Massingue and Bennie Zietsman</i></p> <p>Strengthening of a railway arch bridge from 1854 <i>Ole Viggo Andersen</i></p> <p>Sanika Waterproofing Specialists and Kryton rejuvenate a mine ventilation shaft <i>Daniela Warne</i></p>	<p>Design and Construction of Ultra-Thin Continuously Reinforced Concrete (UTCRC) on N1 near Hugonote Tunnel <i>Steph Bredenmann, Johan van Heerden, Pieter Strauss and Phillip Joubert</i></p> <p>Development of safe construction temperature ranges to avoid blow-ups in Ultra-Thin Concrete Pavements <i>Johannes Mentz and Anton Hartman</i></p> <p>Guidelines for concrete surface preparation: 10 years research and experience <i>Luc Courard, Benoît Bissonnette, Andrzej Garbacz, Alex M. Vaysburd and Kurt F. von Fay</i></p> <p>Bond behaviour of thin concrete overlays for maintenance of concrete pavements <i>Rolf Breitenbücher, Christoph Schulte-Schrepping and Sebastian Kunz</i></p> <p>Performance of Concrete Overlays in Iowa <i>Peter Taylor, Jerod Gross, Dan King, Yu-An Chen and Halil Ceylan</i></p>	<p>On the effect of the physical structure of cement on shrinkage of cementitious materials <i>Hossein Karimi, Qingliang Yu and H.J.H Brouwers</i></p> <p>Partial replacement of conventional fine aggregate with crumb tyre rubber in structural concrete – effect of particle size on compressive strength and time dependent <i>Kudzai Mushunje, Mike Otieno and Yunus Ballim</i></p> <p>A review of Waste Tyre Rubber as an Alternative Concrete Constituent Material <i>Kudzai Mushunje, Mike Otieno and Yunus Ballim</i></p> <p>Influence of superabsorbent polymer on the splitting tensile strength and fracture energy of high-performance concrete <i>Babatunde James Olawuyi and William Peter Boshoff</i></p>
 Gala dinner, 19:00; GOLD Restaurant, Green Point		

Wednesday 21st November 2018

Session 10 (09:00 – 10:00) (Venue A)		
KEYNOTE LECTURES (Chair: Frank Dehn)		sponsored by 
<p>Modern cement technology for improved durability of concrete structures <i>Karen Scrivener</i></p> <p>Cathodic protection of steel in concrete – experience and overview of 30 years application <i>Rob Polder and Willy Peelen</i></p> <p>Polymer-Concrete Composites for the concrete repairing <i>Lech Czarnecki</i></p>		
Tea break (10:00 – 10:30)		sponsored by 
Session 11 (10:30 -12:15)		
Case studies: repair and strengthening (Chair: Frank Dehn)	Repair materials and systems (Chair: Peter Taylor)	Concrete materials technology (Chair: Janina Kanjee)
<p>Rehabilitation of the Komati River Bridge B1604 <i>Johnnie Strydom, Etienne du Plessis and Lourens Pieters</i></p> <p>A case study of the retrofitting of the Great Fish River Bridge <i>Nerave Moodley, Graham Moore and David Wylie</i></p> <p>Olifants River Bridge Widening <i>Andrew Rowan and Les Thomson</i></p> <p>Strengthening, rehabilitation and widening of the existing arch bridge on national route 7 over the Olifants River, South Africa <i>Pierre van der Spuy and Hennie Niehaus</i></p> <p>Structural Repair to Conserve Langkawi's Main Tourist Attraction: Practical Approach <i>Maziah Mohammad and Ros Asmah Zahari</i></p> <p>Design Considerations and Innovative Approach for Restoration of Historic Landmarks in Old Montreal <i>Richard Morin, Ghfran Al Chami, Richard Gagné and Benoit Bissonnette</i></p>	<p>The effect of hydrophobic treatment on concrete durability characteristics <i>Haris Sohawon and Hans Beushausen</i></p> <p>The influence of concrete substrate moisture condition on the tensile pull-off strength of protective coating <i>Sean Kay and Hans Beushausen</i></p> <p>Investigation in Remediation of Wind Turbine Generator (WTG) Foundations with Epoxy Resin <i>Kay A. Bode</i></p> <p>Durability of flax / bio-based epoxy composites intended for structural strengthening <i>Karim Benzarti, Robert Chlela, Wendlamita Zombré, Marc Quiertant and Laurence Curtil</i></p> <p>Polymer Injection Rehabilitation Technology for Lifting Differential Settlement of Turnout Ballastless Track <i>Jing Liu, Zhiyuan Zhang, Xinhua Wen, Xinguo Zheng and Jiahai Zhang</i></p> <p>Underwater Abrasion Resistance of Cementitious Acrylic Coating on Repaired Surface of Concrete Dam and Stilling Basin <i>Jakob Šušteršič, Andrej Kryžanowski, Aleš Brodnik and Andrej Zajc</i></p>	<p>Steel fibre-reinforced concrete: multi-scale characterisation towards numerical modelling <i>Stephan Zeranka and Gideon van Zijl</i></p> <p>A new testing method for textile reinforced concrete under impact load <i>Marcus Hering and Manfred Curbach</i></p> <p>Properties of Western Cape Concretes with Metakaolin <i>Alice T. Bakera and Mark G. Alexander</i></p> <p>Study on Characteristics of Tensile Strength of Concrete Considering Temperature Dependence in Mass Concrete Structures <i>Hiroki Izumi, Juniti Arai and Toshiaki Mizobuchi</i></p> <p>Design and characterization of self-sensing steel fiber reinforced concrete <i>Teuku Ferdiansyah, Anacleto Turatsinze and Jean-Paul Balayssac</i></p>
Lunch (12:15 -13:15)		sponsored by 

Session 12 (13:15 – 14:45)		
Reinforcement corrosion prevention and cathodic protection (Chair: Rob Polder)	Alkali Silica Reaction (Chair: Ian Robertson)	Concrete materials technology (Chair: Philemon Arito)
<p>Towards arresting reinforced concrete corrosion - a review <i>Christian Christodoulou, Chris Goodier and Gareth Glass</i></p> <p>Service life extension of state highway 16 bridges – New Zealand’s first hybrid corrosion protection application <i>Christian Christodoulou, Ryan Cobbs, Paul Corbett and Mike Elliot</i></p> <p>Long-Term Performance of Hybrid Anodes for Cathodic Protection of Reinforced Concrete <i>Wayne Dodds, Christian Christodoulou and Chris Ian Goodier</i></p> <p>Galvanic Cathodic Protection of Corroded Reinforced Concrete Structures <i>David Whitmore</i></p> <p>Impregnation Technique Provides Corrosion Protection to Grouted Post-Tensioning Tendons <i>David Whitmore and Ivan Lasa</i></p> <p>Tensile strength of carbon rovings impregnated with different materials under anodic polarization <i>Amir Asgharzadeh and Michael Raupach</i></p>	<p>Three decades of international RILEM activities to combat deleterious Alkali-Silica Reactions (ASR) in concrete <i>Børge Johannes Wigum and Jan Lindgård (Invited Speakers 30 mins)</i></p> <p>Outdoor exposure site testing for preventing Alkali Aggregate Reactivity in concrete – a review. <i>Benoit Fournier, Jan Lindgård, Børge J. Wigum and Ingmar Borchers</i></p> <p>Living with AAR: An Engineer’s Perspective <i>Jonathan G M Wood</i></p> <p>Determining alkali leaching during accelerated ASR performance testing and in field exposed cubes using cold water extraction (CWE) and μXRF <i>Jan Lindgård, Tone Østnor, Benoit Fournier, Øyvind Lindgård, Tobias Danner, Gilles Plusquellec and Klaartje De Weerd</i></p>	<p>Measured temperature effects during the construction of a prestressed precast concrete bridge beam <i>Frank Küsel, Elsabe Kearsley, Liam J. Butler, Sarah A. Skorpen and M.Z.E.B. Elshafie</i></p> <p>Concrete hydration temperatures for the design of crack-width reinforcement in concrete water-retaining structures – design values versus in-situ values. <i>Matteo Angelucci</i></p> <p>Pullout simulation of post installed chemically bonded anchors in UHPFRC <i>Fabien Delhomme and Michael Brun</i></p>
Tea break (14:45 – 15:15)		sponsored by 
Session 13 (15:15 – 16:45)		
Reinforcement corrosion prevention and cathodic protection (Chair: Michael Raupach)	Alkali Silica Reaction (Chair: Børge Johannes Wigum)	
<p>A 5 year track record on a galvanic CP system applied on a light weight concrete bridge with prestressed steel – <i>A.J. van den Hondel, Joost Gulikers, Roberto Giorgini, Anthony van den Hondel</i></p> <p>Maintenance and repair of steel reinforced concrete structures by galvanic corrosion protection – field experiences over 10 years <i>Wolfgang Schwarz, Alexander Pichlhöfer, Anthony van den Hondel, Hernani Esteves</i></p> <p>Cathodic protection of concrete with conductive coating anodes: 25 years of experience with projects and monitoring results <i>Anthony van den Hondel and Hans van den Hondel</i></p> <p>Performance assessment of sacrificial anodes for cathodic protection of reinforced concrete structures <i>Deepak K. Kamde and Radhakrishna G. Pillai</i></p> <p>Corrosion protection of embedded steel bars in concrete <i>L., Pistolesi and C., Zaffaroni</i></p>	<p>Field Evaluation of Concrete using Hawaiian Aggregates for Alkali Silica Reaction <i>Ian Robertson and Lin Shen</i></p> <p>Modelling of Alkali Silica Reaction in concrete structures for rehabilitation intervention <i>Mohammad S. Pourbehi, G.P.A.G. van Zijl and J.A.v.B. Strasheim</i></p> <p>Effects of alkali-silica reaction on a hydropower structure after 50 years of ongoing deterioration <i>Rene Brueckner, Noah Ndugga and Tony C. Meri</i></p> <p>Effectiveness of Silane to Mitigate Alkali-Silica Reaction in a Historical Bridge <i>Anton Schindler, Darren Johnson, Robert Warnock and Robert Barnes</i></p>	
Closing 16:45 - 17:30		

