

Syner '23 Crete

14, 15 & 16 June 2023 • Milos Island, Greece

The International RILEM Conference on Synergising
Expertise Towards Sustainability and Robustness of
Cement-based Materials and Concrete Structures

PROGRAMME AND PRACTICAL INFORMATION



Syner '23 Crete

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WELCOME TO SYNERCRETE'23

Following the legacy of COST Action TU1404, which initiated the SynerCrete conference series in 2018, the 2023 Edition focuses on communicating, discussing and encouraging progress in research, development and application of cement-based materials and structural **conCRETE**, which has been attained through **SYNERgy** of expertise from distinct fields of knowledge.

SynerCrete'23 has wide international institutional support from RILEM, fib, JCI and ACI. The conference consists of 2 keynote speakers and 226 regular papers presented over 3 days. Organised as a RILEM event, in addition to general conference sessions, SynerCrete'23 encompasses working meetings and special sessions of 8 RILEM TCs.

Intense days are ahead of us, providing various opportunities for scientific discussion and networking. Many people have contributed to the organisation of this event, and will be available to support you during SynerCrete'23.

A warm welcome to all of you!



Agnieszka
Jędrzejewska
Chair



Fragkoulis Kanavaris
Chair



Miguel Azenha
*Co-chair of Scientific
Committee*



Farid Benboudjema
*Co-chair of Scientific
Committee*



Dirk Schlicke
*Co-chair of Scientific
Committee*

KEYNOTE SPEAKERS

Maria STEFANIDOU

Title of presentation: *Substituting natural pozzolan with artificial derived from industrial perlite waste for mortar production*

DAY 2 (Thursday), 9:30 - 10:15

Professor Maria Stefanidou is the director of the Laboratory of Building Materials, Civil Engineering Department AUTH (Greece). She has obtained a degree in Geology, Master in Nanoscience and Nanotechnologies in Physics and a PhD in Civil Engineering from AUTH. Her main research fields are: a) analysis of the physico-mechanical and microstructure properties of historic materials (mortars, stones, bricks); b) study of raw materials for increasing their performance on innovation in science using principles of sustainability and c) introduction of additives in building materials (nano-materials, bio-fibres, by-products) and assessment of their mechanical, physical, chemical, microstructural and thermal properties. She is a research group member in 110 national and European projects and research coordinator in 25 projects. She has organised conferences, training schools and seminars to disseminate new technologies in building materials and serves as an associate editor in Journal of Building Engineering (Elsevier). She is a member of RILEM TCs and is RILEM's Regional Convener in Europe.



Jean-Michel TORRENTI

Title of presentation: *Fast carbonation of recycled concrete aggregates - the results of the FastCarb project*

DAY 3 (Wednesday), 9:00 - 9:45

Professor Jean Michel Torrenti is a researcher in the department of Materials and Structures at the Université Gustave Eiffel (France). He is also a professor at Ecole nationale des ponts et chaussées. His research concerns mechanics of concrete and its coupling with durability and sustainability aspects: behavior of concrete at early age, creep, leaching, and is applied to model the behavior of structures such as bridges, nuclear power plants, and nuclear waste storage, recycling, low carbon concrete. A director of the French project FastCarb about accelerated carbonation of recycled concrete aggregates. He is a co-author of several papers and books concerning concrete and concrete structures. He is the convener of COM4 (materials) and a member of the presidium of the *fib*.



DAY 1 • WEDNESDAY, JUNE 14, 2023

		ROOM P	ROOM A2	ROOM B1	ROOM I	ROOM B3					
8:00											
10:00	HALL - REGISTRATION	RILEM TC 287-CCS meeting: Cracking in RC structures	RILEM TC 299-TES meeting: Thermal energy storage in cementitious composites	RILEM TC 298-EBD meeting: Durability of pastes against ions	RILEM TC 283-CAM meeting: Chloride transport in alkali-activated materials	RILEM TC MCP meeting: Accelerated mineral carbonation for material production					
13:00		LUNCH									
		ROOM A1	ROOM A2	ROOM B1	ROOM I	ROOM B3					
14:00		RILEM TC MCP special session: Accelerated mineral carbonation for material production	RILEM TC 299-TES special session: Thermal energy storage in cementitious composites	RILEM TC 298-EBD special session: Durability of pastes against ions	RILEM TC 275-HDB special session: Bio-aggregate based building materials	RILEM TC 281-CCC meeting: Carbonation of concrete with supplementary cementitious materials					
15:00				RILEM TC 283-CAM special session: Chloride transport in AAM							
16:00		COFFEE BREAK									
		ROOM A1	ROOM A2	ROOM B1	ROOM B2						
16:30		RILEM TC 302-CNC special session: Carbon-based materials for cementitious matrices	RILEM TC 299-TES special session: Thermal energy storage in cementitious composites	Rilem TC 298-EBD special session: Durability of pastes against ions	RILEM TC 275-HDB special session: Bio-aggregate based building materials						
18:00											
19:00		Free Time									
21:00		Welcome cocktail and exhibition (conference venue)									

DAY 2 • THURSDAY JUNE 15, 2023

8:00	HALL - REGISTRATION		ROOM A1					
		9:00	Opening Ceremony					
		9:30	Keynote Speaker 1: <i>Maria Stefanidou</i> (Chair: <i>Fragkoulis Kanavaris</i>)					
		10:15						
			ROOM A1	ROOM A2	ROOM B1	ROOM B2	ROOM B3	
		10:30	Supplementary cementitious materials	Durability and robustness of concrete materials and structures	Modelling of cement-based materials (macroscopic/multiscale approach)			
		11:15	COFFEE BREAK AND GROUP PHOTO					
			ROOM A1	ROOM A2	ROOM B1	ROOM B2	ROOM B3	
		11:45	Supplementary cementitious materials	Durability and robustness of concrete materials and structures	Modelling of cement-based materials (macroscopic approach)	Early-age behaviour of non-Portland cement materials	Integral BIM-based planning	
		13:00	LUNCH					
			ROOM A1	ROOM A2	ROOM B1	ROOM B2	ROOM B3	
		14:30	Supplementary cementitious materials	Durability and robustness of concrete materials and structures	Modelling of cement-based materials (atomistic and dynamic molecular simulations)	Valorisation and recycling of non-binder components of concrete	Design and performance	
		16:15	COFFEE BREAK					
			ROOM A1	ROOM A2	ROOM B1	ROOM B2	ROOM B3	
		16:30	Supplementary cementitious materials	Durability and robustness of concrete materials and structures	Modelling of cement-based materials	Valorisation and recycling of non-binder components of concrete	Design and performance	
18:00			18:00	Conference Dinner				
			23:00	Please be at the Milos Conference Center entrance at 18h15, and board the conference bus				

DAY 3 • FRIDAY JUNE 16, 2023

8:00	HALL - REGISTRATION		ROOM A1			
		9:00	Keynote Speaker 2: <i>Jean-Michel Torrenti</i> (Chair: <i>Farid Benboudjema</i>)			
		9:45				
			ROOM A1	ROOM A2	ROOM B1	ROOM B2
		10:00	Non-standardised testing techniques	RILEM TC 281-CCC Special Session: Carbonation of concrete with supplementary cementitious materials	Behaviour of non-Portland cement materials	Durability and delayed strains in non-Portland cement materials
						Structural Health Monitoring and maintenance management
		11:15	COFFEE BREAK			
			ROOM A1	ROOM A2	ROOM B1	ROOM B2
		11:45	RILEM TC 287-CCS Special Session	RILEM TC 281-CCC Special Session: Carbonation of concrete with supplementary cementitious materials	Durability and delayed strains in non-Portland cement materials	Non-standardised testing techniques
						Structural Health Monitoring and maintenance management
		13:00	LUNCH			
			ROOM A1	ROOM A2	ROOM B1	ROOM B2
		14:30	RILEM TC 287-CCS Special Session	RILEM TC 281-CCC Special Session: Carbonation of concrete with supplementary cementitious materials	Data, Machine learning & optimization	Non-standardised testing techniques
						Supplementary cementitious materials
		15:45	COFFEE BREAK			
			ROOM A1		ROOM B1	ROOM B2
		16:15	RILEM TC 287-CCS Special Session		3D printing	Non-standardised testing techniques
						Supplementary cementitious materials
			ROOM A1			
		17:15	Closing session			
18:00		17:45				

DAY 4 • SATURDAY JUNE 17, 2023

9:00		Boat tour (Optional) boarding at Adamas port
14:30		Registration needed

		ROOM P	ROOM A2	ROOM B1	ROOM I	ROOM B3
8:00						
10:00	HALL					
	REGISTRATION: 10:00 - 19:00	RILEM TC 287-CCS meeting: Cracking in RC structures	RILEM TC 299-TES meeting: Thermal energy storage in cementitious composites	RILEM TC 298-EBD meeting: Durability of pastes against ions	RILEM TC 283-CAM meeting: Chloride transport in alkali-activated materials	RILEM TC MCP meeting: Accelerated mineral carbonation for material production
13:00		LUNCH				
14:00						

RILEM TC MCP special session: Accelerated mineral carbonation for material production Chairpersons: Ruben Snellings and Thomas Matschei	RILEM TC 299-TES special session: Thermal energy storage in cementitious composites Chairpersons: Antonio Caggiano and Jorge Dolado	RILEM TC 298-EBD special session: Durability of pastes against ions Chairperson: William Wilson	RILEM TC 275-HDB meeting: Bio-aggregate based building materials	RILEM TC 281-CCC meeting
ROOM A1	ROOM A2	ROOM B1	ROOM I	ROOM B3
Carbonation of concrete slurry waste and its use as supplementary cementitious material <i>Frank Winnefeld, Johannes Tiefenthaler, Andreas Leemann</i>	Analysis of methods reducing early age shrinkage of ultra-light foam concrete with phase change material <i>Barbara Klemczak, Jacek Golaszewski, Grzegorz Cygan, Aneta Smolana, Malgorzata Golaszewska</i>	A novel uniaxial penetration approach to investigate external sulfate attack on blended cement pastes <i>Qiao Wang, William Wilson, Karen Scrivener</i>	RILEM TC 275-HDB meeting: Bio-aggregate based building materials	
Effect of selected process parameters during carbonation hardening on the CO2-binding potential of cementitious materials <i>Elena Woydich, Anne Heisig, Harald Hilbig, Alisa Machner</i>	Cement based Materials with PCM and Reduced Graphene Oxide for Thermal Insulation for Buildings <i>Edurne Erkizia, Christina Strunz, Jean Luc Dauvergne, Guido Goracci, Ignacio Peralta, Ángel Serrano, Amaya Ortega, Beatriz Alonso, Francesca Zanoni, Michael Dünghelder, Jorge S. Dolado, Juan Jose Gaitero, Christoph Mankel, Eduardus Koenders</i>	Calibration of Tang's Model for concentration dependence of diffusion in cementitious materials <i>Neven Ukrainczyk, Eddie Koenders</i>		
Potential of CO2 storage in recycled concrete aggregates by accelerated carbonation <i>Alexander Oliva Rivera, Jan Suchozawski, Katarina Malaga</i>	Computational design of building envelopes as thermal metamaterials <i>Victor D. Fachinotti, Juan C. Álvarez Hostos, Ignacio Peralta, Antonio Caggiano</i>	Chloride binding in slag containing composite cements <i>Arezou Babaahmadi, João Figueira</i>		
Two-step carbonation of pervious concrete prepared with recycled concrete aggregates: aggregate property, experimental setup and preliminary results <i>Zhidong Zhang, Xiulin Chen, Ueli Angst</i>	Novel cement-lime composites with Phase Change Materials (PCM) and Biomass ash for energy efficiency in architectural applications <i>Cynthia Guardia, Ana Guerrero, Gonzalo Barluenga</i>	Numerical simulation of chloride ion ingresson in mortar incorporating the effect of ITZ using an integrated COMSOL-IPHREEQC framework <i>Siventhirarajah Krishnaya, Yogarajah Elakneswaran, Yoda Yuya, Kitagaki Ryoma</i>		
		RILEM TC 283-CAM special session: Chloride transport in alkali-activated materials Chairperson: Arnaud Castel		
		ROOM B1		
Accelerated carbonation of recycled concrete aggregates and model materials <i>Farah Kaddah, Ouali Amiri, Harifidy Ranaivomanana, Emmanuel Rozière</i>	The effect of salt-impregnation on thermochemical properties of a metakaolin geopolymer composite for thermal energy storage <i>Lorena Skevi, Xinyuan Ke, Jonathon Elvins, Yulong Ding</i>	Durability of nano-engineered High Volume Fly ash composite: Sustainable alternative for adaptation to climate change <i>Chamilu Gunasekara, David W. Law, Charith Herath, Sujeeva Setunge</i>	Rilem TC 275-HDB special session: Bio-aggregate based building materials Chairperson: Arnaud Castel	
Direct aqueous mineralization of industrial waste for the production of carbonated supplementary cementitious materials <i>Francesca Bonfante, Giuseppe Ferrara, Pedro Humbert, Jean-Marc Tulliani, Paola Palmero</i>	Hygrothermal measurement of heavy cob materials <i>Aguerata Kabore, Claudiane Ouellet-Plamondon</i>	Microstructure and performance of three silicate binders in the range CSH-CASH-NAS <i>Jeanette Visser, Juan Garzon-Amortegui, Timo Nijland, Sacha Hermanns</i>		
Effect of carbonates on the formation of magnesium silicate hydrates (M-S-H) and magnesium aluminosilicate hydrates (M-A-S-H) <i>Ellina Bernard, Barbara Lothebach, Alexander German, Frank Winnefeld</i>	Experimental characterization and modelling of geopolymers and hybrid materials for solar thermal energy <i>Irene Ramón-Álvarez, Sergio Sánchez-Delgado, Ignacio Peralta, Antonio Caggiano, Manuel Torres-Carrasco</i>	Testing geopolymer concrete performance in chloride environment <i>Quang Dieu Nguyen, Samuel De Carvalho Gomes, Mohammed Fouad Alnahhal, Wengui Li, Taehwan Kim, Arnaud Castel</i>		
	Smart-earth multifunctional cement composites for sustainable constructions: thermal and sensing characterization <i>Andrea Meoni, Claudia Fabiani, Antonella D'Alessandro, Anna Laura Pisello, Filippo Ubertini</i>	Correlation between chloride Ions' migration and diffusion coefficients of Alkali-Activated Concrete <i>Patrycja Duży, Izabela Hager, Marta Choiriska, Ouali Amiri</i>	Relation between the hydration kinetics of mineral binders and the mechanical performance of plant-based concretes <i>Ana Laura Berger Cokely, Natalia Araujo Martinhao, Rafik Bardouh, Sandrine Marceau, Fabienne Farcas, Evelyne Toussaint, Sofiane Amziane, Grégory Mouille</i>	RILEM TC 281-CCC meeting: Carbonation of concrete with supplementary cementitious materials
COFFEE BREAK				
RILEM TC 302-CNC special session: Carbon-based materials for cementitious matrices Chairperson: Marco Liebscher	RILEM TC 299-TES special session: Thermal energy storage in cementitious composites Chairpersons: Antonio Caggiano and Jorge Dolado	RILEM TC 298-EBD special session: Durability of pastes against ions Chairperson: William Wilson	RILEM TC 275-HDB special session: Bio-aggregate based building materials Chairpersons: Sofiane Amziane and Florence Collet	
ROOM A1	ROOM A2	ROOM B1	ROOM B2	
Development of self-sensing cementitious composites with improved water and chloride resistance <i>Wenkui Dong, Wengui Li, Marco Liebscher, Viktor Mechtcherine</i>	Phase Change Materials shape stabilized in biochar for energy efficiency and structural strength enhancement in buildings <i>Carolina Santini, Claudia Fabiani, Antonella D'Alessandro, Anna Laura Pisello</i>	Resistance of lime-natural pozzolan mortars in salt-laden environments <i>Martin Vyšvařil, Patrik Bayer, Karel Dvořák</i>	Characterisation of hemp shiv and its effect on the compressive strength of hemp concrete <i>Ahmed Abdalqader, Tahreer Fayyad, Mohammed Sonebi, Su Taylor</i>	
Hierarchical CNT-coated basalt fiber yarns as smart and ultrasensitive reinforcements of cementitious matrices for crack detection and structural health monitoring <i>Marco Liebscher, Lazaros Tzounis, Cesare Signorini, Viktor Mechtcherine</i>		Self-sufficient reactive transport modelling in cement-based materials with low-carbon foot-print <i>O. Burkan Isgar, William Jason Weiss</i>	From lab scale to the construction site scale: properties of hemp thermal insulation <i>Lily Debarde, Christophe Lanas, Florence Collet, Jules Delsalle, Valentin Colson</i>	
Influence of carbon nanotubes dispersion degree on the piezo-resistive behavior of self-sensing cementitious composites <i>Claudio José Aguiar Junior, Pedro de Almeida Carísio, Carlos Fernando Teodósio Soares, Romilda Dias Toledo Filho, Oscar Mendoza Reales</i>		The penetration of chlorides within cement pastes under an electric field <i>Francesca Reichlin, Christian Paglia</i>	RILEM TC 275 HDB – International RRT on MBV measurement of vegetal concrete <i>Florence Collet, Stijn Mertens, Paulina Faria, Sofiane Amziane, Thibaut Colinart, Camille Magniont, Sylvie Prêrot, Romildo Dias Toledo Filho, Méryl Lagouin</i>	
Effect of carbon nanomaterials on the microstructural and mechanical properties of Geopolymer Binders <i>Liliya Dubey, Leon Winn, Neven Ukrainczyk, Eduardus Koenders</i>		Xcrl/vt as an indicator of the resistance against bulk chloride diffusion <i>William Wilson, Fabien Georget, Karen L. Scrivener</i>	Rheological behavior of 3D printable bio-concretes produced with rice husk <i>Matheus P. Tinoco, Oscar A.M. Reales, Romildo D. Toledo Filho</i>	
		Performance of migrating corrosion inhibitors in cracked reinforced concrete exposed to marine environment <i>Igor Lapiro, Guy Zur, Ela Ofer-Rozovsky, Rami Eid, Konstantin Kovler</i>	Flax fabric-reinforcement lime composite as a strengthening system for masonry materials: Study of adhesion <i>Ali Rakhsh Mahpour, Josep Claramunt, Mónica Ardanuy, Joan Ramon Rosell</i>	
		Slag or reacted binder, which dissolves first in sulphuric acid? <i>Nana Wen, Arne Peys, Tobias Hetrel, Vincent Hallet, Yiannis Pontikes</i>	Results of RILEM TC-275 (HDB) interlaboratory test on water vapor permeability of bio-aggregate based building materials <i>Thibaut Colinart, Camille Magniont</i>	
FREE TIME				
WELCOME COCKTAIL AND EXHIBITION (CONFERENCE VENUE)				

8:00	Registration (Hall): 08:00 - 18:00				
	ROOM A1				
9:00	Opening Ceremony Agnieszka Jędrzejewska (Chair) and Fragkoulis Kanavaris (Chair), Emmanuel Mikelis (Mayor of Milos), Nele de Belie (RILEM Vice President), Maria Stefanidou (RILEM Europe Convener)				
9:30	Keynote Speaker 1: Maria Stefanidou - Substituting natural pozzolan with artificial derived from industrial perlite waste for mortar production Chairperson: Fragkoulis Kanavaris				
	Supplementary cementitious materials <i>Chairperson: Dirk Schlicke</i>	Durability and robustness of concrete materials and structures <i>Chairperson: Agnieszka Jędrzejewska</i>	Modelling of cement-based materials (macroscopic/multiscale approach) <i>Chairperson: Farid Benboudjema</i>		
	ROOM A1	ROOM A2	ROOM B1		
10:30	Binary and ternary shale binders with high replacement levels <i>Wolfgang Kunther, Lasse Norbye Dassing</i>	Length change and water uptake characteristics of synthesized calcium silicate hydrates <i>Shingo Asamoto, Rintaro Koyama, Kunio Matsui, Keisuke Takahashi</i>	A multiscale multiphysics platform to investigate cement based materials <i>Julien Sanahuja, Francois Soleilhiet, Jean-Luc Adia</i>		
10:45	Properties of belite-rich cement with supplementary cementitious materials <i>Martin Boháč, Dana Kubátová, Anežka Zezulová, Theodor Staněk</i>	Leaching characteristics of Cs from the decomposed Cu ferrocyanide adsorbent solidified by Portland cement and geopolymer <i>Kazuo Yamada, Tsuneki Ichikawa, Tojo Yasumasa, Kazuto Endo</i>	Temperature-dependent behavior of mature cement paste: creep testing and multiscale modeling <i>Eva Binder, Markus Königsberger, Rodrigo Díaz Flores, Herbert A. Mang, Christian Hellmich, Bernhard L.A. Pichler</i>		
11:00	The Influence of Gypsum Content on the Hydration and Properties of Belite-Ye'elimite-Ferrite (BYF) Clinker <i>Adam Sabbah, Semion Zhutovsky</i>	Restoration of degraded calcium-silicate-hydrate in calcium-leached cement paste <i>Thinh Nguyen, Quoc Tri Phung, Norbert Maes, Geert De Schutter, Özlem Cizer</i>	Estimation of Protected Paste Volumes by Dirichlet Tessellation Associated with Point Processes of Air Voids <i>Kazuya Ohyama, Shin-ichi Igarashi</i>		
11:15	COFFEE BREAK AND GROUP PHOTO				
	Supplementary cementitious materials <i>Chairperson: Kosmas Sideris</i>	Durability and robustness of concrete materials and structures <i>Chairperson: Shingo Asamoto</i>	Modelling of cement-based materials (macroscopic approach) <i>Chairperson: Bernhard Pichler</i>	Early-age behaviour of non-Portland cement materials <i>Chairperson: TBA</i>	Integral BIM-based planning <i>Chairperson: Jose Granja</i>
	ROOM A1	ROOM A2	ROOM B1	ROOM B2	ROOM B3
11:45	Using non-standard concretes in a major infrastructure project: a multidisciplinary approach for implementation <i>Athina Papakosta, Apostolos Tsoumlekas, Wolf Wichmann, Fragkoulis Kanavaris</i>	Reaching beyond internal curing: the effects of superabsorbent polymers on the durability of reinforced concrete structures <i>José Roberto Tenório Filho, Nele De Belie, Didier Snoeck</i>	Numerical Modeling of Water Transfer in Geomaterials: Application to a Concrete Tunnel Subjected to Both Drying and Liquid Overpressure <i>Aya Rima, Laurie Lacarrière, Alain Sellier, Minh Ngoc Vu</i>	Effect of activator solutions on the thixotropic behavior of alkali-activated slag concrete <i>Yubo Sun, Saeid Ghorbani, Guang Ye, Geert De Schutter</i>	Enhanced Interoperability between Geotechnical and Structural Engineering for 3D Building Models <i>Haris Felic, Dirk Schlicke, Andreas-Nizar Granitzer, Franz Tschuchnigg</i>
12:00	Reduction of CO2 emission by using low carbon concretes with accelerating admixtures <i>Ekaterina Illarionova, Anna Antonova, Fahim Al-Neshawy, Jouni Punkki</i>	Experimental investigation on the novel self-healing properties of concrete mixed with commercial bacteria-based healing agent and crystalline admixtures <i>Harry Hermawan, Virginie Wiktor, Pedro Serna, Elke Gruyaert</i>	Multi-physics modelling of concrete shrinkage with the Lattice Discrete Particle Model considering the volume of aggregate <i>Yilin Wang, Roman Wan-Wendner, Giovanni Di Luzio, Jan Vorel, Jan Belis</i>	Evaluation of the cracking risk in alkali activated materials by means of restrained shrinkage test <i>Marco Siratti, Sarah Blomart, Brice Delsaute, Stéphanie Staquet</i>	RecycleBIM approach towards integrated data management for circularity: proof of concept in a RC building <i>Artur Kuzminykh, Manuel Parente, Vieira Vasco, José Granja, Miguel Azenha</i>
12:15	Development of low-carbon lightweight concrete using pumice as aggregate and cement replacement <i>Ali Abbas, Mathura Mahadevan, Saru Prajapati, Bamdad Ayati, Fragkoulis Kanavaris</i>	A New Class of Hybrid Self-Healing Cementitious Materials Combining Shape Memory Alloy Wires and Super Absorbent Polymers <i>Mario Antoun, Liam Butler</i>	MASKE: Particle-Based Chemo-Mechanical Simulations of Degradation Processes <i>Enrico Masoero</i>	Effect of Aggregate Skeleton and Admixtures on Fresh and Hardened Properties of High-Strength Geopolymer Mortars <i>Zoi G. Ralli, Stavroula J. Pantazopoulou</i>	Towards standardization of data for structural concrete: product data templates <i>Mohamad El Sibaij, Renan Rocha Ribeiro, Ricardo Dias, José Rui Pinto, José Granja, Miguel Azenha</i>
12:30	Study on Properties and Performance of Green Concrete <i>Lisen Johansson, Alireza Bahrami, Mathias Cehlin, Marita Wallhagen</i>	Incorporation of Hybrid Biopolymer/Silicate-Based Microcapsules in cementitious mixtures for potential uses in Self-Healing Technology with Renewable Materials <i>Sandra Arroyave, Eloy Asensio, Jairo E. Perilla, Paulo César Narváez-Rincón, Albeiro Cadavid, Ana Guerrero</i>	Modelling of the CO2 uptake by recycled concrete aggregates <i>Philippe Turcry, Bruno Huet, Jonathan Mai-Nhu, Pierre-Yves Mahieux, Thomas Pernin</i>	Effect of SiO2/Na2O ratio on the fresh and mechanical properties of binary blend alkali activated mortar incorporating copper and blast furnace slags <i>Saeid Ghorbani, Kobe Peeters, Stijn Matthys</i>	Integral BIM-based planning <i>José Alejandro Arellano Pericón, Dirk Schlicke</i>
12:45	Exploration of Waste Glass Powder as Partial Replacement of Cement in Concrete <i>Gaurav Chand, Mithila Achintha, Yong Wang</i>	Study on Performance of Self-healing and Water Leakage Channel-Blocking Admixture for Mortar and Concrete <i>Karen Ito, Hiromi Fujiwara, Masanori Maruoka, Kenji Kuwamoto</i>		Effect of Organic Retarders On Fluid-State and Strength Development of a Rock-Based Geopolymer <i>Mohammadreza Kamali, Mahmoud Khalifeh, S.M Samindi M.K Samarakoon, Saeed Salehi, Yuxing Wu</i>	Industry 4.0 enabled modular precast concrete components: a case study <i>Simon Kasse, Patrick Forman, Jan Stindt, Jannik Hoppe, Markus König, Peter Mark</i>
13:00 14:30	LUNCH				

Supplementary cementitious materials <i>Chairperson: Marijana Serdar</i>	Durability and robustness of concrete materials and structures <i>Chairperson: Emmanuel Roziere</i>	Modelling of cement-based materials (atomistic and dynamic molecular simulations) <i>Chairperson: Enrico Masoero</i>	Valorisation and recycling of non-binder components of concrete <i>Chairperson: Mohammed Sonebi</i>	Design and performance <i>Chairperson: Aveline Darquennes</i>	
ROOM A1	ROOM A2	ROOM B1	ROOM B2	ROOM B3	
Optimizing the flexural strength of cement mortar incorporating natural pozzolan using taguchi method <i>Jad Bawab, Hilal El-Hassan, Amr El-Dieb, Jamal Khatib</i>	The effect of heat curing on the early-strength development of low-carbon concrete <i>Anna Antonova, Ekaterina Illarionova, Fahim Al-Neshawy, Jouni Punkki</i>	Einstein explains water transport in C-S-H <i>Tulio Honorio</i>	Microbial induced calcium carbonate precipitation (MICP) treatments for the reduction of water absorption of recycled mixed aggregates <i>Briqitte Nagy, Johanna Zentner, Andrea Kustermann</i>	Fiberglass mesh reinforced rendering mortar: Effect of fiberglass reinforcement <i>Pascale Saba, Tulio Honorio, Xavier Brajer, Farid Benboudjema</i>	14:30
Study of hydration properties for blast furnace slag-blended cement: prediction of slag hydration kinetics <i>Mohamad Ali Ahmad, Harifidy Ranaivomanana, Stéphanie Bonnet, Valérie L'Hostis, Paul Buttin</i>	Evaluation of the correlation between ASR expansion and pozzolanic reactivity of ternary concrete systems containing glass powder <i>Wena de Nazare do Rosario Martel, Joséé Duchesne, Benoit Fournier</i>	Multiscale modeling of the dielectric response of C-S-H <i>Sofiane Ait-Hamadouche, Tulio Honorio, Thierry Bore, Farid Benboudjema, Franck Daout, Eric Your'c'h</i>	Effect of elevated temperatures on concrete made with ash from wood biomass and recycled polymer fibers from waste rubber <i>Marija Jelcic Rukavinga, Ivan Gabriel, Martina Kozlik, Vanja Zvorc, Nina Stimmer</i>	Flexural and shear performance of precast prestressed composite beams <i>Jakub Zajac, Lukasz Drobiec, Julia Blazy, Krzysztof Grzyb</i>	14:45
Development of eco-cement from recycled low-carbon footprint by-product <i>Paula Velardo, Marta Barroso, Isabel F. Sáez del Bosque, Maria I. Sánchez de Rojas, Nele de Belie, César Medina Martínez</i>	Development of a framework to provide concrete with low carbon footprint and enhanced resistance against ASR-induced development <i>Diego Jesus De Souza, Anne Heisig, Alisa Machner, Wolfgang Kunther, Leandro Sanchez</i>	Is thermal pressurization in C-S-H relevant for concrete spalling? <i>Fatima Masara, Tulio Honorio, Farid Benboudjema</i>	Evaluation of eco-friendly concrete release agents based on bio-waxes <i>Ojas Chaudhari, Giedrius Zirculis, Isra Taha, Dag Tryggö</i>	Assessing early-age dynamic elastic modulus in high-performance concrete <i>Arosha Dabareera, Liang Li, Vishendra Singh Jamwal, Nisarg Satapara, Xifeng Liu, Vinh Dao</i>	15:00
Influence of aggregate type on the properties on SCC with fly ash <i>Ksenija Jankovic, Marko Stojanovic, Dragan Bojovic, Anja Terzic, Srbojub Stankovic</i>	Effect of chloride concentration on the freeze-thaw resistance of concrete <i>Alexander Haynack, Alexander Schneider, Jithender J. Timothy, Thomas Kränkel, Christoph Gehlen, Charlotte Thiel</i>	Atomistic dissolution of β-C2S cement clinker crystal surface: Part 1 Molecular Dynamics (MD) Approach <i>K. M. Salah Uddin, Mohammadreza Izadifar, Neven Ukrainczyk, Eduardus Koenders, Bernhard Middendorf</i>	Use of recycled carbon fibres in textile reinforced concrete for the construction industry <i>Vanessa Overhage, Thomas Gries</i>	Assessment of deviations in material properties quantified under laboratory conditions and from the construction site <i>David Oy, Juan Mauricio Lozano Valcarcel, Thomas Kränkel, Rolf Breitenbücher, Christoph Gehlen</i>	15:15
Harvest residues ash and ceramic powder as pozzolanic materials for developing sustainable building materials <i>Slodoban Šupić, Vlastimir Radonjanin, Mirjana Malešev, Ivan Lukić, Vladan Pantić</i>	Carbonation or Chloride ingress? Which one is the durability key factor in low reactivity clay and limestone blended concrete <i>Juan Lizarazo-Marriaga, Luis Felipe Salazar-Mayorga, Luis Eduardo Peña-Cruz</i>	Mesosopic Dissolution of β-C2S Cement Clinker: Part 2 Atomistic Kinetic Monte Carlo (KMC) Upscaling Approach <i>Mohammadreza Izadifar, Neven Ukrainczyk, K. M. Salah Uddin, Bernhard Middendorf, Eduardus Koenders</i>	Development of Concrete Mixtures Based Entirely on Construction and Demolition Waste and Assessment of Parameters Influencing the Compressive Strength <i>Gurkan Yildirim, Emircan Özcelikci, Musab Alhawati, Ashraf Ashour</i>	Development of filling grout material for boulder ground <i>Tomohiko Abe, Egy Crystal Soesilo, Hiromi Fujiwara</i>	15:30
Alternative cementitious binders using mineral wastes <i>Surya Maruthupandian, Antonios Kanellopoulos</i>	Exposure of Portland-limestone cement – metakaolin paste to cold chloride-sulfate environment: NMR spectroscopy assessment of structural changes in hydrated phases and relation to chloride ingress <i>Konstantinos Sotiriadis, Anton Mazur, Peter Tolstoy, Radek Ševčík</i>	Quantum mechanically informed kinetic Monte Carlo models for hydrogen diffusion in BCC-iron <i>Gonzalo Alvarez, Alvaro Ridruejo, Javier Sanchez</i>	Deconstructable Concrete Structures made of Recycled Aggregates from Construction & Demolition Waste: the experience of the DeConSTRAction project <i>Marco Pepe, Julien Michels, Giulio Zani, Marco Carlo Rampini, Enzo Martinelli</i>	In-situ Casting Method and Durability of Cementitious Materials at Deep Seafloor <i>Keisuke Takahashi, Tetsu Akitou, Mari Kobayashi</i>	15:45
Possibilities for application of modified solidified water treatment sludge as supplementary cementitious material <i>Marina Aškrabič, Dimitrije Zakič, Aleksandar Savić, Aleksandar Radević, Ivana Stojanović</i>	Air permeability of concrete damaged by Internal Swellings Reactions (ISR) <i>Joe Maalouf, Hugo Cagnon, Jérôme Verdier, Jacques Jabbour, Stéphane Multon</i>		Production waste fibres as a sustainable alternative for strengthening cementitious composites <i>Ana Baricevic, Katarina Didulica, Branka Mrduljās, Antonija Ocelić</i>	Effect of spatial variability on the failure behaviour of a reinforced concrete shear wall <i>Wafaa Abdallah, Jacqueline Saliba, Sidi Mohammed Elachachi, Zoubir Mehdi Sbartal, Marwan Sadek, Fadi Hage Chehade</i>	16:00
COFFEE BREAK					16:15
Supplementary cementitious materials <i>Chairperson: Konstantinos Sotiriadis</i>	Durability and robustness of concrete materials and structures <i>Chairperson: Luca Valentini</i>	Modelling of cement-based materials <i>Chairperson: Tulio Honorio</i>	Valorisation and recycling of non-binder components of concrete <i>Chairperson: Camille Magniont</i>	Design and performance <i>Chairperson: Christophe Lanos</i>	
ROOM A1	ROOM A2	ROOM B1	ROOM B2	ROOM B3	
Hourly-repeated three-minutes creep testing of a limestone calcined clay cement paste (LC3) <i>Sophie J. Schmid, Luis Zelaya-Lainez, Olaf Lahayne, Martin Peyerl, Bernhard L. A. Pichler</i>	Toward sustainable strengthening systems for RC structures <i>Reza Mohammadifrouz, Joaquim Barros</i>	Experimental and numerical investigations on concrete abrasion of hydraulic structures <i>Qiong Liu, Min Wu</i>	Durability characterization of concrete using seashell co-products as aggregate replacement <i>Camille Martin-Cavaillé, Alexandra Bourdot, Nassim Sebabi, Rachid Bennacer</i>	Probabilistic Assessment of RC Piers Considering Vertical Seismic Excitation Based on Damage Indices <i>Shima Mahboubi, Mahmoud R Shiravand, Golshid Shid, Mahdi Kioumarsji</i>	16:30
Chemical and mechanical characterization of a novel CSA blended cement based on CDW inorganic fractions <i>Moisés Frías, Sagrario Martínez-Ramírez, Lucía Fernández-Carrasco, Rosario García Jiménez, Raquel Vigil de la Villa, Manuel Monasterio, Jaime Moreno-Juez, Iñigo J. Vegas-Ramiro</i>	Development of high-performance fiber-reinforced cementitious composite (HPFRCC) using titanium dioxide and nylon fiber <i>Hong-Joon Choi, Soonho Kim, Taekgeun Oh, Rongzhen Piao, Doo-Yeol Yoo</i>	Thermomechanical investigations for the design of reinforced concrete facings <i>Eva Maria Dorfmann, Dirk Schlicke, Viet Tue Nguyen</i>	Valorization of sulphidic mine tailings as artificial aggregate: implementation in cement-based materials <i>Yury Villagran-Zaccardi, Liesbeth Hockmans, Arne Peys</i>	Axial Strength of Pile Head Embedded with Steel Column: Effect of Reinforcing Bar on Axial Strength <i>Kunie Ikeuchi, Tetsu Usami, Miyauchi Yasuyoshi</i>	16:45
Reactivity of mixed layer clays - the effect of polycarboxylate-based superplasticizers on effective particle size distributions <i>Amrita Hazarika, Arezou Babaahmadi</i>	PVME as a sustainable alternative to improve performance of dense mortar at elevated temperature <i>Vikash Singh, Gaurav Srivastava</i>	A benchmarking of Slag blended cement hydration models <i>Jack Atallah, Harifidy Ranaivomanana, François Bignonnet, Stéphanie Bonnet</i>	Influence of the composition of original concrete on the carbonated recycled concrete aggregates properties <i>Sandrine Braymand, Sébastien Roux, Hugo Mercado Mendoza, Florian Schlupp</i>	Investigation of combined electronic and ionic thermoelectric concrete <i>Mostafa Yassef, Seyedabolfazl Mousavihashemi, Tanja Kallio, Jari Puttonen</i>	17:00
R ³ -test for pozzolanic reactivity: experimental issues and practical recommendations for hydration stoppage with isopropanol <i>Kira Weise, Neven Ukrainczyk, Luca Marei Endell, Eduardus Koenders</i>	Towards Development of Sustainable Ultra High Performance Fiber Reinforced Concrete (UHPFRC) <i>Spyridon Paschalis, Andreas Lampropoulos, Joseph Rizzuto</i>	Development of an experimental-numerical approach to model cement paste microstructure using quantitative phase assemblage from XRD and thermodynamic modeling <i>Mohammed Krameche, William Wilson, Arezki Tagnit-Hamou</i>	Utilisation of COVID-19 waste PPE in the applications of structural concrete <i>Shannon Kilmartin-Lynch, Rajeev Roychand, Jie Li, Mohammad Saberian, Fangjie Chen</i>	New conceptions and constructive methods for Pumped Storage Hydropower plants <i>Eduardo Fairbairn, Larissa Santos, Oscar Reales, Marina Farias, Rodolfo Andrade, Alfredo Flores</i>	17:15
Evaluation of the pozzolanic activity of copper slag through paste and mortar studies <i>Dhiraj Mahajan, Muhammad Salman</i>		Effect of member geometry on the modification factor for the degree of restraint before cracking in order to account for the effect of cracking <i>Mariusz Zych</i>	Experimental investigation of the influence of hemp particles on hydration kinetics of multicomponent mineral binder <i>Dmytro Kosiachevskiy, Kamila Abahri, Anne Daubresse, Evelyn Prat, Mahend Chaouche</i>	Design and Development of Multi-Faceted Engineered Concrete <i>Nabodyuti Das, Prakash Nanthagopalan</i>	17:30
Refining kinetic models for SCM reactivity in blended cements <i>Ruben Snellings</i>		Replicating the failure mechanism of a Real-world Event with the Lattice Discrete Particle Model <i>Gili Lifshitz Sherzer, Amichai Mitelman</i>	Use of marble sludge waste and polypropylene fibers in developing eco-friendly strain resilient cementitious composites <i>Souzana Tastani, Paraskevi Christou, Christos Kostas, Ioannis Ismail</i>		17:45
CONFERENCE DINNER Please be at the Milos Conference Center entrance at 18h15, and board the conference bus					18:00 23:00

8:00	Registration (Hall): 08:00 - 18:00				
	ROOM A1				
9:00	Keynote Speaker 2: Jean-Michel Torrenti - Fast carbonation of recycled concrete aggregates - the results of the FastCarb project Chairperson: <i>Farid Benboudjema</i>				
	Non-standardised testing techniques <i>Chairperson: Eduardo Fairbairn</i>	RILEM TC 281-CCC Special Session: Carbonation of concrete with supplementary cementitious materials <i>Chairperson: Nele de Belie and Susan Bernal</i>	Behaviour of non-Portland cement materials <i>Chairperson: Zhidong Zhang</i>	Durability and delayed strains in non-Portland cement materials <i>Chairperson: Arezki Tagnit-Hamou</i>	Structural Health Monitoring and maintenance management <i>Chairperson: Ueli Angst</i>
	ROOM A1	ROOM A2	ROOM B1	ROOM B2	ROOM B3
10:00	An innovative experiment for air pressure measurements in crack models representative of real cracks in concrete <i>Jean-Louis Tailhan, Giuseppe Rastello, Jean-Claude Renaud, Claude Boulay</i>	New insights into the carbonation process of mortars and concretes <i>Marlene Sakoparnig, Isabel Galan, Bernhard Müller, Iris Zoegl, Joachim Juhart, Florian Mittermayr, Michael Autischer, Cyrill Grengg</i>	Taguchi Method for Optimizing Alkali-Activated Mortar Mixtures Using Waste Perlite Powder and Granulated Blast Furnace Slag <i>Joad Hwalla, Abdulkader El-Mir, Hilal El-Hassan, Amr El-Dieb</i>	Strength and durability assessment of geopolymer mortars based on non-calcined dredged sediments <i>Lisa Monteiro, Jacqueline Saliba, Humberto Yanez-Godoy, Nadia Saiyouri</i>	Development of a low-budget monitoring system for expansion joints with real-time data analyses <i>Lukas Ambros, Natalie Binder, Christian Hölzl, Markus Vill</i>
10:15	Assessing cement matrix permeability by neutron dark field imaging <i>Luca Valentini, Gregorio Dal Sasso, Fabio Castiglioni, Matteo Busi, Giorgio Ferrari, Maria Chiara Dalconi, Markus Strobl, Gilberto Artioli</i>	Carbonation performance of hybrid ternary binders containing low-calcium fly ash and sodium sulfate <i>Juan Manuel Etcheverry, Philip Van den Heede, Yury Andres Villagrán-Zaccardi, Nele De Belie</i>	Influence of slag chemistry on the carbonation of sodium sulfate-activated slag cements <i>Zengliang Yue, Yuvaraj Dhandapani, Samuel Adu-Amankwah, Susan A. Bernal</i>	Monitoring and modeling of visco-elastic strains of alkali-activated slag mortar since the earliest age <i>Ali Naqi, Brice Delsaute, Markus Königsberger, Stéphanie Staquet</i>	Monitoring of reinforced concrete structures: disposal of low and intermediate level radioactive waste <i>Nuria Rebollo, Julio E. Torres, Servando Chinchon, Javier Sanchez, Sylvia de Gregorio, Inmaculada López, Manuel Ordoñez</i>
10:30	Dam concrete in situ creep tests. Experimental setup and results from six large concrete dams <i>Carlos Serra, João Conde Silva, António Lopes Batista, Nuno Monteiro Azevedo</i>	Carbonation of concretes with different binder chemistry – a comparative analysis <i>Matea Flegar, Alma-Dina Bašić, Olivera Bukvić, Marijana Serdar</i>	Characterization and prediction of clinker phase assemblage in low-CO2 iron-rich calcium sulfo-aluminate cements incorporating high volumes of bauxite residue <i>Rahul Roy, Tobias Hertel, Yiannis Pontikes</i>	Delayed deformations of Na- and K- sulfates activated blast-furnace slag mortars <i>Lei Li, Kinda Hannawi, Aveline Darquennes</i>	Calibration of multi-physics models on weakly instrumented structures: applications to containment buildings <i>Francois Saleilhet, Julien Sanahuja, Jean-Luc Adia</i>
10:45	Developing a new rapid, relevant, and reliable (R3) method for accelerated measurement of carbonation progress under gas pressure <i>Benedikt Grimm, Sebastian Münchmeyer, Thomas Kränkel, Christoph Gehlen, Charlotte Thiel</i>	Influence of curing type and duration on the resistance to accelerated carbonation and its relation to natural indoor and outdoor sheltered carbonation <i>Hanne Vanoutrive, Peter Minne, Özlem Cizer, Elke Gruyaert</i>	Early-age hydration of an EAF slag based Alite–Ferrite cement clinker in the presence of Na2CO3 <i>Aniruddha Baral, Visa Isteri, Elijah Adesanya, Juho Yliniemi, Timo Fabritius, Theodore Hanein</i>	Effect of internal and external factors on the volume changes of slag binder activated by sodium hydroxide at early-age <i>Maité Lacante, Brice Delsaute, Stéphanie Staquet</i>	Strain and temperature monitoring in early-age concrete by distributed optical fiber sensing <i>Carlos Gil Berrocal, Ignasi Fernandez, Ingemar Löfgren, Erik Nordström, Rasmus Rempling</i>
11:00	Evaluation of chloride diffusivity in reinforced concrete under tensile load <i>Amandine Asselin, Jean-Philippe Charron, Clélia Desmettre, Farid Benboudjema, Cécile Oliver-Leblond</i>	Influence of humidity and loading on carbonation and 4-point bending strength of slag cement basic mortar <i>Élodie Piolet, Siham Kamali-Bernard</i>	Thermal study of hemp concrete behavior when subjected to high temperatures by X-ray microtomography <i>Chady El Hachem, Joseph Moussa, Kamilla Abahrì (presented by Dmytro Kosciachevskyi)</i>	Long-term mechanical and durability behaviour of two alkali-activated types of concrete <i>Huibert Jilles Bezemer, Nikhil Awasthy, Miladena Lukovic</i>	A novel service life prediction for reinforced concrete infrastructure systems <i>Nabil Semaan</i>
11:15	COFFEE BREAK				
	RILEM TC 287-CCS Special Session: Cracking in RC structures <i>Chairperson: Miguel Azenha and Fragkoulis Kanavaris</i>	RILEM TC 281-CCC Special Session: Carbonation of concrete with supplementary cementitious materials <i>Chairperson: Nele de Belie and Susan Bernal</i>	Durability and robustness of concrete materials and structures <i>Chairperson: Neven Ukrainczyk</i>	Non-standardised testing techniques <i>Chairperson: Sousana Tastani</i>	Structural Health Monitoring and maintenance management <i>Chairperson: Jan Suchorzewski</i>
	ROOM A1	ROOM A2	ROOM B1	ROOM B2	ROOM B3
11:45	Early-age to long-term numerical simulation of concrete members tested in Adjustable Restraining Frames <i>Claudio Ferreira, Dirk Schlicke, Carlos Sousa, Miguel Azenha</i>	On the carbonation dilemma and how to escape from it <i>Ueli Angst</i>	Rheology, mechanical properties and durability of Self-Compacting Concrete using sustainable expanded perlite microspheres <i>Andreas Kounadis, Efstratios Badogiannis, Panagiotis Angelopoulos, Dimitrios Petrakis, Vasiliós-Orfeas Tsiaras</i>	Innovative FWD testing on concrete slabs <i>Rodrigo Diaz Flores, Valentin Donev, Mehdi Aminbaghai, Luis Zelaya-Lainez, Ronald Blab, Martin Buchta, Lukas Eberhardsteiner, Bernhard L. A. Pichler</i>	Investigation of the impact of concrete surface treatment methods on the interfacial bond strength <i>August Jansson, Ignasi Fernandez, Carlos Gil Berrocal, Rasmus Rempling</i>
12:00	Parametric calculation tool for flexural crack width in concrete slabs assuming seismic damage <i>Alhussain Yousef, Panagiotis Spyridis</i>	Carbonation resistance of recycled aggregate concrete using different cement types <i>Miren Etxeberria</i>	The effect of temperature and ageing on the behaviour of self-compacting concrete containing supplementary cementitious materials <i>Almutlaqah Ayman, Abdullah Alshahrani, Riccardo Maddalena, Sivakumar Kulasegaram</i>	Understanding the degradation of concrete structures during the nitrification process for the treatment of wastewater: a lab biological degradation test <i>Yasmine Werghi, Tony Pons, Marielle Guéguen Minerbe, Marcos Oliveira, Sam Azimi, Vincent Rocher, Thierry Chaussadent</i>	Piezoresistive Self-compacting concretes (PSSC) with carbon fibers (CF) and nano-fibers (CNF) for structural health monitoring <i>Javier Puentes, Irene Palomar, Gonzalo Barluenga</i>
12:15	Calculation of steel stresses in cracked reinforced rectangular concrete elements loaded in bending <i>Anton van der Esch, Rob Wolfs, Simon Wijte</i>	Corrosion kinetics of steel in carbonated pore solutions containing chlorides and sulphates <i>Cristhiana Albert, Shishir Mundra, O. Burkan Isgor, Ueli Angst</i>	Correlations between localized pitting corrosion and deflection in reinforced concrete beams subjected to accelerated corrosion <i>David Dackman, Ignasi Fernandez, Carlos Gil Berrocal, Rasmus Rempling</i>	Development of damage monitoring techniques during fatigue compression test on concrete specimen <i>Laura Kerner, Renaud-Pierre Martin, Mezgeen Rasol, Jean-Claude Renaud, Léopold Denis</i>	Flexural damage evaluation in Fiber Reinforced Concrete Beams using a PZT-based Health Monitoring System <i>George Sapidis, Maria Naoum, Nikos Papadopoulos, Maristella Voutetaki</i>
12:30	Significance of thermal eigenstresses on the risk of cracking due to concrete hardening with focus on ground-slab types <i>Christina Krenn, Dirk Schlicke</i>	The impact of chloride binding on the resistance to carbonation: from single cycle degradation towards the complexity of multi cycle degradation <i>Hanne Vanoutrive, Peter Minne, Özlem Cizer, Elke Gruyaert</i>	Investigation of the mechanical properties and durability of concretes produced with microsilica and crystalline admixtures <i>Kosmas K. Sideris, Eirini Mingou, Christina Solomou</i>	A cost-effective micro-controller based system for EMM-ARM tests in cement paste <i>Renan Rocha Ribeiro, José Granja, Rodrigo Lameiras, Miguel Azenha</i>	Structural health monitoring of reinforced concrete beam-column joints using piezoelectric transducers <i>Maria Naoum, George Sapidis, Nikos Papadopoulos, Emmanouil Goliás, Constantin Chaliotis</i>
12:45	Numerical Simulation for Early-Age Cracking Mitigation in Durable RC Deck Slab on Multiple Span Steel Box Girder Bridges Considering Thermal and Stepwise Construction Stresses <i>Thanh Naoç Phan, Akira Hosoda, Yoichiyo Tsujita, Ayana Shirakawa</i>	Study on properties of UFC cured by autoclaving <i>Junon Yoshikawa, Hiromi Fujiwara, Masanori Maruoka, Kotaro Yoshikawa, Katsuhiko Yamada</i>	An experimental study on the thermo-mechanical properties of cement mortar with textile fibers for building applications <i>Rabeb Ayed, Emiliano Borri, Gemma Gasà, Salwa Bouadila, Luisa F. Cabeza</i>	Open-source emm-arm implementation for mortars based on single-board computer <i>Thomas Russo, Miguel Azenha, José Granja</i>	Rehabilitation of underground garages – risk based decision-making process <i>Juan Mauricio Lozano Valcarcel, Thomas Kränkel, Christoph Gehlen, Angelika Schießl-Pecka</i>
13:00 14:30	LUNCH				

RILEM TC 287-CCS and 281-CCC Special Session: Cracking in RC structures <i>Chairperson: Miguel Azenha and Fragkoulis Kanavaris</i>	Rilem TC 281-CCC Special Session: Carbonation of concrete with supplementary cementitious materials <i>Chairperson: Nele de Belie and Susan Bernal</i>	Data, Machine learning & optimization <i>Chairperson: Ali Abbas</i>	Non-standardised testing techniques <i>Chairperson: Jacqueline Saliba</i>	Supplementary cementitious materials <i>Chairperson: Sandrine Marceau</i>	
ROOM A1	ROOM A2	ROOM B1	ROOM B2	ROOM B3	
Crack-resistance of 25 cements determined by the ring shrinkage test <i>Vít Šmilauer, Pavel Reiterman, Bohuslav Slánský</i>	Carbonation rate of alkali-activated concretes: Effects of compositional parameters and carbonation conditions <i>Gregor Gluth, Xinyuan Ke, Anya Vollpracht, Lia Weller, Susan A. Bernal, Martin Cyr, Katja Dombrowski-Daube, Dan Geddes, Cyrill Grengg, Cassandre Le Galliard, Marija Nedeljkovic, John L. Provis, Luca Valentini, Brant Walkley</i>	Comparison of Machine Learning algorithms for the prediction of the external sulphate attack resistance of blended cements <i>Abdelhamid Hafidi, Benoît Hilloulin, Sonia Decuyper, Erik De Vleeschouwer, Yasmina Boudache, Umunnakwe Rejoice, Ahmed Loukil</i>	Preliminary analysis of non-destructive test methods to evaluate the self-healing efficiency on the construction site <i>Tim Van Mullem, Gerlinde Lefever, Arthur Decuyper, Erik De Vleeschouwer, Yasmina Shields, Laurena De Brabandere, Didier Snoeck, Dimitrios Aggelis, Nele De Belie</i>	Characterizing Sewage Sludge Ashes in Dry and Wet States for use as Supplementary Cementitious Materials <i>Danah Shehadeh, Alexandre Govin, Philippe Grosseau, Hichem Krour, Laetitia Bessette, Gonzague Ziegler</i>	14:30
Cracks detection during early-age concrete hydration using distributed fibre optic sensing: from laboratory to field applications <i>Rafał Sierko, Łukasz Bednarski, Tomasz Howiacki, Kamil Badura</i>	Effect of the carbonate source on the carbonation performance of blended binders containing calcined clays <i>Yuvaraj Dhandapani, Srajan Bhadauria, Sreejith Krishnan, Maria C. G Juenger, Susan A. Bernal</i>	Improved generalization capability in machine learning approaches for hammering test method <i>Hiroshi Shimbo, Toshiaki Mizobuchi, Tomoko Ozeki, Junichiro Nojima, Shunsuke Sano, Masafumi Okamoto, Tomohiro Shizuno</i>	Analysis of concrete transient thermal deformation in the context of structures submitted to various levels of temperature and mechanical loading <i>Robin Cartier, Hugo Cagnon, Thierry VIDAL, Jean-Michel Torrenti, Alain Sellier, Jérôme Verdier</i>	Mineral residues and by-products upcycled into reactive binder components for cementitious materials <i>Florian Roman Steindl, Klaus Doschek-Held, Katharina Weisser, Joachim Juhart, Cyrill Grengg, Dominik Wohlmuth, Florian Mittermayr</i>	14:45
Effect of high temperature at early age and mineral additives on drying shrinkage of concrete with the blast furnace slag cement <i>Tatsuya Usui, Shingo Asamoto, Shintaro Miyamoto</i>	Long-term natural carbonation in concretes with fly ash and limestone calcined clay systems <i>Sundar Rathnarajan, Umesh Hule, Radhakrishna G. Pillai, Ravindra Gettu</i>	Prediction of mechanical properties of steel fibre-reinforced self-compacting concrete by machine learning algorithms <i>Tianyi Cui, Sivakumar Kulasegaram, Haijiang Li</i>	A transient re-touching of carbon fiber to cement interface under single fiber pullout testing with direct current measurement <i>Shaofeng Qin, Jishen Qiu</i>	Clay brick powder as partial cement replacement <i>Ida Bertelsen, Sissel Albrecht Kahr, Wolfgang Kunther, Lisbeth M. Ottosen</i>	15:00
The internal curing effect of pre-saturated light weight aggregate (LWA) on cementitious material <i>Runqi Hao, Kinda Hannawi, Aveline Darquennes</i>	Influence of fly ash as cement substitution on accelerated and natural carbonation of concrete <i>Vedran Carević, Aleksandar Radević, Ivan Ianjatović</i>	Performance of data driven algorithms to predict concrete strength using production raw data <i>Arnaud Delaplace, Ulli Olivetti Razinhas, Régis Bauchard, Andreas Griesser</i>	Thermal gradient in large concrete test bodies: A macroscale experimental approach <i>Thierry Haundonouqbo, Thierry Chaussadent, Loïc Divet, Joao Custodia, Jean-François Seignol</i>	Micromechanical properties assessment of slag blended cements using nanoindentation and scanning electron microscopy <i>Imane Bekrine, Benoît Hilloulin, Ahmed Loukil</i>	15:15
Low Viscosity, High Temperature Stable Geopolymer For Crack Injection And Cavity Filling With Optional Increase Of Volume And Preload <i>Hendrik Morgenstern, Michael Raupach</i>	Comparing the carbonation performances of low-clinker blended slag cement with alkali-activated slag via thermodynamic modelling <i>Xinyuan Ke</i>	An optimum mix design method for 3D concrete printing applications <i>Vasilis Sergis, Claudiane Ouellet-Plamondon</i>	Comparison of different approaches for quantification of amorphous phase in hydrated cement paste by XRD <i>Antonina Goncharov, Semion Zhutovsky</i>	Interfacial transition zone formed on wet-on-wet cast between ultra-high-performance fiber reinforcement concrete - blast furnace slag concrete <i>Kladija Telhaj, Andrzej Cwirzen</i>	15:30
COFFEE BREAK					15:45
RILEM TC 287-CCS and 281-CCC Special Session <i>Chairperson: Miguel Azenha and Fragkoulis Kanavaris</i>		3D printing <i>Chairperson: Semion Zhutovsky</i>	Non-standardised testing techniques <i>Chairperson: Philippe Turcry</i>	Supplementary cementitious materials <i>Chairperson: Vít Šmilauer</i>	
ROOM A1		ROOM B1	ROOM B2	ROOM B3	
Modelling of moisture transport in cracked concrete by using RBSM and TNM <i>Srimook Puttipong, Ippei Maruyama</i>		Development of an innovative 3D-printing process for reinforced concrete – AMoRC method <i>Sisi Zhang, Matthias Kalus, Sven Engel, Josef Hegger, Martin Claßen</i>	New repair approach using ultra high performance fibre reinforced concrete for structures affected by alkali aggregate reaction <i>Clélia Desmettre, Jean-Philippe Charron, Sarra Abid</i>	Recycling potential of cellular lightweight concrete insulation as supplementary cementitious material <i>Jan Suchorzewski, Natechanok Chitvoranund, Sumit Srivastava, Miguel Prieto, Katarina Malaga</i>	16:15
An Analytical Approach for Calculating Crack Width of RC Members: Pure Shear Method <i>Karolis Sakalauskas, Gintaris Kaklauskas</i>		Reducing the carbon footprint of thin walled concrete structures by 3D printing topology optimized prefabricated elements <i>Marc-Patrick Pflieger, Sebastian Geyer, Christian Hölzl, Markus Vill</i>	Monitoring of Capillary Pressure Evolution in Young Age Concrete using High Capacity Tensiometers <i>Armin Jamali, Joao Mendes, Brabha Nagaratnam, Michael Lim</i>	Development of low carbon textile reinforced concrete from composite cements <i>Mohammad Alma'aitah, Bahman Ghiassi</i>	16:30
Influence of blended cements on the service life of reinforced concrete structures against carbonation induced corrosion <i>Kosmas K. Sideris, Panagiota Manita</i>		3BUILD – First 3D printed structure in Greece <i>Marios Katsiotis, Vasileios K. Michalis, Despoina Papargyriou, Emmanouil Mavratzotis, Martha Savvidou, Theodoros Mavrelas, Despoina Almpani, Ioannis Tsilikas, Christos Kalligeros, Georgios Vasileiou, Athina Stavridou, Vasileios Spitas</i>	Effect of Moisture on the Piezoresistive Properties of Aluminosilicate-Based Building Materials <i>Pavel Rovnaník, Iva Kusák, Pavel Schmid, Libor Topolář</i>	Influence of rice husk ash on rheology of conventional concrete <i>Arshdeep Singh, Bhupinder Singh</i>	16:45
Insight from modeling service life of low-clinker cements at moderate relative humidity under carbonation attack <i>Dudi Lupesh, Shashank Bishnoi</i>		Natural fibers for 3D printable eco-ECC material <i>Fernando Fernández, Rocío Jaraba, Eloy Asensio, Ana Guerrero</i>	A Literature Review of Shrinkage in Repair Materials with Fine Materials <i>Luan Reginato, Étore Funchal de Faria, Ana Carolina Parapinski Santos, Luís Antonio Sucupuca Aracayo</i>	The effect of ladle furnace slag (LFS) content replacement as a supplementary cementitious material in Portland cement-based systems <i>Paulo Araos, Anna Uribarri, Marilda Barra, Diego Aponte</i>	17:00
ROOM A1					
Closing session: Agnieszka Jędrzejewska, Fragkoulis Kanavaris, Miguel Azenha, Farid Benboudjema and Dirk Schlicke					17:15 17:45

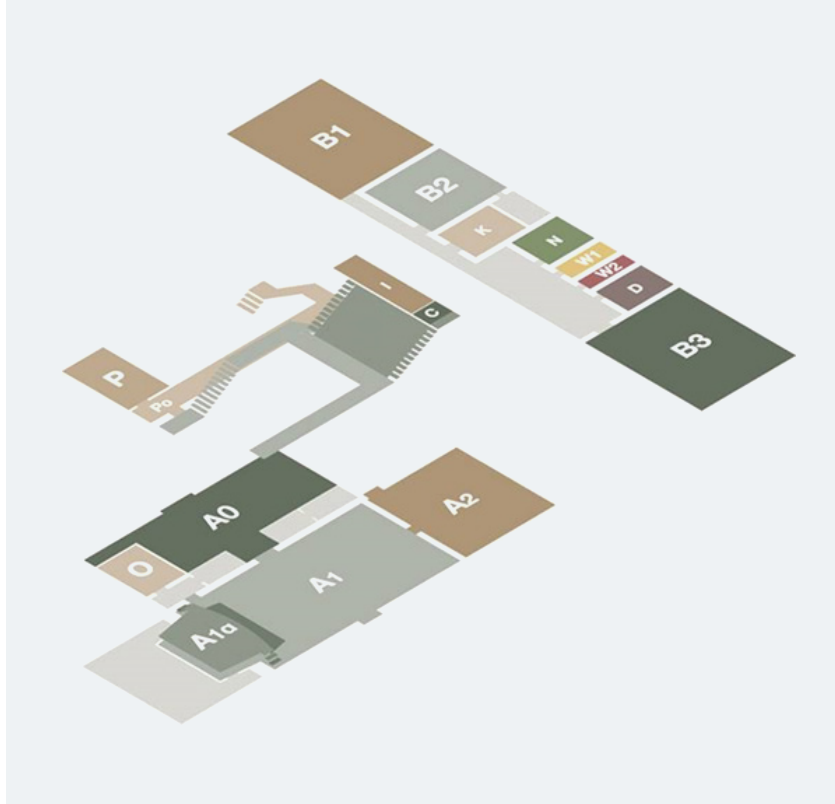
CONFERENCE VENUE MAP

(OVERVIEW)

SynerCrete'23 is hosted at the **Milos Conference Centre – George Eliopoulos**, located in Adamas, Milos Island's main port.

The Milos Conference Center is housed in a restored old kaolin processing plant, built in 1925, overlooking the gulf of Milos.

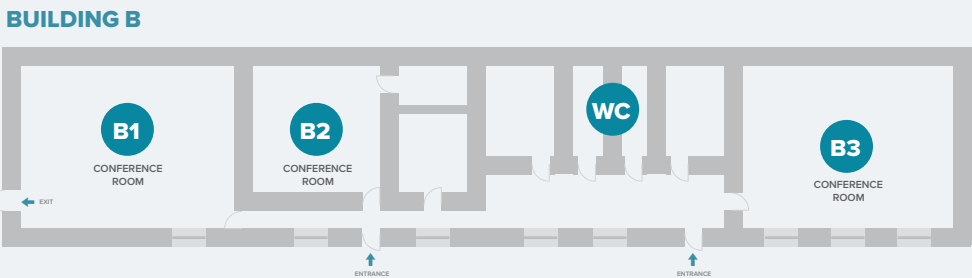
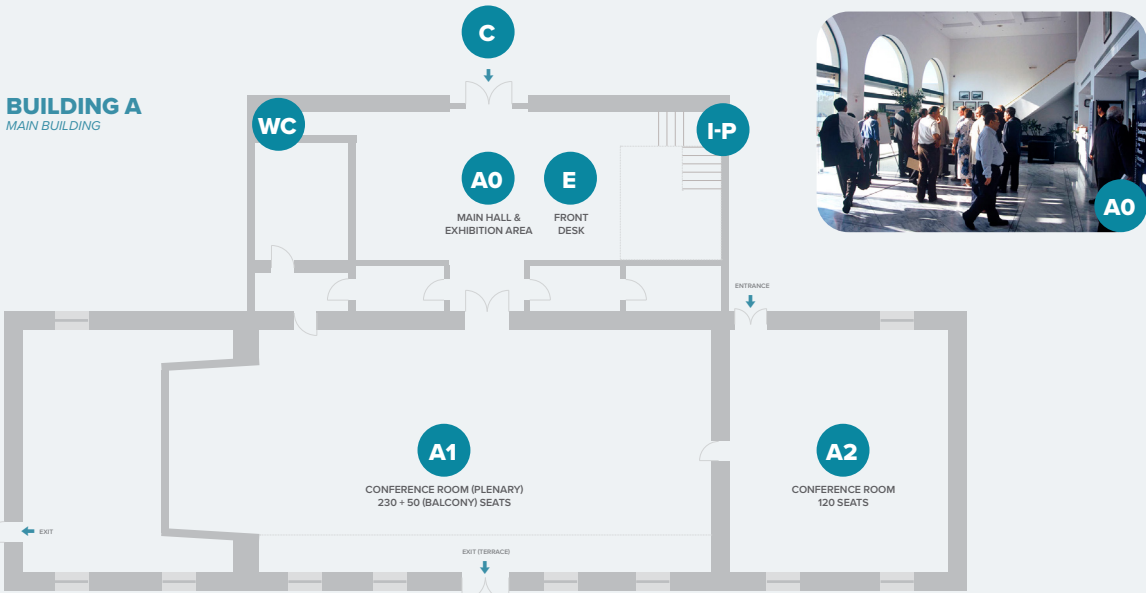
It is an excellent sample of its period's industrial architecture.



(DETAILED LAYOUTS)

LEGEND

- A** BUILDING A
MAIN BUILDING
- B** BUILDING B
- C** ENTRANCE
- D** TERRACE
- E** FRONT DESK
- G** LUNCHES AND COFFEE
- A0** ROOM A0
MAIN HALL & EXHIBITION AREA
- A1** ROOM A1
CONFERENCE ROOM (PLENARY)
- A2** ROOM A2
CONFERENCE ROOM
- B1** ROOM B1
CONFERENCE ROOM
- B2** ROOM B2
CONFERENCE ROOM
- B3** ROOM B3
CONFERENCE ROOM
- I-P** ROOMS I AND P
UPSTAIRS



GENERAL PRACTICAL INFORMATION

PUNCTUALITY AND SYNCHRONISATION

The program of the conference is very tight. Efficient functioning of the program depends on the *punctuality* of delegates and speakers. Please cooperate.

As it happens in all conferences, there may be a need for issuing warnings to conference delegates (e.g. next session starts 10 min late). We will keep a constantly updated news feed in:

www.synercrete.com/lastinfo

REGISTRATION AND DOCUMENTATION

The registration desk is open on Wednesday 14th June 2023 from 10h00m to 19h00m for collection of conference badges and bags. On Thursday 15th and Friday 16th, the registration desk is open from 8h00m to 18h00m.

WI-FI AND PARALLEL MEETINGS OR WORK

Wi-fi access is free throughout the entire conference venue.

If you wish to have a meeting or work for some moments, you can use either room P in Building A or room N in Building B. Please mind that we cannot guarantee exclusivity of these rooms without prior agreement with the Organising Committee.

LUNCHES AND COFFEE BREAKS

Lunches and coffee breaks are served in the dedicated enclosed palce with a tent roof in the vicinity of Building B.

Access to the lunches and coffee breaks is given to all conference delegates, provided that the conference badge is brought. If you do not bring your conference badge, you may be requested for proof of registration.

SMOKING

Smoking is not permitted within interior spaces. Outdoor smoking is allowed.

GROUP PHOTO

We are taking a group photo at 16h15m of 15th June 2023 (during the afternoon coffee break) at the front terrace of Building A.

Be sure to show up!

SUBMISSION OF PRESENTATION

Each conference room will be equipped with a notebook (Windows-based) and a video projector. If you have not yet uploaded your presentation via a designated link, you are asked to provide it at the front desk upon your registration.

Acceptable formats:
PPTX (PowerPoint 2007/2010/2013/2016) or PDF.

BADGE TYPES

Conference badges are customised, so as to allow clear identification of people that play particular roles in the conference: Chair, Organiser, Keynote speaker, Regular delegate, Student delegate, Sponsor and Technical support.

CONTACTS

The organisation is willing to assist you at all times. Feel free to contact us in case of need.

For conference secretariat matters, contact the front desk staff.

For general local organisational matters, contact:

Fragkoulis Kanavaris:
+30 697 1671 561 (Greece)
+44 79 2324 3721 (UK)

For any further matters, contact:

Agnieszka Jędrzejewska: +48 505 493 027 (Poland)
Miguel Azenha: +351 938 404 554 (Portugal)
Farid Benboudjema: +33 601 801 915 (France)
Dirk Schlicke: +43 660 458 695 6 (Austria)

The general emergency number (e.g. medical, fire) in Greece is **112**.

WELCOME COCKTAIL AND CONFERENCE DINNER

WELCOME COCKTAIL

All conference delegates are invited to the welcome cocktail, which will take place on Wednesday, 14th June 2023, from 19h to 21h in Milos conference centre. Be sure to bring your badge, that serves also as your 'invitation' for this concern. The cocktail will take place at the conference venue. The conference organisation gratefully acknowledges the support of the 'Municipality of Milos island' in this welcome cocktail and the arrangement of an exhibition relevant to the history, tradition and geology of the Milos island.

DRESS CODE: Smart casual.



CONFERENCE DINNER

The conference dinner access is limited to the conference delegates holding the "Gala Dinner voucher" (given together with the conference material at the registration desk). Make sure that you do not forget the voucher for yourself and all your accompanying persons, as it will represent your 'dinner invitation'.

The conference dinner takes place at 'Kipos' venue, a fabulous tavern placed on the top of the hill with an amazing view over the Kipos beach, mesmerising with its crystal-clear turquoise waters. The restaurant offers traditional Greek and Mediterranean cuisines, including kleftiko, dakos and fish. A taste of local folk music will be given by the music duo of the Milos Cultural Centre.

'Kipos' venue is located 10 km / 15 mins drive from the conference venue and provisions have been taken to ensure transportation by bus. Please be at the Milos Conference Center entrance at 18h15m, and board the conference bus according to availability. Return transportation will also be provided between 22h30m and 23h30m.

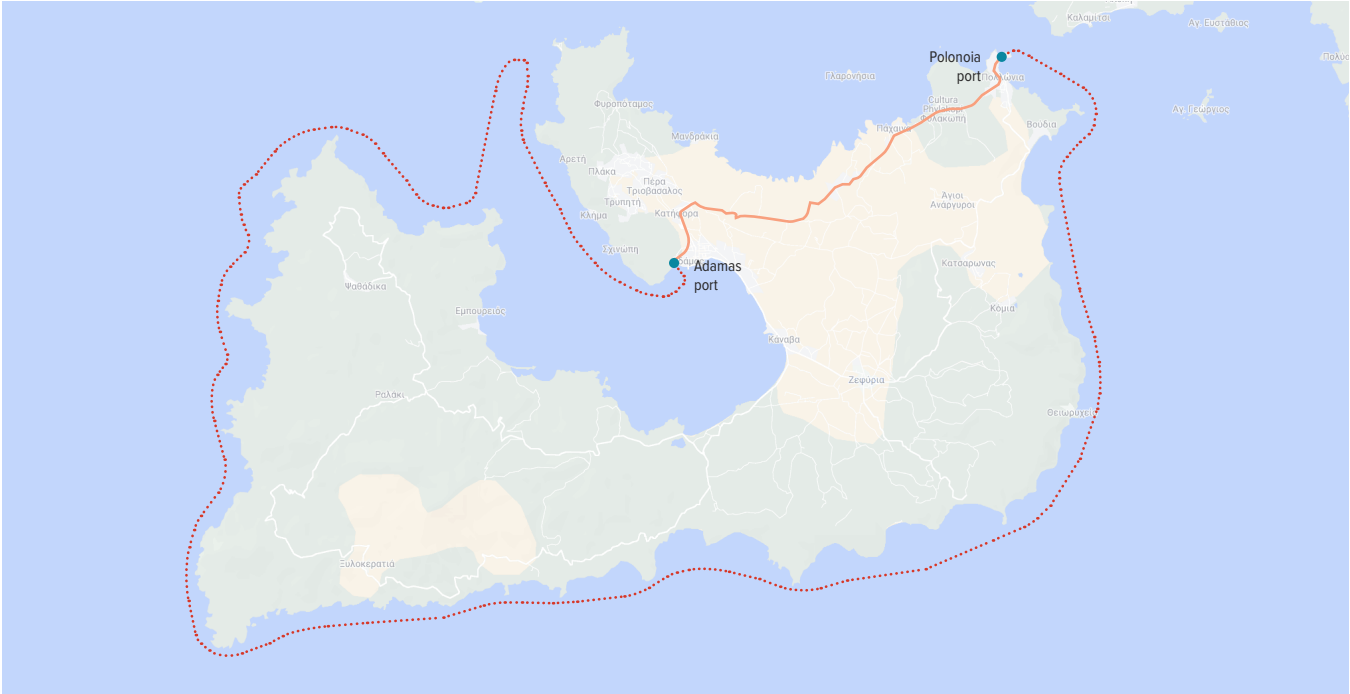


POST-CONFERENCE TOUR

THE BOAT TOUR AROUND THE MILOS ISLAND

The boat tour is designed to take approximately 5 hours and visit via sea the most beautiful spots of Milos island. The boat will be navigated by experienced Captain Stavros, who will guide us for the entire trip, and the boat crew will be by your side to aid and serve you with whatever you may need for a pleasurable and safe outing. The boat also encompasses toilet facilities and smoking area. Snacks (sandwiches) and refreshments (soft drinks) will be provided during the boat trip.

The tour includes setting off from Adamas port at 9h and disembarkation at Polonoia port at 14h (red route). From there, the group will embark on coaches and be brought back to Adamas port (orange route) with an arrival time of approximately 14h30m.



Syner '23 Crete

