FRPRCS17

17TH INTERNATIONAL SYMPOSIUM ON FIBER-REINFORCED POLYMER (FRP) REINFORCEMENT FOR CONCRETE STRUCTURES

6-8 JULY 2026
GIRONA, SPAIN

International Institute for FRP in Construction
Universitat de Girona
UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH
Universitat de les Illes Balears
University of Sheffield


FRP
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Contents

1. Message from the president of IIFC

It is my great pleasure to welcome you to the 17th International Symposium on Fiber-Reinforced Polymer Reinforcement for Concrete Structures (FRPRCS17), hosted in the beautiful and historic city of Girona, Spain.

As one of the flagship conferences of the International Institute for FRP in Construction (IIFC), the FRPRCS series has long served as a premier international forum for advancing knowledge, innovation, and practice in the use of FRP reinforcement and strengthening systems for concrete structures. Since its inception, FRPRCS has brought together researchers, engineers, practitioners, and industry leaders from around the world to exchange ideas, share discoveries and foster collaborations that continue to shape the future of our field.

The program of FRPRCS17 reflects the remarkable progress being made in FRP technologies and their growing role in creating more durable, resilient, and sustainable infrastructure. Through keynote lectures, technical sessions, and opportunities for discussion and networking, participants will explore the latest developments in research, design, construction, and implementation.

This year's symposium is particularly noteworthy for several initiatives that strengthen our community and celebrate excellence within the field. We are honored to inaugurate the "Sami Rizkalla IIFC Lecture", established to recognize the extraordinary and transformative lifetime contributions of Professor Sami Rizkalla to FRP research, education, and practice. The inaugural lecture will be delivered by Professor Jin-Guang Teng, whose pioneering work has had a profound impact on the advancement of FRP structures worldwide. In addition, a special session organized in honor of Professor Rizkalla will feature contributions from leading researchers and practitioners on the advancement of FRP research and applications across the globe.

FRPRCS17 also introduces the first "Women in FRP Session" that highlights and celebrates research excellence, contributions and leadership of women within our community. A dedicated "Young Researcher Event" will provide opportunities for networking, mentorship, and engagement with the next generation of leaders in FRP for construction. A "Meet the Editors Session" will offer valuable insights into scholarly publishing in some of the most prestigious journals in our field. We will also recognize outstanding research achievements through the presentation of the "RILEM Best Paper Award".

On behalf of IIFC, I extend my sincere appreciation to the organizing committee, volunteers, sponsors, and contributors whose dedication and hard work have made this symposium possible. I wish you a productive, inspiring, and enjoyable FRPRCS17, and I look forward to the knowledge, collaborations, and friendships that will emerge during our time together in Girona.

Amir Fam

President, International Institute for FRP in Construction (IIFC)

2. Message from the FRPRCS17 chairs

It is our great pleasure to welcome you to the 17th International Symposium on Fiber-Reinforced Polymer Reinforcement for Concrete Structures - FRPRCS17 - the oldest conference of the International Institute for FRP in Construction (IIFC).

The Organizing Committee has worked tirelessly to develop a comprehensive and engaging technical and social programme that upholds the long-standing tradition of excellence established by the FRPRCS series.

The conference will be held at the Convent of Sant Domènec of the University of Girona, from July 6 to 8, 2026, in the historical and charming city of Girona.

The conference programme features a wide range of scientific and professional activities, including: (i) keynote lectures delivered by internationally recognized experts, from which we highlight the launch of the IIFC Sami Rizkalla lectures; (ii) regular parallel technical sessions; (iii) special sessions dedicated to emerging and specialized topics; (iv) the Early Stage Researchers' event, focused on career perspectives and opportunities for the next generation of researchers and professionals in the field; (v) the Women in FRP session, a special plenary event celebrating and promoting the contribution of women in FRP research and practice; (vi) the Meet the Editors session, where editors from leading international journals will share guidance and practical advice on academic publishing and scientific writing; (vii) conference award initiatives, including the IIFC Best Paper Award and the RILEM Best Paper Award for Young Researchers, and (viii) technical visits to outstanding engineering and construction projects in Barcelona.

At the end of the first day, we are delighted to invite you to the FRPRCS17 Welcome Reception, hosted at Cultural Centre La Mercè.

On the evening of the second day, we welcome you to the FRPRCS17 Conference Dinner at the Hotel La Gavina, located in the exclusive coastal area of S'Agaró on the renowned Costa Brava.

We express our sincere appreciation to all authors, keynote speakers, participants, committee members, and sponsors for their valuable contributions and support.

We sincerely hope that your participation in FRPRCS17 will be both professionally rewarding and personally memorable. We wish you an enjoyable stay in Girona and trust that the symposium will provide valuable opportunities to advance your research, exchange ideas, strengthen collaborations and establish new professional connections.

Cristina Barris
Universitat de Girona

Eva Oller
Universitat Politècnica de Catalunya BarcelonaTech

Antoni Cladera
Universitat de les Illes Balears

Maurizio Guadagnini
The University of Sheffield

3. Committees

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YU, Qian-Qian. Tongji University, China
YU, Tao. Hong Kong Polytechnic University, China, Hong Kong

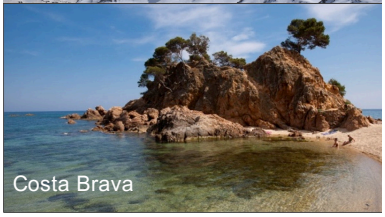
4. About Girona

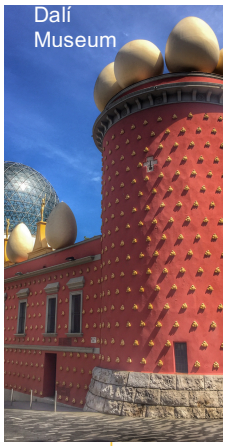
Girona is a charming Mediterranean destination where history, culture and quality of life come together in a truly unique setting. Located in northeastern Catalonia, on the banks of the Ter and Onyar rivers, Girona is a vibrant yet walkable city of around 100,000 inhabitants, known for its welcoming atmosphere and its rich heritage shaped over more than 2,000 years.

Founded by the Romans, Girona preserves an extraordinary historic centre that feels like an open-air museum. Visitors can explore its impressive Cathedral, stroll along the ancient city walls, and wander through one of the best-preserved medieval Jewish quarters in Europe. The city's colourful riverside houses, lively squares, and excellent gastronomy make it a memorable place to discover.

SURROUNDINGS

Beyond the city, the province of Girona offers an exceptional variety of landscapes and world-famous attractions. To the east lies the Costa Brava, a spectacular coastline stretching over 200 kilometres, where hidden coves, crystal-clear waters and dramatic cliffs alternate with picturesque fishing villages and renowned seaside resorts. To the north, at the foothills of the Pyrenees, the region of Alt Empordà is home to the Dalí Theatre-Museum in Figueres—one of Spain's most visited museums—as well as the remarkable Greek and Roman ruins of Empúries.





Inland, nature lovers can enjoy the volcanic landscapes of La Garrotxa, one of Europe's most important volcanic areas, or visit the peaceful Lake Banyoles, famous for hosting rowing events during the 1992 Olympic Games. Further north, the Pyrenees offer forested mountains and valleys, with opportunities for hiking in summer and skiing in winter.

With its strategic location—less than an hour from Barcelona and the French border—Girona is the perfect gateway to explore the cultural and natural treasures of Catalonia. Whether you are drawn by history, seaside beauty, or mountain landscapes, Girona and its surroundings promise an unforgettable experience.

5. Map of the city

Important places

The conference will take place at the Convent of Sant Domènec and the Faculty of Humanities of the Universitat de Girona (E). The map below highlights the locations of the train station (A), hotel Carlemany (B), which will host the registration desk on Sunday, July 5, the bus meeting point for the Gala Dinner and technical visits (C), and the Cultural Centre La Mercè (D), where the Welcome Reception will be held on July 6.

A Train & bus station

Plaça d'Espanya s/n
17002 Girona

B Hotel Carlemany

Plaça Miquel Santaló i Pavor, 1
17002 Girona

C Bus meeting point

Plaça Poeta Marquina
17002 Girona

D Cultural Centre La Mercè

Pujada de la Mercè, 12
17004 Girona

E Conference venue

Plaça de Sant Domènec, 11
17004 Girona

Taxi

Gitaxi: +34 972 222 323
Scan the code to download the app

Public transport

There is a bus stop in front of the Faculty of Humanities called "UdG Campus Barri Vell". Line 7 (pink)
Scan the code for the bus routes.

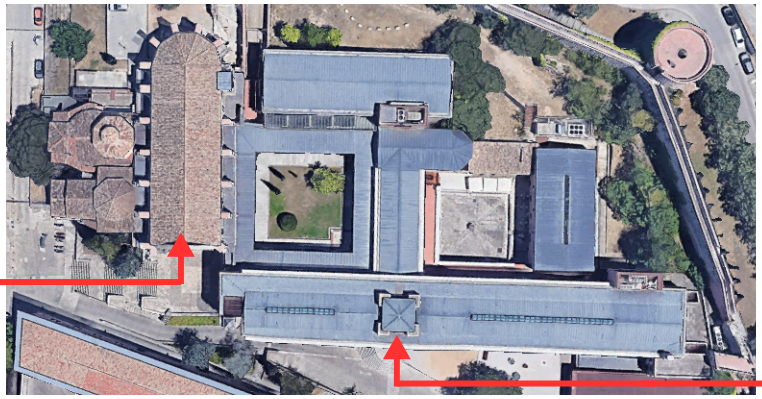
Walking distances:

- A - B: 7 minutes
- A - C: 4 minutes
- A - D: 15 minutes
- A - E: 23 minutes

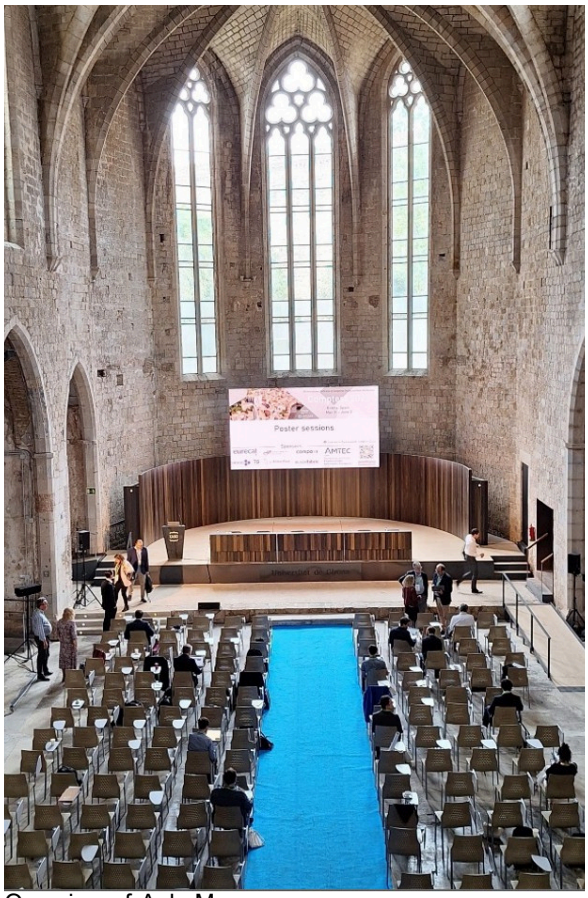
6. Conference venue

The conference will be held at the Convent of Sant Domènec and Faculty of Humanities of the Universitat de Girona, located next to the Middle Ages city wall, at the old town of Girona, in the former XIII century gothic convent of Sant Domènec.

Main entrance: Registration Desk & Aula Magna



Entrance to Humanities Faculty & Cloister

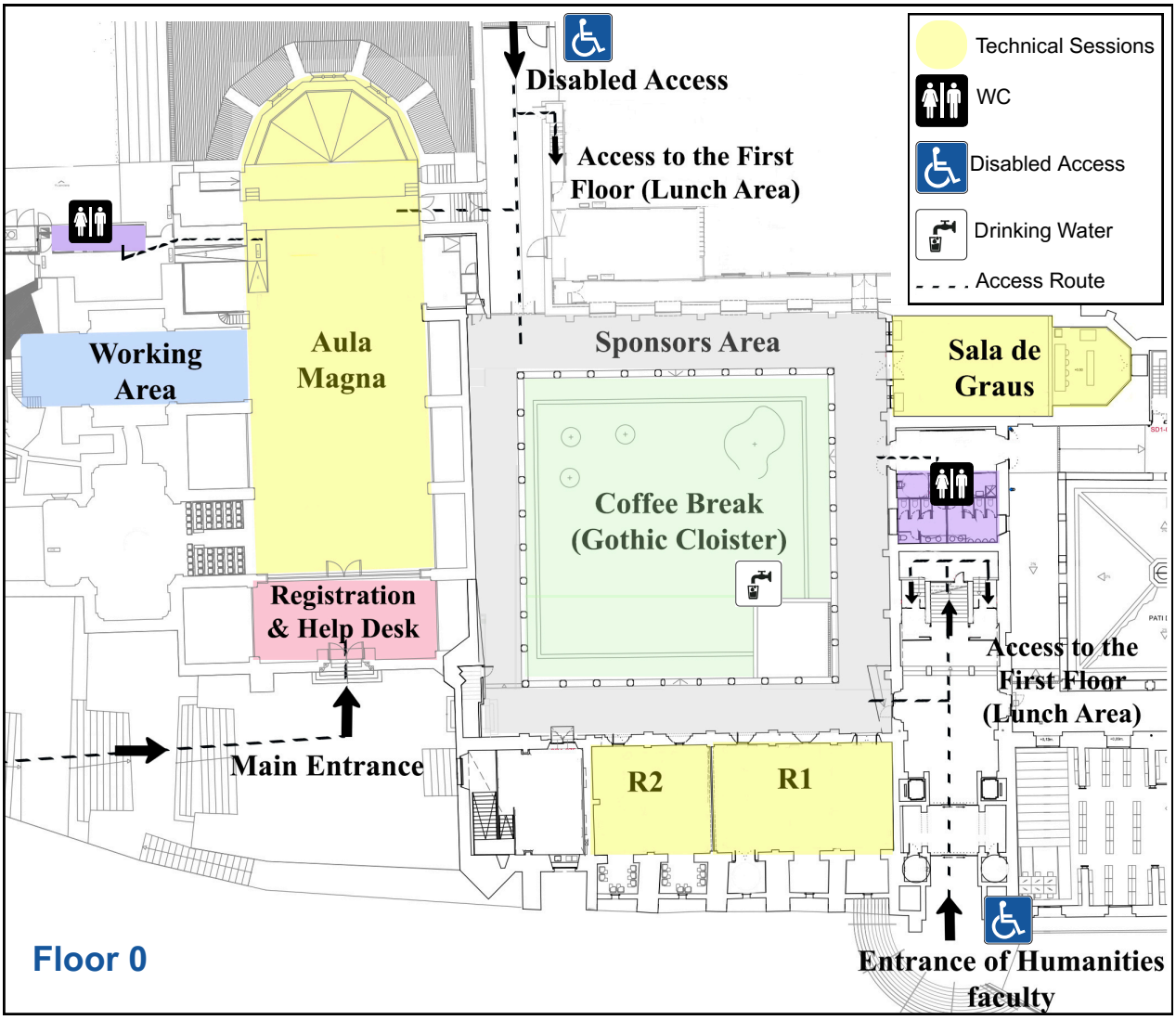


Overview of Aula Magna

Main entrance to Aula Magna

Gothic Cloister (Coffee break and Sponsors area)

7. Technical Programme information



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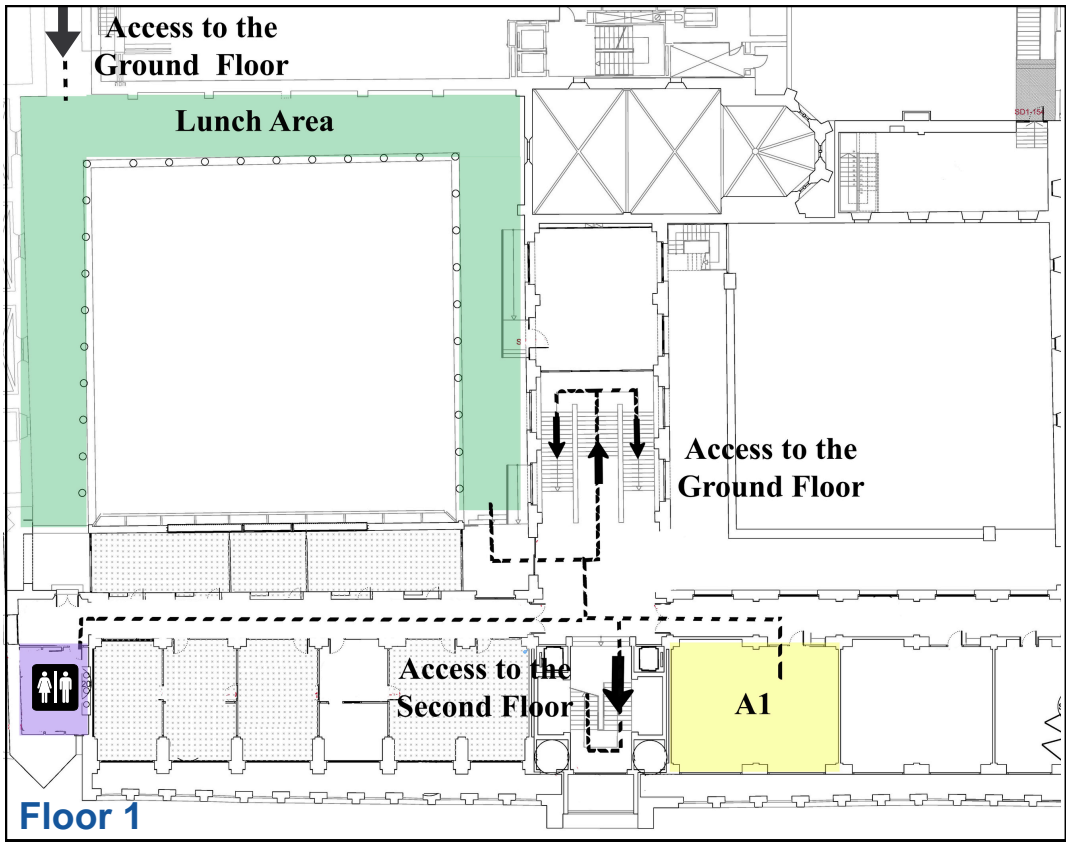
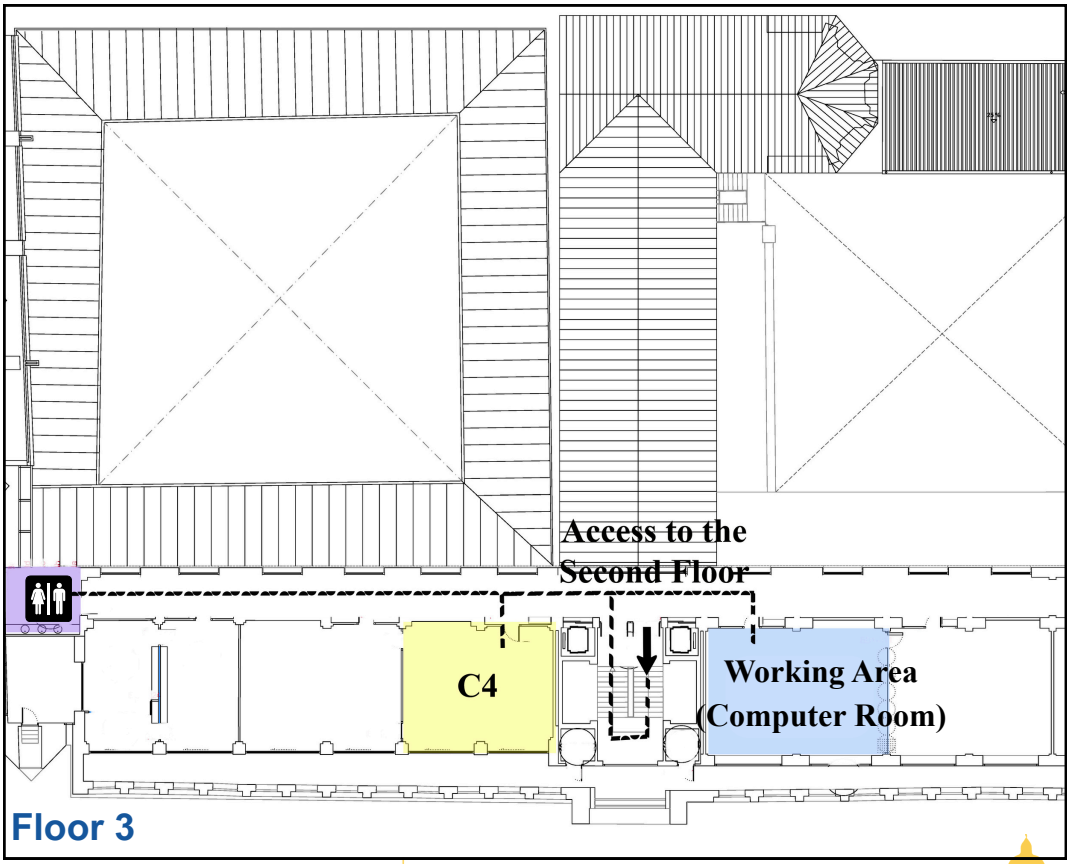




8. Mobile App: Conference4me

To ensure you have easy access to all the information related to FRPRCS17, we recommend using the Conference4me mobile App. It provides schedules, updates, and event details at your fingertips

How to get started:

Download the App

Get it on Google Play Download on the App Store or scan this QR code:

- Open the App and if necessary Search for “FRPRCS17” Once installed, launch the App and search for FRPRCS17 to access the conference details

9. Certificates

Certificates of presentation and attendance will be sent to all participants, by email, after the event.

10. Wi-Fi Access

Free Wi-Fi is available to all participants:

- **eduroam users:** If you have eduroam credentials, you can connect for free using your existing login.
- **Other participants:** Please register at the UdG by scanning the following QR code:

Registration link

Support manual

11. Sami Rizkalla lecture

The International Institute for FRP in Construction (IIFC) is proud to announce the establishment of the Sami Rizkalla IIFC Lecture, recognizing one of the true pioneers in the field of FRP in civil engineering.

Professor Sami H. Rizkalla, Distinguished Professor Emeritus at North Carolina State University, has tremendously helped shaping the global landscape of FRP composites in construction for almost four decades through his scholarship and leadership in the field. From founding FRP International, the forerunner of the IIFC Newsletter, years before establishing the Institute itself, to mentoring generations of engineers and researchers worldwide, Professor Rizkalla's influence has defined both the field advancements and the community of FRP in construction.

This new lecture to be delivered at every FRPRCS conference reflects the continued leadership of IIFC in shaping the global conversation on innovative, sustainable, and resilient construction using FRP technologies, and pays tribute to the remarkable contributions of Prof. Sami Rizkalla - a pioneer, mentor, and visionary whose work continues to inspire the global FRP community.

We are especially pleased to share that the inaugural Sami Rizkalla IIFC Lecture will take place on Monday July 6, at 9:30 at the Aula Magna.

FRP Composites in Construction: A Personal Journey of Three Decades and the Potential of FRP as a Mainstream Structural Material

July 6, 9:30-10:30, Aula Magna

Prof. Jin Guang Teng (The Hong Kong Polytechnic University)

Professor Teng is a Member of the Chinese Academy of Sciences, an International Fellow of the Royal Academy of Engineering, an International Fellow of the Royal Society of Edinburgh, a Member of the Hong Kong Academy of Sciences, and a Fellow of the Hong Kong Academy of Engineering. Professor Teng assumed office as President of The Hong Kong Polytechnic University (PolyU) on 1 July 2019.

A distinguished scholar in the field of structural engineering, Professor Teng has published one book and over 230 SCI journal papers. His publications have been widely cited by researchers globally: on the Stanford University list of top 2% most-cited scientists, Prof. Teng has ranked 7th or 8th globally and first or second among all Chinese scholars in the field of civil engineering from 2019 to 2025 based on career-long citation impact. Furthermore, many of his research findings have been adopted in relevant design codes or guidelines in China, the United States, Europe, the United Kingdom and Australia, thereby helping engineers around the world produce safe and cost-effective structural designs.

Among the many awards he has received are the State Natural Science Award of China (Second Class), the Distinguished Young Scholar Award from the National Natural Science Foundation of China, and the inaugural IIFC Medal from the International Institute for FRP in Construction (IIFC).

12. Keynote speakers

Enhancing Fatigue Service Life of Aging Concrete Bridges Using FRP

July 7,11:00-11:45, Aula Magna

Prof. Lijuan (Dawn) Cheng (University of California, Davis)

Dr. Cheng is a Professor of Structural Engineering in the Department of Civil and Environmental Engineering at University of California – Davis. She received her Ph.D. from the University of California, San Diego. Dr. Cheng is a member of the American Concrete Institute, American Society of Civil Engineers, and International Institute for FRP in Construction. She has been serving as the associate editor for the ASCE Journal of Composites for Construction and the founding editor for the IIFC Practice Notes publications. Her research focuses on addressing challenging transportation needs and improving longevity and safety of existing structures in addition to construction of next generation resilient civil infrastructures. She is a recipient of various awards, some of which include the Outstanding ASCE Faculty Advisor Award in the State of California and UC Davis Hellman Fellow Award.

Advanced Solutions Using Composites for Seismic Loss Reduction

July 8,11:30-12:15, Aula Magna

Prof. Marco di Ludovico (University of Naples Federico II)

Prof. Marco Di Ludovico is a Full Professor of Structural Engineering at the University of Naples Federico II, where he is currently responsible for the quality control of the Full Scale Tests Laboratory of the Department of Structures for Engineering and Architecture (DiSt) at CeSMA - Center of Advanced Measurement Services. He holds the courses of Structural Engineering Part II, Materials and Structures Mechanics, and innovative Building Materials. He is the author of more than 350 scientific papers published in journals or proceedings of national and international conferences. The research activities deal with theoretical and experimental aspects of the following topics: non-linear behavior of reinforced concrete and masonry structures; structural vulnerability, post-earthquake damage and repair costs; repair, strengthening, and seismic retrofit of concrete and masonry structures with composites; response of buildings under tsunami-induced loads; protection of historical monumental buildings.

He currently participates in National and International Scientific Bodies: WG “Learning from Earthquakes” by EERI; EAEE WG 1 (EC8) Future Directions for Eurocode 8; fib TG 5.1 'FRP Reinforcement for Concrete Structures'; IIFC; ACI technical subcommittees on the use of composite materials; CNR working groups on the development of technical documents on the use of composite materials.

13. Plenary Events

Monday, July 6, Aula Magna

14:15 - 15:30 Meet the Editors

Editors from some of the most prestigious journals in the field will share tips and strategies for successful academic writing. This session, moderated by Eva Oller, will be particularly valuable for young researchers and PhD students, while also offering insights for academics at all career stages. Participants will have the opportunity to engage directly with editors and learn more about key aspects of scientific publishing.


Nassif Hani


Fabio Matta


Giovanni Plizzari


Carlos Thomas


Luc Taerwe


Tao Yu

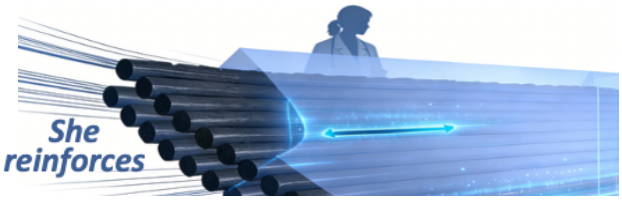
Tuesday, July 7, Aula Magna

14:00 - 14:45 Young Researchers' Event

A dedicated session exploring career perspectives and trajectories for the next generation of FRP experts. Niki Trochoutsou (Chair of the RILEM Youth Council), Jovan Tatar (Secretary of IIFC), and Marta Del Zoppo (fib Young Members Group) will participate in a round-table discussion moderated by Sándor Sólyom, sharing their experiences and perspectives on how engagement in international professional and technical organizations can help shape and accelerate academic and research careers.

13. Plenary Events

Tuesday, July 7, Aula Magna



14:45 - 15:45 Women in FRP

As part of FRPRCS17, the "Women in FRP" session marks the first event dedicated to women in the history of the IIFC conference series. Under the theme "She Reinforces", the session will provide a forum for networking, discussion, and professional development within the FRP community. Opening remarks will be delivered by Lili Hu and Cristina Barris. Short presentations by Qian-Qian Yu, Francesca Ceroni, and Maria Lopez de Murphy will be followed by a round-table discussion moderated by Lijuan (Dawn) Cheng, with panelists Qian-Qian Yu, Francesca Ceroni, Maria Lopez de Murphy, and Rebecca Gravina.

The session will explore experiences, challenges, and opportunities for women in FRP research and practice, while fostering dialogue, mentorship, and new collaborations across the international community. Scheduled separately from the technical sessions, this event offers all conference participants an opportunity to engage in an open and inclusive dialogue. Men are warmly welcome to attend!

14. Publications

Conference proceedings

In the context of FRPRCS17, the publications take the following forms:

- **eBook of Abstracts** available for the conference (Pre-conference).
- **eBook of Proceedings published by Springer (Postconference).** Free access to the eBook of Proceedings will be available for 4 weeks to all authors and conference participants, allowing free navigation in the e-contents and permanent download of the PDFs of the papers. The papers will be indexed in Scopus and Ei-Compendex.

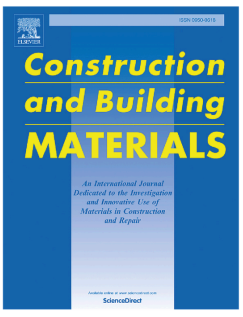
Springer

- **eBook of Proceedings edited by the Organizing Committee,** as a collection of the authors' final versions of the papers, which will be available on the IIFC website (for IIFC members only, and after a one-year embargo).

Special Issues

Special issues will be organized with selected papers presented at the conference. The following journals have agreed to organize such special issues, in which selected papers will be subjected to a normal peer-review process:

- Construction and Building Materials
- Journal of Composites for Construction



15. Social events

Conference Welcome Reception at the Cultural Centre La Mercè

Monday, July 6

19:00 – 21:00

The Cultural Centre La Mercè, located in the heart of Girona, is a vibrant cultural venue housed in a former 14th-century convent. Carefully restored, it preserves its historic architecture while serving as a dynamic space for exhibitions, music, and performing arts.
A standing dinner will be served during the reception.

LOCATION MAP

Conference Dinner at La Gavina (S'Agaró, Costa Brava)

Tuesday, July 7

20:00 – 22:30

La Gavina in S'Agaró is an elegant seaside venue, surrounded by Mediterranean gardens and overlooking the Costa Brava's crystal-clear waters. Known for its refined atmosphere and spectacular views of Sant Pol bay, it offers a perfect blend of classic charm and coastal sophistication.

LOCATION MAP
(MEETING POINT FOR BUS)

Bus departure point: Plaça Poeta Marquina, Girona
Bus departure time: 19:00h

16. Technical visits

Three technical visits are organized to Barcelona on the afternoon of July 8.

Bus transport is arranged to take you from Girona to your selected technical visit in Barcelona and will return to Girona at the end of the visit.

Participants have the flexibility to either stay in Barcelona or return to Girona.

For those choosing to remain in Barcelona after the visit, you can store your luggage on the bus during the technical visit, you must retrieve it before the coach returns to Girona.

LOCATION MAP
(MEETING POINT
FOR BUS)

Visit to the construction works of Barcelona Metro Line 8

The extension of the L8 line of FGC (Baix Llobregat Metro) will connect Plaça Espanya with Gràcia, creating 4 km of new tunnel and three new stations to link the Llobregat and Vallès lines.

Bus departure time: 15:30 h
Visit starting time: 17.00 h

Visit to Sagrada Família

The Sagrada Família represents one of the most innovative works in construction history. Designed by Antoni Gaudí, it combines advanced structural concepts with complex geometries and craftsmanship. Now largely completed, with its main structures finished and key towers nearing completion, it also serves as a living example of how traditional techniques integrate with modern technologies. The visit is especially significant in 2026, marking 100 years since the death of Gaudí.

Bus departure time: 16:00 h
Visit starting time: 17.30 h

Due to requirements of the institution, details of the third technical visit will be given during the conference.

Bus departure time: 15:30 h
Visit starting time: 17.00 h

17. Sponsorships

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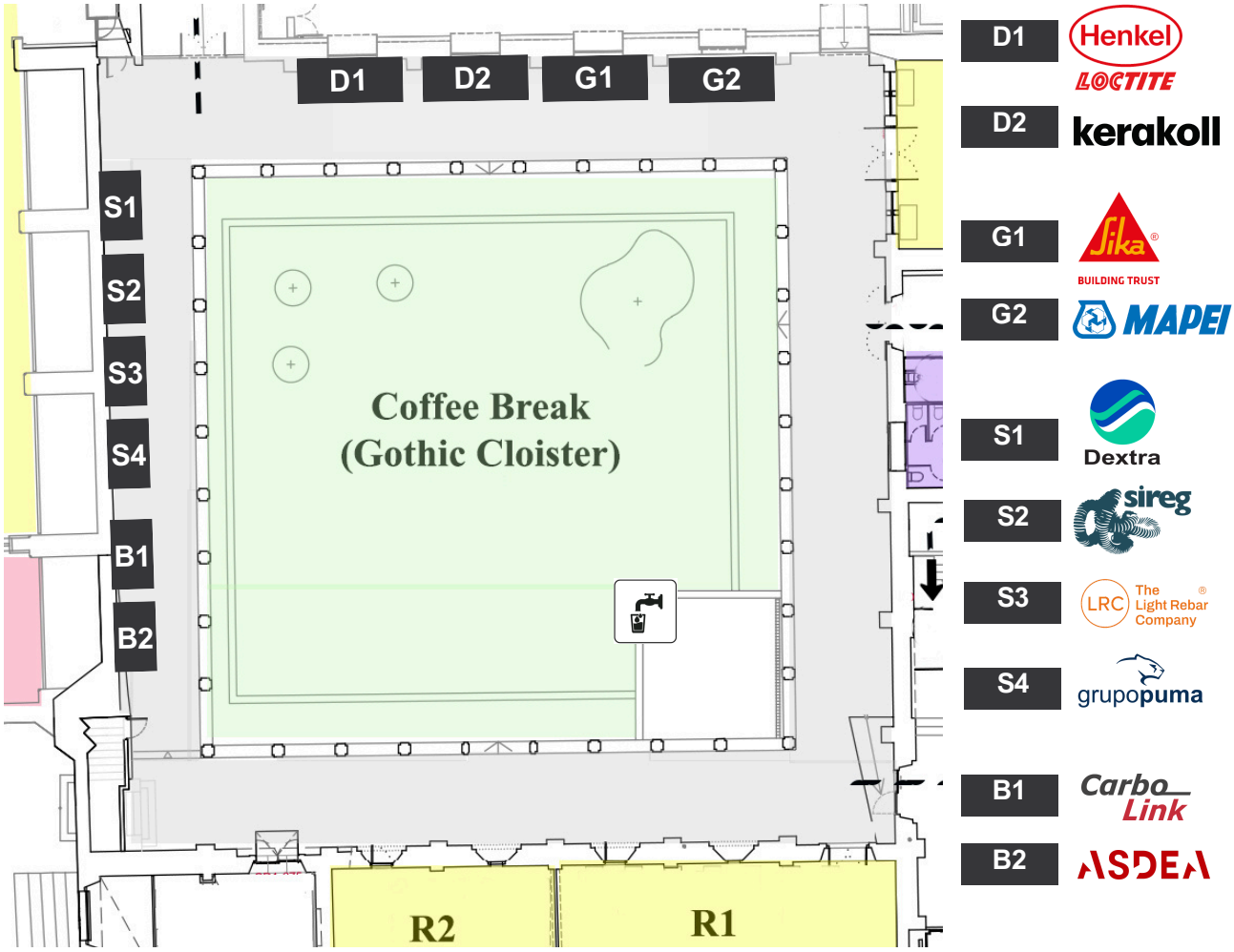

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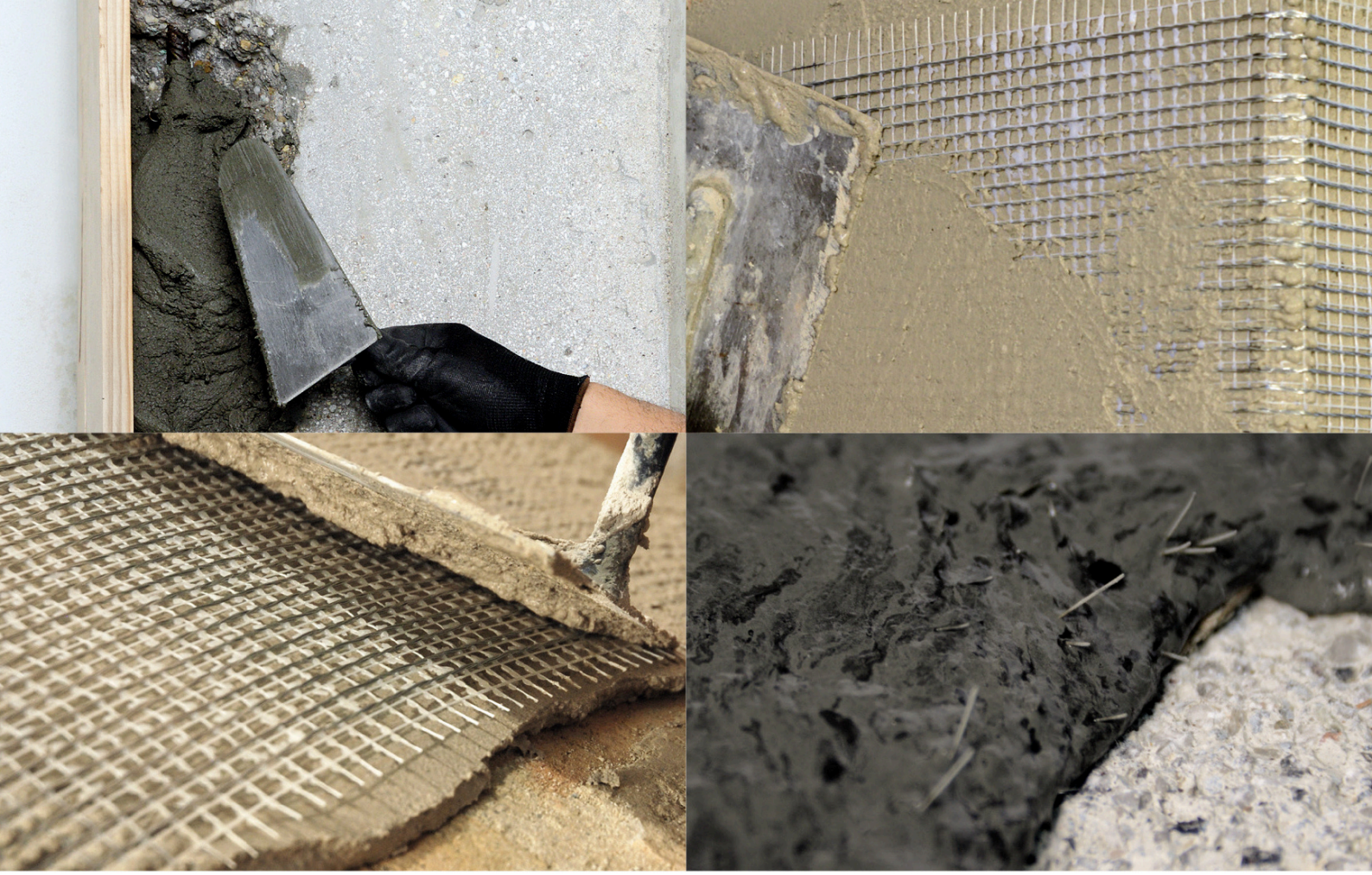

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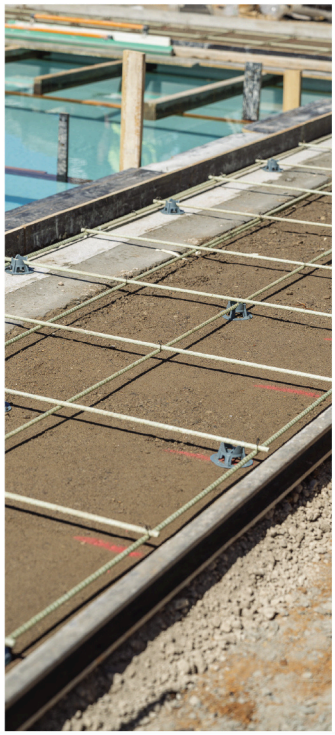

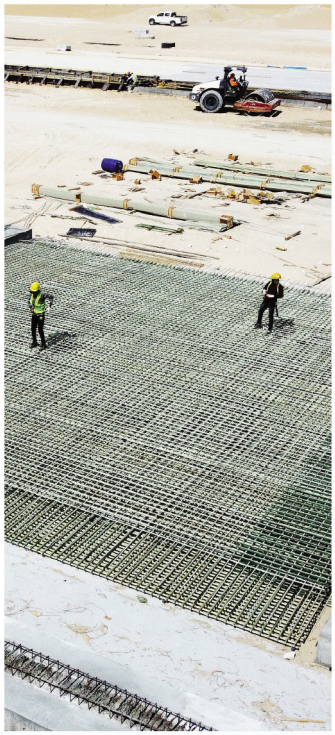

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18. Topics and special sessions

This FRPRCS17 intends to be an influential event, bringing together experts, policymakers, industry leaders, researchers and practitioners to explore innovative solutions that can promote sustainable development for the built environment using FRP composites. In this context, the following topics are covered in FRPRCS17:

- FRP reinforcement for concrete structures
- Strengthening of concrete and masonry structures with FRP
- Innovative composite systems & solutions
- FRP prestressed concrete structures
- Design codes and guidelines, regulatory assessment
- FRP materials and products
- Inspection, monitoring and quality assurance
- Durability of FRP systems
- Case studies & successful applications
- Effect of extreme events on FRP reinforced/strengthened concrete and masonry structures

Special Sessions are organized to supplement the regular conference program, offering a platform to explore specific emerging topics within the scope of FRPRCS17, namely the following topics:

- **SS01 –** FRCM composites for strengthening and repair of reinforced concrete and masonry structures
- **SS02 –** Circular construction with FRPs: durability, sustainability, and material reuse
- **SS03 –** Advancing FRP in structural engineering: a tribute to the legacy of Dr. Sami Rizkalla
- **SS04 –** Applied artificial intelligence and reliability assessment methods in structural concrete members reinforced with FRP
- **SS05 –** IIFC TG3. FRP in extreme settings
- **SS06 –** IIFC TG1. Decarbonizing structures: FRP and FRCM strategies for concrete and masonry
- **SS07 –** Experimental tests on FRP bars: mechanical, physical and bond properties
- **SS08 –** Recent trends and advances on seismic retrofit of RC structures with externally bonded FRP
- **SS09 –** Smart FRP and TRM composites for self-monitoring applications
- **SS12 –** FRC composites for strengthening RC buildings and infrastructure
- **SS13 –** Strengthening floor diaphragms with FRP: experimental advances and design integration
- **SS14 –** Thermoplastic composite rebar for concrete reinforcement
- **SS15 –** IIFC TG2. Challenges and opportunities for end-of-life fibre reinforced polymers in civil engineering
- **SS16 –** fib-ACI joint session on specification and design of concrete structures with internal FRP reinforcement
- **SS17 –** Shear behavior of concrete members reinforced with organic- and inorganic-matrix composites
- **SS18 –** Advances in the investigation of bond-dominated problems of organic and inorganic composites: new approaches, unexplored issues, and future challenges
- **SS19 –** Hybrid reinforcement systems (FRP+steel rebars) for durable and seismic-resilient concrete structures
- **SS20 –** Designing learning: teaching methods for composite FRP structures

19. Programme - Overview

Time	July 5	July 6	July 7	July 8
8:00 - 8:30	–	Registration	Registration	–
8:30 - 9:00	–		Parallel Sessions	Registration
9:00 - 9:30	–	Opening Ceremony		Parallel Sessions
9:30 - 10:00	–	Keynote Lecture 1		
10:00 - 10:30	–			
10:30 - 11:00	–	Coffee Break	Coffee Break	
11:00 - 11:30	–	Parallel Sessions	Keynote Lecture 2	Coffee Break
11:30 - 11:45	–			Keynote Lecture 3
11:45 - 12:15	–		Parallel Sessions	
12:15 - 13:00	–			Parallel Sessions
13:00 - 13:30	–	Lunch Break	Lunch Break	
13:30 - 14:00	–			Closing Ceremony
14:00 - 14:15	–		Young Researchers' Event	Lunch Break
14:15- 14:45	–	Meet the Editors		
14:45 - 15:30	–		Women in FRP	
15:30 - 15:45	–	Parallel Sessions		Bus to Barcelona O2
15:45 - 16:00	–		Parallel Sessions	
16:00 - 16:30	–			Bus to Barcelona O1
16:30 - 17:00	Registration	Afternoon Break		–
17:00- 17:45		Parallel Sessions		–
17:45- 18:00			–	–
18:00 - 18:30		–	–	–
18:30 - 19:00	Guided Cultural Tour of Girona's Old Town			
19:00 - 19:30		Welcome Reception	Bus Transfer	
19:30 - 20:00			–	–
20:00 - 00:00	–		Gala Dinner	–

	Session	Time	Aula Magna	Sala de Graus	R1	R2	A1	C4
Monday	PS1	11:00 13:00	FRP reinforcement for concrete structures (1)	SS01 - FRCM for strengthening and repair (1)	SS09 - Smart FRP and TRM composites for self-monitoring applications	SS14 - Thermoplastic composite rebar for concrete reinforcement	SS13 - Strengthening floor diaphragms with FRP	SS04 - AI and reliability assessment in RC members with FRP
	PS2	15:30 16:30	Strengthening of concrete and masonry structures with FRP (1)	SS03 - Advancing FRP in structural engineering: tribute to Dr. Sami Rizkalla (1)	Innovative composite systems & solutions (1)	SS18 - Advances in bond-dominated problems of composites (1)	FRP prestressed concrete structures	Design codes and guidelines, regulatory assessment
	PS3	17:00 18:00	SS01 - FRCM for strengthening and repair (2)	Strengthening of concrete and masonry structures with FRP (2)	Case studies & successful applications (1)	Inspection, monitoring and quality assurance	SS07 - Experimental tests on FRP bars (1)	Innovative composite systems & solutions (2)
Tuesday	PS4	8:30 10:30	SS03 - Advancing FRP in structural engineering: tribute to Dr. Sami Rizkalla (2)	FRP reinforcement for concrete structures (2)	Durability of FRP systems	SS18 - Advances in bond-dominated problems of composites (2)	SS16 - fib-ACI joint session on concrete structures with FRP reinforcement	SS08 - Advances on seismic retrofit of RC structures with EB FRP
	PS5	11:45 13:00	SS07 - Experimental tests on FRP bars (2)	SS01 - FRCM for strengthening and repair (3)	SS06 - IIFC TG1. Decarbonizing structures (1)	SS02 - Circular construction with FRPs (1)	SS19 - Hybrid reinforcement systems (FRP+steel rebars)	SS20 - Designing learning: teaching for composite FRP structures
	PS6	15:45 17:45	Strengthening of concrete and masonry structures with FRP (3)	SS03 - Advancing FRP in structural engineering: tribute to Dr. Sami Rizkalla (3)	Innovative composite systems & solutions (3)	SS07 - Experimental tests on FRP bars (3)	SS12 - FRC composites for strengthening RC	SS02 - Circular construction with FRPs (2)
Wednesday	PS7	9:00 11:00	FRP reinforcement for concrete structures (3)	SS01 - FRCM for strengthening and repair (4)	FRP materials and products	SS17 - Shear behavior of concrete members reinforced with composites	SS15 - IIFC TG2. End-of-life fibre reinforced polymers in civil engineering	
	PS8	12:15 13:30	Case studies & successful applications (2)	Innovative composite systems & solutions (4)	SS06 - IIFC TG1. Decarbonizing structures (2)	Extreme events on FRP reinforced / strengthened structures	SS05 - IIFC TG3. FRP in extreme settings	

Monday, July 6, Parallel Session PS1	
Session: FRP reinforcement for concrete structures (1) **Room:** Aula Magna **Chairs:** Martin Noel, Antoni Cladera	
11:00 11:15	**Comparative DIC-based shear transfer analysis of GFRP and steel-reinforced concrete t-beams** (1364) **J. Zając**, D. Szczech, J. Rogowski, M. Koniorczyk, D. Novák
11:15 11:30	**Structural behavior of FRP-reinforced SHCC I-members without shear reinforcement** (1389) D. Camargos Lucarelli, J. Tavares Araruna Júnior, **D.C. Taissum Cardoso**
11:30 11:45	**Prediction of shear resistance of beam reinforced with GFRP reinforcement** (1288) **D. Bálint**, R. Sonnenschein
11:45 12:00	**Modelling of premature failure of deep beams longitudinally reinforced with internal FRP bars** (1391) **A. Trandafir**
12:00 12:15	**Experimental verification and theoretical analysis of cracking in GFRP-reinforced beams with RAC** (1135) **L. Kondrlova**, K. Gajdosova
12:15 12:30	**Shear performance of BFRP-reinforced concrete beams: experimental study and FEM validation** (1381) H. Dhabaan, **S. Adekunle**, M. Rahman, M. Al-Osta, M. Fasil, M. Al-Zahrani

Monday, July 6, Parallel Session PS1	
Session: SS01 - FRCM composites for strengthening and repair of reinforced concrete and masonry structures (1) **Room:** Sala de Graus **Chairs:** Pietro Mazzuca, Filip Grzymski, Luciano Ombres	
11:00 11:15	**Experimental investigation on textile reinforcement for masonry walls** (1114) **N. Tarifa**, Z.I. Djamai, F. Duprat
11:15 11:30	**Development of a numerical model for FRCM retrofitted RC columns** (1120) M. Mansour, **A. Rteil**
11:30 11:45	**Beyond cement: exploring alkali-activated matrices in FRCM strengthening of masonry** (1167) **M. Mauro**, S. Prete, P. Mazzuca, L. Ombres
11:45 12:00	**In-plane cyclic response of seismic and energy upgraded masonry-infilled RC frames with openings: experimental study** (1181) **M. Monastiridou**, L. Koutas, C. Papakonstantinou, D. Bournas
12:00 12:15	**Shear performance of polarized CFRCM-strengthened corroded RC continuous beams** (1188) **P. Liu**, J.-P. Tang, R. Feng, Y. Fan
12:15 12:30	**The impact of PBO-FRCM strengthening on the serviceability of RC slabs** (1208) **F. Grzymski**, T. Trapko, M. Musiał
12:30 12:45	**FRCM-strenghtened flanged-RC beams under torsion** (1127) H. Jaaz, **A. Jawdhari**, A. Fam

Monday, July 6, Parallel Session PS1	
Session: SS09 - Smart FRP and TRM composites for self-monitoring applications **Room:** R1 **Chairs:** Niki Trochoutsou, Maurizio Guadagnini	
11:00 11:15	**Insights on GFRP-reinforced concrete beam behaviour using distributed fiber optic sensors** (1131) Y. Yang, **M. Noel**, L. Butler
11:15 11:30	**Smart monitoring of RC beams under environmental and fatigue loadings** (1102) **E. Ferrier**, L. Michel
11:30 11:45	**Electro-mechanical testing characterisation of smart TRM systems** (1204) **N. Trochoutsou**, S. Toscani, V. Carvelli, L. Ferrara
11:45 12:00	**An analytical study of the influence of temperature variations on the performance of self-sensing FRCM composites** (1282) **J.B.E. Silva**, C. Wang, O. Das, G. Sas, J. Gonzalez-Libreros
12:00 12:15	**Investigation into the optimum distribution of RFID tags for monitoring composite interfaces** (1356) **S. Celik**, G. Thermou, A. Vukovic, R. Correia
12:15 12:30	**Development of a rapid-curing CNT-epoxy composite with recycled concrete aggregate for structural repair** (1394) **Y.-J. Jung**, G.-H. Eom, H.-J. Heo, S.-H. Jang

Monday, July 6, Parallel Session PS1	
Session: SS14 - Thermoplastic composite rebar for concrete reinforcement **Room:** R2 **Chairs:** Roberto Lopez-Anido, Veronica Bertolli	
11:00 11:15	**Durability of thermoplastic GFRP rebars and their bond with concrete under alkaline exposure** (1137) **M. Fodda**, S. Chataigner, L. Battais, M. Quiertant, A. Rolland, K. Benzarti
11:15 11:30	**Thermoplastic GFRP bars: engineering the future of reinforcement** (1160) **Y. Glais**, B. Zhao, A. Zoller, B. Benmokrane
11:30 11:45	**Bend capacity of thermoplastic GFRP rebars: an experimental investigation** (1233) **A. Thiry**, J. Almeida, C. Blandón, G. Balconi
11:45 12:00	**Flexural behavior of concrete beams reinforced with thermoplastic GFRP bars** (1264) G. Ortiz, C. Mendoza, J. Murcia-Delso, N. Tosic, G. Balconi, D. Cairovic, P. Stepanek, **E. Oller**
12:00 12:15	**Durability of thermoplastic glass-fiber reinforced rebars under accelerated alkali immersion** (1291) **S. Bhandari**, R. Thapa, S. Rana, R. Lopez-Anido
12:15 12:30	**Alkali resistance of thermoplastic FRP rebars: experimental evaluation** (1319) Đ. Čairović, D. Vašatko, **J. Ježek**, L. Bodnárová, F. Girgle, P. Štěpánek, A. Zoller, G. Balcony, S. André, E. Oller
12:30 12:45	**Experimental investigation of bond behavior of thermoplastic GFRP bars embedded in concrete** (1376) A. Zuddas, V. Bertolli, A. Cagnoni, **T. D'Antino**

Monday, July 6, Parallel Session PS1

Session: SS13 - Strengthening floor diaphragms with FRP: experimental advances and design integration
Room: A1
Chairs: Eric Jacques, Enrique Del Rey Castillo

11:00 11:15	**Tension strengthening of reinforced concrete using large-scale EB-FRP with and without fiber anchors** (1125) **J. Zhang**, E. Del Rey Castillo, R. Kanitkar, C. Barris, A. Borwankar
11:15 11:30	**Three-dimensional numerical simulation of FRP-to-concrete interface debonding considering width effect** (1126) Z. Li, **J. Zhang**, C. Pan, E. Del Rey Castillo
11:30 11:45	**Cyclic shear testing of concrete diaphragms strengthened with CFRP and an innovative hybrid anchorage system** (1189) **S. Arnold**, V. Reyes
11:45 12:00	**Seismic performance of EB-FRP in RC diaphragms: experimental evaluation and design recommendation** (1311) **T. Yu**, E. Del Rey Castillo, L. Hogan, A. Borwankar
12:00 12:15	**Influence of anchorage configuration on FRP tie performance in hollow core diaphragms subjected to rotational incompatibility** (1323) **M.S. Salimian Rizi**, E. Del Rey Castillo, L. Hogan
12:15 12:30	**Nonlinear analysis of FRP strengthened diaphragms using the stringer-panel method** (1396) E. Ozturk, M. Eatherton, **E. Jacques**
12:30 12:45	**Current design guidelines for FRP reinforced concrete based on full-scale tests in United States** (1318) **A. Borwankar**, G. Hagen, S. Arnold

Monday, July 6, Parallel Session PS1

Session: SS04 - Applied artificial intelligence and reliability assessment methods in structural concrete members reinforced with FRP
Room: C4
Chairs: Amirhossein Mohammadi, José Sena-Cruz, Marta Baena

11:00 11:15	**Surrogate-assisted reliability-based design optimization of novel FRP-RC sandwich panels** (1150) O. Amer, **A. Mohammadi**, J. Sena-Cruz
11:15 11:30	**Physics-informed ML prediction model for the flexural capacity of FRP-RC beams** (1151) M. Mahdavi, **A. Mohammadi**, J. Sena-Cruz
11:30 11:45	**The impact of feature engineering and data on ML/AI performance for concrete structures** (1194) O. Rashti, **R. Eid**, S. Greenberg, E. Gal
11:45 12:00	**Reliability-based design of FRP strengthening for existing structures: real-life project experience and needs** (1231) **F. Oudah**
12:00 12:15	**Flexural design of hybrid GFRP-steel reinforced beams using particle swarm optimization and moment-curvature analysis** (1293) **K. B. Shahrbijari**, J. A. O. Barros, I. B. Valente
12:15 12:30	**Damage identification in FRP-strenghened RC beams based on VAE and disentangled latent representation** (1295) **R. Perera**, M. Peinado, J.A. Ramos, M. Baena, C. Barris

Monday, July 6, Parallel Session PS2

Session: Strengthening of concrete and masonry structures with FRP (1)
Room: Aula Magna
Chairs: Radhouane Masmoudi, Farid Abed

15:30 15:45	**Automated strengthening and reuse of slabs for circular construction** (1193) **F. Menzel**, J. Bielak, J. Hendricks, M. Classen
15:45 16:00	**Investigation of fatigue failure mechanism of RC decks strengthened with grid-pattern AFRP sheets under wheel load fatigue** (1198) **M. Okubo**, N. Ando, H. Shinozaki, T. Sanga, Y. Sato, E. Yoshida, E. Nakamura, M. Ozaki
16:00 16:15	**Analytical modelling and experimental validation of corrosion-damaged RC columns repaired with FRP** (1393) F. Abuobaida, T. El Maaddawy, **F. Abed**, A. Elrefai
16:15 16:30	**Experimental study on mechanically anchored EBR CFRP-concrete joints at elevated temperatures** (1322) **M. Prasad**, M. Baena, M. Aghabagloo, R. Perera, C. Barris

Monday, July 6, Parallel Session PS2

Session: SS03 - Advancing FRP in structural engineering: a tribute to the legacy of Dr. Sami Rizkalla (1)
Room: Sala de Graus
Chairs: Raafat El-Hacha, Amir Fam

15:30 15:45	**Comparative assessment of passive CFRP and active fe-SMA confinement systems for seismic retrofitting of deficient RC bridge columns** (1275) **R. El-Hacha**, A. Al Ekkawi
15:45 16:00	**Fire design of GFRP reinforced concrete members with emphasis on ACI 440.11-22 and CSA S806** (1428) H. Hajiloo, **M. Green**
16:00 16:15	**Statistical evaluation of CFRP prestressing strands for quality control in bridge applications** (1159) P. Acuna, G. Proestos, G. Lucier, **R. Seracino**
16:15 16:30	**Post-tensioning of Swiss bridges with CFRP cables** (1380) **G.P. Terrasi**, C. Affolter, G. Schwegler, A. Guerotto, A.U. Winistoerfer

Monday, July 6, Parallel Session PS2

Session: Innovative composite systems & solutions (1)
Room: R1
Chairs: Akram Jawdhari, Jian-Fei Chen

15:30 15:45	**Experimental investigation on the skew tension behavior of textile reinforced concrete** (1133) **S. Leitner**, P. Leinter, P. Preinstorfer
15:45 16:00	**Tensile behaviour of basalt and glass fibre textiles for use in textile reinforced concrete** (1177) **F. Rocha**, M. Magalhães, R. Souza, A. Pimenta
16:00 16:15	**Experimental study on basalt TRM-to-concrete bond under intermediate strain rate** (1261) **A. Milling**, G. Amato, S. Taylor
16:15 16:30	**Effects of strain rate on the bond between carbon-FRCM strip and concrete substrate** (1124) L. Gervais, **A. Jawdhari**

Monday, July 6, Parallel Session PS2	
Session: SS18 - Advances in the investigation of bond-dominated problems of organic and inorganic composites: new approaches, unexplored issues, and future challenges (1) **Room:** R2 **Chairs:** Tommaso D'Antino, Francesco Focacci, Christian Carloni	
15:30 15:45	**FRP-to-substrate bonded joints made with brittle or ductile adhesives under the pull-pull test** (1219) **H. Biscaia**, P. Reis, Y. Yang, D. Fernando
15:45 16:00	**Effectiveness of FRP anchors in the strengthening of RC structures** (1262) **C. Del Vecchio**, F. Ceroni, H.A. Ali, A. Benedetti, M. Di Ludovico
16:00 16:15	**Mechanical and piezoresistive performance of self-sensing textile-reinforced mortar composites for masonry strengthening** (1283) **A. Dalalbashi**, A. Drougkas, V. Sarhosis
16:15 16:30	**Updating of the design rules for the bond behaviour of frps in the CNR-DT 200 R2/2026** (1294) L. Ascione, **F. Ceroni**, G.P. Lignola, A. Occhiuzzi

Monday, July 6, Parallel Session PS2	
Session: FRP prestressed concrete structures **Room:** A1 **Chairs:** Hani Nassif, Gyorgy Balazs	
15:30 15:45	**Strengthening and repairing prestressed concrete beams with CFRP: a comprehensive review** (1112) **H. Jasim**, Y. Al-Kamaki, O. Aziz
15:45 16:00	**Comparison of flexural behavior of prestressed concrete bridge beams with different strand materials** (1297) **A. Okeil**, A. Belarbi
16:00 16:15	**Numerical optimization of a novel wedge-barrel anchor system for CFRP tendons** (1337) **A. Cagnoni**, V. Bertolli, T. D'Antino, M.A. Pisani
16:15 16:30	**Deformation-based analysis of concrete girders prestressed with unbonded CFRP tendons** (1429) W. Nasreddine, **H. Nassif**, A. Belarbi, M. Harajli

Monday, July 6, Parallel Session PS2	
Session: Design codes and guidelines, regulatory assessment **Room:** C4 **Chairs:** Ravi Kanitkar, Cristina Barris	
15:30 15:45	**An overview of the new ACI CODE 440.13 on FRP strengthening** (1110) K. Harries, **W. Gold**
15:45 16:00	**An updated design approach for fiber anchors for strengthening RC structures with EB-FRP** (1254) **R. Kanitkar**, E. Del Rey Castillo, J. Zhang, S. Smith
16:00 16:15	**GFRP development length tables for preliminary design** (1348) S. Banh, **D. Tomlinson**
16:15 16:30	**Evaluating externally bonded FRP shear strengthening models of RC beams using the comprehensive multi-metric comparative (CMMC) method** (1118) Ö.Y. Eski, **A. Mofidi**

Monday, July 6, Parallel Session PS3

Session: SS01 - FRCM composites for strengthening and repair of reinforced concrete and masonry structures (2)
Room: Aula Magna
Chairs: Pietro Mazzuca, Filip Grzymski, Luciano Ombres

17:00 17:15	**Performance of steel reinforced grout for externally bonded strengthening of concrete** (1247) C. Signorini, **F. Ascione**, A. Nobili
17:15 17:30	**Nonlinear performance of FRCM-strengthened masonry walls under tsunami action** (1251) S. Belliazzi, F. Fabbrocino, **G.P. Lignola**, A. Prota
17:30 17:45	**Confinement of reinforced cocnrete columns with textile-reinforced mortar jackets** (1257) **P. Luna**, J. Murcia-Delso, E. Oller
17:45 18:00	**Effects of accelerated aging on mechanical interaction between fibers and matrix in PBO-FRCM.** (1220) R. Nudo, **M. Petrolini**, M. Tanganelli

Monday, July 6, Parallel Session PS3

Session: Strengthening of concrete and masonry structures with FRP (2)
Room: Sala de Graus
Chairs: Joaquim Barros, Enzo Martinelli

17:00 17:15	**Bond–slip relationship for FRP sheet–concrete interfaces derived from concrete surface failure** (1146) **M. Ozaki**, Y. Sato
17:15 17:30	**Modelling cracking and debonding in FRP-strengthened RC ties with a phase-field–CZM approach** (1286) **M. Barahona**, L. Carreras, C. Barris
17:30 17:45	**Minimum FRP confinement requirements for fully strain-hardening concrete columns** (1267) J. Shayanfar, **J.A.O. Barros**
17:45 18:00	**Investigation of fatigue failure mechanism of RC decks strengthened with grid-pattern CFRP sheets under wheel load fatigue testing** (1201) **S. Sakurai**, H. Hasegawa, Y. Jinno, Y. Sato, E. Yoshida, E. Nakamura, M. Ozaki

Monday, July 6, Parallel Session PS3

Session: Case studies & successful applications (1)
Room: R1
Chairs: Joao Ramoa Correia, Sylvain Chataigner

17:00 17:15	**Assessment of the São Silvestre hybrid FRP–concrete footbridge after a decade in service** (1270) **J. Sena-Cruz**, J. Barros, M. Abreu Filho, A. Shoaib, J. Ramôa Correia, J. Gonilha
17:15 17:30	**Application of GFRP rebars for an offshore signal tower and associated durability program** (1332) **S. Chataigner**, L. Battais, K. Benzarti, A. Rolland, P.-E. Cabon, H. Saboureau, N. Fady
17:30 17:45	**Novel design concept of FRP reinforced and prestressed concrete bridges** (1144) **A. Apitz**, M. Senta
17:45 18:00	**Port of Galveston ushers in a new FRP solution for repair of corroded pier** (1388) **M. Ehsani**

Monday, July 6, Parallel Session PS3	
Session: Inspection, monitoring and quality assurance **Room:** R2 **Chairs:** Scott T. Smith, Susana Cabral-Fonseca, Tafsir Tafsirojjaman	
17:00 17:15	**Failure mode analysis of NSM strengthened concrete beam using computed tomography** (1108) **S. Grzesiak**, C. De Sousa, K. Grzyb, M. Pahn
17:15 17:30	**Detection of glass fiber-reinforced polymer bars in concrete through non-destructive testing** (1128) **A.-Y. Kamagate**, M. Noel, H. Layssi, F. Moradi
17:30 17:45	**Transverse stress effects on embedded fibre optic sensors** (1155) **V. Ott**, P. Lura, G.P. Terrasi
17:45 18:00	**Non-destructive evaluation of regolith-resin-composite using ultrasonic waves** (1448) M.M. Molla, C.T. Ng, **S.T. Smith**, T. Tafsirojjaman

Monday, July 6, Parallel Session PS3	
Session: SS07 - Experimental tests on FRP bars: mechanical, physical and bond properties (1) **Room:** A1 **Chairs:** Marco Di Ludovico, Francesca Ceroni, Annalisa Franco	
17:00 17:15	**Assessement of anchorage length for FRP bars in RC structures** (1115) **F. Ceroni**
17:15 17:30	**Bond tests on FRP bars in concrete elements: a critical review of experimental results** (1129) F. Ceroni, V. Bertolli, T. D'Antino, M. Di Ludovico, M.M. Della Vecchia, **A. Napoli**, R. Realfonzo
17:30 17:45	**Effect of geometrical and mechanical parameters on the bond strength of FRP bars embedded in concrete elements** (1130) F. Ceroni, A. Rajabi, **M. Di Ludovico**
17:45 18:00	**Evaluating bond strength of GFRP bars with concrete using hinged beam test** (1154) **M.S. Ifrahim**, A.J. Sangi, F. Masood

Monday, July 6, Parallel Session PS3	
Session: Innovative composite systems & solutions (2) **Room:** C4 **Chairs:** Ehab El-Salakawy, Qian-Qian Yu	
17:00 17:15	**Introducing a novel multi-purpose stay-in-place form for construction and repair industries** (1387) **M. Ehsani**
17:15 17:30	**Flexural behavior of ultra-high-strength ECC thin panels reinforced with CFRP/GFRP bars** (1343) K. Weng, S. Han, **J. Yu**
17:30 17:45	**Composite action benefits and drawbacks in insulated wall panels with FRP connectors** (1349) H. Yarahmadi, **D. Tomlinson**
17:45 18:00	**Flexural behavior of steel beams with simulated corrosion damage repaired by CFRP fabric or plates** (1243) **H. Chikhani**, M.K. Rahman, M.A. Al-Osta, A. Nawaz, C.S. Mcgrath

Tuesday, July 7, Parallel Session PS4	
Session: SS03 - Advancing FRP in structural engineering: tribute to legacy of Dr. Sami Rizkalla (2) **Room:** Aula Magna **Chairs:** Raafat El-Hacha, Amir Fam	
08:30 08:45	**Shotcrete abrasion damage of sand-coated GFRP bars** (1400) R. Sturm, **A. Fam**
08:45 09:00	**Durability-driven failure mode transition in prestressed NSM-CFRP strengthened RC beams subjected to severe freeze–thaw exposure** (1447) **O. Awassa**, R. El-Hacha, H. Yadollahi Omran
09:00 09:15	**Performane of CFRP strengthened RC beams under combined action of fatigue loading and freeze-thaw** (1184) **M. Ahmed**, S. Metiche, R. Masmoudi
09:15 09:30	**Torsional capacity prediction of FRP strengthed concrete beams using genatic programming** (1109) M. Muralimanoharan, R. Kalfat, **R. Al-Mahaidi**
09:30 09:45	**Performance-based evaluation of alternative reinforcement systems under accelerated freeze-thaw and chloride exposure** (1446) **O. Awassa**, M. Amiri, R. El-Hacha
09:45 10:00	**Damage and failure analysis of FRP strengthened RC beams with openings** (1139) **R. Karmakar**, B. Mandal
10:00 10:15	**Finite element and analytical assessment of CFRP confinement for concrete columns: toward stiffness-based design** (1445) N. Salameh, **R. El-Hacha**

Tuesday, July 7, Parallel Session PS4	
Session: FRP reinforcement for concrete structures (2) **Room:** Sala de Graus **Chairs:** Sándor Sólyom, Khaled Sennah	
08:30 08:45	**Numerical study of GFRP reinforced LWC beams** (1359) **B. Somlai**, S. Solyom
08:45 09:00	**A homogenised numerical modelling approach for hybrid basalt fibre-BFRP rebar reinforced concrete** (1444) **A.F.A. Siddique**, F. Walport, K.A. Cashell
09:00 09:15	**Numerical study on failure modes in slender FRP-RC columns using finite elements** (1440) **A. Goldack**, R. Koehler, A.U. Syed
09:15 09:30	**Capacity and demand of UHPC-filled, GFRP-reinforced shear connections between adjacent box beams under AASHTO truck loading** (1434) A. Sharma, H. Sennah, **K. Sennah**
09:30 09:45	**Shear capacity of concrete beams reinforced with FRP bars and basalt microbars** (1249) R. Kostro, **M. Kosior-Kazberuk**, J. Krassowska
09:45 10:00	**Punching shear mechanical model for FRP RC slabs w/o shear reinforcement under concentric loading** (1119) E. Oller, M. Guadagnini, A. Marí, **A. Cladera**
10:00 10:15	**Punching-shear mechanical model for FRP RC slabs with shear reinforcement under concentric loading** (1442) **A. Cladera**, M.A. Polak, T. Hrynyk, E. Oller
10:15 10:30	**Post-fire flexural performance of GFRP-reinforced concrete beams: lap splice effect** (1142) S. Khalaf, M. Al Dawood, **F. Abed**, H. Hajiloo

Tuesday, July 7, Parallel Session PS4	
Session: Durability of FRP systems **Room:** R1 **Chairs:** John Myers, Jian-Fei Chen	
08:30 08:45	**Fatigue behavior of CFRP reinforced concrete after exposure to freeze-thaw cycles** (1121) **B. Fan**, D. Junger, M. Liebscher, V. Mechtcherine
08:45 09:00	**Durability of high-strength CFRP-concrete joints under freeze-thaw cycles in saline environment** (1183) **A. Kallel**, S. Metiche, R. Masmoudi
09:00 09:15	**How the concrete alkaline environment affects to the strength retention of GFRP rebars** (1203) L. Juárez, D. Sánchez, E. Hernández, S. Medkouri, **A. Morales**
09:15 09:30	**Durability of basalt and glass FRP bars in concrete under thermal-moisture conditioning** (1228) M. Chkhachirou, **H. El-Hassan**, T. El-Maaddawy
09:30 09:45	**Durability evaluation of FRP bars extracted from the halls river bridge after seven years of service** (1253) O. Omar, J.M. Palacios, **A. Ruiz Emparanza**, A. Lewis, S. Nolan, A. Nanni, F. De Caso
09:45 10:00	**Durability of prestressed EBR-CFRP systems: ten-year performance of strengthened RC slabs** (1274) **L. Correia**, D. Fernandes, M. Rahman, J.A. Barros, J. Sena-Cruz
10:00 10:15	**FRP reinforcement for concrete structures, durability of FRP systems** (1416) C. Cui, J. Wu, **J.-F. Chen**, T. Yu
10:15 10:30	**Toward harmonization of durability evaluation of GFRP bars for concrete reinforcement** (1202) **L. Juárez**, A. Morales, Á. Ruiz, F. De Caso, A. Nanni

Tuesday, July 7, Parallel Session PS4

Session: SS18 - Advances in the investigation of bond-dominated problems of organic and inorganic composites: new approaches, unexplored issues, and future challenges (2)
Room: R2
Chairs: Tommaso D'Antino, Francesco Focacci, Christian Carloni

08:30 08:45	**Freezing and thawing durability of sustainable TRM systems: a preliminary study** (1310) **M.M. Della Vecchia**, F. Ascione, F. Bencardino, S. Candamano, P. Mazzuca, A. Micieli, A. Napoli, L. Ombres, R. Realfonzo
08:45 09:00	**Bond behavior of GFRP reinforcement in concrete: insights from pull-out and direct shear tests** (1363) **V. Romanazzi**, M.L. Puppio, M. Leone, F. Mistretta, M. Sassu, M.A. Aiello
09:00 09:15	**Glass-fiber textile knot effect on FRCM bond behavior. experimental investigation** (1395) **R. Grazzini**, C. Casini, A. Chiricozzi, G. Misseri, L. Rovero
09:15 09:30	**Experimental study of inorganic-matrix composites with single- and double-lap spliced joints** (1405) A.S. Calabrese, V. Bertolli, **T. D'Antino**, C. Carloni, F. Focacci
09:30 09:45	**Determination of the development length of GFRP bars based on pull-out tests results** (1407) **F. Focacci**, T. D'Antino, F. Ceroni, C. Carloni
09:45 10:00	**Elevated-temperature tensile tests on a flax-textile FRCM** (1424) G. Fava, **V. Bertolli**, P. Colombi, T. D'Antino
10:00 10:15	**Effect of anchors on strain distribution in FRP reinforcement of strengthened RC beams** (1427) E. Okonkwo, I. Abavisani, F. Focacci, T. D'Antino, **C. Carloni**
10:15 10:30	**From pull-out to structural tests: experimental assessment of GFRP bar bond behavior in plain and fiber-reinforced concrete** (1426) I. Abavisani, V. Bertolli, T. D'Antino, **C. Carloni**

Tuesday, July 7, Parallel Session PS4

Session: SS16 - Fib-ACI joint session on specification and design of concrete structures with internal FRP reinforcement
Room: A1
Chairs: Maurizio Guadagnini, Maria Lopez De Murphy

08:30 08:45	**The new Italian guidelines for design concrete elements with FRP bars: an overview** (1171) **F. Ceroni**, A. Occhiuzzi, M. Savoia
08:45 09:00	**Evaluation of shear design provisions for FRP-reinforced concrete beams** (1178) Y. Huang, **M. Guadagnini**
09:00 09:15	**Shear performance of GFRP-reinforced concrete beams: experiments vs design code assessment** (1327) J. Rogowski, **D. Szczech**, J. Zając, M. Koniorczyk, J. Večeře, D. Novák
09:15 09:30	**Analytical formulations for crack control for FRP-reinforced concrete elements** (1342) **F. Ferretti**, C.D. John Jayarani, C. Mazzotti
09:30 09:45	**Regulatory pathways for GFRP bars in concrete structures: comparative analysis of CE marking and ASTM specifications** (1368) **P. Casadei**
09:45 10:00	**Effect of GFRP rebars mechanical properties on the design of reinforced concrete beams** (1379) M. Di Domenico, E. Oller, **M. Di Ludovico**, F. Ceroni, C. Barris
10:00 10:15	**Concrete shear strength in FRP RC: perspective on advancing ACI 440 provisions** (1437) **F. Matta**

Tuesday, July 7, Parallel Session PS4	
Session: SS08 - Recent trends and advances on seismic retrofit of RC structures with externally bonded FRP **Room:** C4 **Chairs:** Juan Murcia-Delso, Georgia Thermou, Sergio Breña	
08:30 08:45	**A numerical study on the seismic response of retrofitted RC beam-column joints under monotonic static load** (1103) **Ö.Y. Eski**, A. Mofidi, S. Wilkinson, V. Vinogradov
08:45 09:00	**Strengthening deficient cast-in-place RC foundation–column joints using CFRP** (1141) **Ö. Yurdakul**, L. Routil, B. Culek, Ö. Avşar
09:00 09:15	**Titanium near-surface mounted (NSM) bars for retrofitting limited-ductility concrete buildings** (1187) **S. Arnold**, S. Rodriguez, F. Sidiqui, R. Young
09:15 09:30	**Experimental study of RC structural walls with FRP overlays designed with current ACI 440 provisions** (1227) **A. Albright-Goodell**, I. Koutromanos, J. Murcia-Delso, A. Borwankar
09:30 09:45	**Guidelines for seismic design and nonlinear modeling of FRP jacketed concrete columns** (1284) **S. Breña**, I. Kim, W. Ghannoum, S. Sattar, J. Dukes
09:45 10:00	**Ductility enhancement with external FRP confinement for seismic performance: comparison with TSDC-2018** (1232) G. Andirir, **A. İlki**

Tuesday, July 7, Parallel Session PS5	
Session: SS07 - Experimental tests on FRP bars: mechanical, physical and bond properties (2) **Room:** Aula Magna **Chairs:** Marco Di Ludovico, Francesca Ceroni, Annalisa Franco	
11:45 12:00	**Development of a sustainable unidirectional interlayer glass-flax hybrid laminate** (1138) **Y. Schwieger**, U. Qayyum, V. Carvelli, V. Ott, G.P. Terrasi
12:00 12:15	**Bond behavior of FRP bars in lightweight concrete** (1152) M. Hernandez, **M. El-Gendy**
12:15 12:30	**Durability of GFRP bars in marine exposure: experimental, empirical and ANN-based bond strength modeling** (1240) **M. Fasil**, M.K. Rahman, M.R. Ali, M.S. Khan, S.U. Al-Dulaijan, H. Alkhalifa
12:30 12:45	**Experimental investigation on the effect of rib groove depth on bond pull-out behavior of GFRP bars** (1242) **M. Kalimur Rahman**, M. Fasil, N. Elnaji

Tuesday, July 7, Parallel Session PS5	
Session: SS01 - FRCM composites for strengthening and repair of reinforced concrete and masonry structures (3) **Room:** Sala de Graus **Chairs:** Pietro Mazzuca, Filip Grzymski, Luciano Ombres	
11:45 12:00	**Numerical study and comparison of concrete columns strengthened with FRP and FRCM** (1266) **N. Azadvar**, M. Zargaran, N. K.A. Attri, M. Guadagnini, I. Hajirasouliha
12:00 12:15	**Experimental characterization of textile reinforced mortar composites under cyclic loading** (1290) **C.R. Mendoza**, N.E. Hackman, J. Murcia-Delso, E. Oller
12:15 12:30	**Assessment of the behavior between PBO-TRC and steel under mixed mode bending loading** (1299) **J. Costa**, F. Silva, D. Cardoso
12:30 12:45	**Experimental evaluation of a PBO-TRC repair system applied to pipelines** (1300) **J. Carvalho**, F. Silva, D. Cardoso
12:45 13:00	**Tensile behavior of sbr coated glass FRCM under elevated temperature** (1377) **V. Bertolli**, R. Grazzini, L. Rovero, T. D'Antino

Tuesday, July 7, Parallel Session PS5	
Session: SS06 - IIFC TG1. Decarbonizing structures: FRP and FRCM strategies for concrete and masonry (1) **Room:** R1 **Chairs:** Jovan Tatar, Annalisa Napoli	
11:45 12:00	**Optimal FRP-reinforced concrete shells for construction decarbonization: a parametric analysis** (1195) **A. Leonardi**, A. Alraie, F. Ascione, S. Spadea
12:00 12:15	**Mechanical and bond performance of flax-based natural composites for sustainable retrofitting** (1237) F. Ascione, M.M. Della Vecchia, **A. Napoli**, R. Realfonzo, F. Barpi, P. Cornetti, A. Monaco, R. Greco, S. Spadea
12:15 12:30	**Experimental assessment of the shear behavior in masonry walls externally strengthened by natural textile-reinforced mortars** (1248) C. Lima, R. Lombardi, B. Paolillo, M. Pepe, E. Sellitto, **E. Martinelli**
12:30 12:45	**Mechanical behavior of CFRP-confined LC3 concrete incorporating CO2-treated recycled aggregate** (1314) **B. Wu**, M. Elshorbagi, R. Krishna, P. Feng, V.W. Tam, Y. Wu, C. Jiang
12:45 13:00	**Shear strengthening of RC beams with low-carbon footpring textile-reinforced mortar jackets** (1143) E. Valiakou, **M. Monastiridou**, C. Papakonstantinou, L. Koutas

Tuesday, July 7, Parallel Session PS5	
Session: SS02 - Circular construction with FRPs: durability, sustainability, and material reuse (1) **Room:** R2 **Chairs:** Yunus Emre Harmanci, Bernhard Schranz	
11:45 12:00	**Thermo-mechanical performance of GFRP confined concrete with gold mine tailings as cement replacement** (1239) Y. Chaabane, D. Qi, B. Tikou, A. Tagnit-Hamou, **R. Masmoudi**
12:00 12:15	**Durability of FRP reinforcing bars exposed to an alkaline environment** (1255) **J. Krassowska**, M. Kosior-Kazberuk
12:15 12:30	**Durability of GFRP and BFRP in simulated alkaline pore solution of concrete** (1303) **A. Biqai**, I. Hamerton, K. Kostova, E. Toumpanaki
12:30 12:45	**Physics-informed machine learning for GFRP durability prediction** (1304) **Z.-H. Hao**, P. Feng

Tuesday, July 7, Parallel Session PS5	
Session: SS19 - Hybrid reinforcement systems (FRP+steel rebars) for durable and seismic-resilient concrete structures **Room:** A1 **Chairs:** Pietro Mazzuca, Luciano Ombres	
11:45 12:00	**Cracking of concrete tie rods reinforced with steel and FRP bars: modeling of bars-to-concrete bond** (1374) L. Ombres, **P. Mazzuca**, M.A. Aiello
12:00 12:15	**Response of hybrid (GFRP+steel) reinforced concrete column subjected to seismic loading** (1225) A.S. Srivastava, **G.N. Prajapati**, B. Benmokrane
12:15 12:30	**Crack development in GFRP-reinforced concrete ties: an experimental study.** (1302) **F. Campolongo**, J.R. Correia, I. Rosa, J.P. Firmo, P. Mazzuca, L. Ombres
12:30 12:45	**Shear capacity of hybrid FRP–steel concrete beams with double-helix W-FRP reinforcement** (1403) **S. Spadea**, A. Alraie, F. Parisi, F. Ascione, L. Ombres
12:45 13:00	**Interaction and moment-curvature diagrams of hybrid RC sections with steel and FRP bars** (1441) **M. Mairone**, G. Maragno, D. Masera, M. Corrado

Tuesday, July 7, Parallel Session PS5	
Session: SS20 - Designing learning: teaching methods for composite FRP structures **Room:** C4 **Chairs:** Luís Correia, Emmanuel Ferrier	
11:45 12:00	**Tranfer of knowledge on FRP design to students** (1398) A. Benedetti, **F. Ceroni**
12:00 12:15	**FRP materials and courses at North Carolina State University** (1158) **R. Seracino**, C. Castorena, G. Proestos
12:15 12:30	**The European master course in advanced structural analysis and design using composite materials – FRP++** (1263) **J. Sena-Cruz**, C. Barris, M. Di Ludovico, B. Castanié, A. Prota, L. Correia
12:30 12:45	**NexGenFRP – collaborative teaching innovation for fibre reinforced polymers in structural engineering** (1372) **L. Correia**, T. Fanaradelli, E. Ferrier, B. György, S. Matthys, E. Oller, T. Rousakis, S. Szinvai, S. Solyom
12:45 13:00	**Student-centered research on UHPFRC for coastal infrastructure rehabilitation** (1390) **A. Trandafir**, P. Quintana Gallo

Tuesday, July 7, Parallel Session PS6	
Session: Strengthening of concrete and masonry structures with FRP (3) **Room:** Aula Magna **Chairs:** Stijn Matthys, Tao Yu	
15:45 16:00	**Effectiveness of partial confinement covering only compression zone** (1305) Y. Efe, **I. Bedirhanoglu**
16:00 16:15	**Model assessment for fibre reinforced polymer (FRP) lightly confined concrete** (1386) X. Wang, P. Visintin, S.T. Smith, **T. Tafsirojjaman**
16:15 16:30	**Investigation on the utilization and deterioration conditions of the externally bonded FRP sheet strengthening method** (1199) **M. Nakai**, H. Nakamura, E. Yoshida, M. Okubo, T. Matsui, T. Murase, T. Aso, A. Kamiharako
16:30 16:45	**Effect of anchor location on intermediate crack debonding in CFRP-strengthened RC beams** (1408) **M. Aghabagloo**, M. Baena, C. Barris
16:45 17:00	**A comparative study on perlite strengthened RC T-beams anchored with U-wrap and fiber anchors** (1301) **M. Zaki**, H. Rasheed, T. Alkhrdaji
17:00 17:15	**Strain behaviour of externally bonded FRP shear reinforcement on prestressed concrete I-girders** (1371) **M.A. Yaqub**, C. Czaderski, S. Matthys
17:15 17:30	**Effect of high temperature and humidity on axial behavior of FRP-jacketed low-strength concrete: a preliminary evaluation** (1226) S. Bazancir, S. Kolemenoglu, **A. Ilki**
17:30 17:45	**Numerical modelling of hybrid bonded CFRP-to-concrete joints between consecutive cracks** (1123) **H. Biscaia**, M. Aghabagloo, A. Codina, C. Barris

Tuesday, July 7, Parallel Session PS6

Session: SS03 - Advancing FRP in structural engineering: tribute to legacy of Dr. Sami Rizkalla (3)
Room: Sala de Graus
Chairs: Raafat El-Hacha, Amir Fam

15:45 16:00	**A residual–exponential decay model for post-peak flexural softening in lightweight glass fiber-reinforced concrete** (1214) **J. Carrette**, E. El-Salakawy
16:00 16:15	**Optimization of CFFT axial capacity: a parametric study of geometry and materials strengths** (1235) R. Alkeblawy, **R. Masmoudi**
16:15 16:30	**Finite element modelling of GFRP-reinforced concrete bridge barrier and deck overhang under transverse vehicle impact loading** (1373) A. Diab, **K. Sennah**, A. Mostafa
16:30 16:45	**Finite element modeling of continuous concrete beams prestressed with CFRP tendons** (1406) M. Hamouda, W. Nasreddine, **H. Nassif**
16:45 17:00	**Recent developments related to FRP reinforcement for concrete structures, design codes, and applications in Canada & beyond** (1435) **B. Benmokrane**
17:00 17:15	**Flexural behaviour of hybrid utility poles: new design optimization using light-weight-concrete and hallow steel/CFFT configuration** (1185) M. Bouabidi, S. Metiche, R. Gagné, **R. Masmoudi**
17:15 17:30	**Advancing performance-based design of FRP retrofits for RC structures** (1192) **H. García Matamoros**, E. Opabola

Tuesday, July 7, Parallel Session PS6

Session: Innovative composite systems & solutions (3)
Room: R1
Chairs: Antonio Nanni, Rebecca Gravina

15:45 16:00	**Axial compressive behaviour of rectangular FRP-concrete-steel double-skin tubular columns with a t-stiffened steel tube** (1443) S. Ding, Z. Xue, K. Liu, **T. Yu**
16:00 16:15	**Long-term evaluation of the seismic resilience of CRC- and RC-reinforced buildings** (1147) **M. Maidi**
16:15 16:30	**Numerical modeling of pretensioned GFRP-reinforced SEAHIVE® units subjected to linearly varying pressure** (1153) H. Farghal, K. Heydarpou, M. Enayati Shabkolaei, **A. Nanni**
16:30 16:45	**Design concept for thermal break elements with GFRP tension bars for parapets** (1174) **A. Bühler**, A. Weber, T. Wendler
16:45 17:00	**Characterisation of wound glass fibre-reinforced polymer transverse reinforcements** (1200) A. Alraie, S.A. Kore, A. Leonardi, F. Ascione, **S. Spadea**
17:00 17:15	**In-plane shear behaviour of novel VARTM–fabricated UHPC-CFRP composite sructure panel with CFRP shear connectors : experimental** (1439) **R. Gravina**, H. Rathnarsiri
17:15 17:30	**Compressive behavior of pultruded-braided FRP bars with GFRP braided layers** (1453) B. Liu, **Y. Liu**, T. Tafsirojjaman
17:30 17:45	**Sustainable mineral-bonded composites for resilient built environment: opportunities and trade-offs** (1414) **C. Signorini**, I. De Paula Salgado, E. Günther, V. Mechtcherine

Tuesday, July 7, Parallel Session PS6	
Session: SS07 - Experimental tests on FRP bars: mechanical, physical and bond properties (3) **Room:** R2 **Chairs:** Marco Di Ludovico, Francesca Ceroni, Annalisa Franco	
15:45 16:00	**Bond strength of hooked GFRP bars** (1401) S. Fleming, **A. Fam**
16:00 16:15	**Influence of alkaline environment on the mechanical performance of FRP rebars** (1260) **A. Franco**, M. Di Ludovico, F. Ceroni, A. Occhiuzzi
16:15 16:30	**Experimental investigation on the bond behaviour of glass fibres reinforced polymers in fibre reinforced concrete** (1271) **R. Al Marahla**, N. Almarahlleh, M. Shehzad
16:30 16:45	**Data-driven tensile property prediction of straight FRP bars using machine learning models** (1272) K. Heydarpour, J.M. Palacios, M. Enayati Shabkolaei, **A. Ruiz Emparanza**, N. Khodadadi, F. De Caso, A. Nanni
16:45 17:00	**Reaction to fire of FRP bars: limitations of European standardized test methods** (1287) **G. Pisano**, A. Franco, G. De Luca, A. Bonati
17:00 17:15	**Mechanical characterization and stiffness matrix of CFRP rods** (1417) H. Lian, J. Wu, X. Ou, **J.-F. Chen**
17:15 17:30	**Experimental investigation on the bond behavior of CFRP bars embedded in concrete** (1335) A. Cagnoni, V. Bertolli, E. Caboni, A. Zuddas, **T. D'Antino**
17:30 17:45	**Redistribution capacity of embedded ribbed and sanded GFRP rebar reinforced concrete beams** (1136) **T. Molkens**, R. Vrijdaghs

Tuesday, July 7, Parallel Session PS6	
Session: SS12 - FRC composites for strengthening RC buildings and infrastructure **Room:** A1 **Chairs:** Georgia Thermou, Marco Di Ludovico, Marta Del Zoppo	
15:45 16:00	**Flexural strengthening of severely corroded RC beam with NSM-CFRP strips and high-strength SHCC** (1113) H. Younas, **J. Yu**, C.K. Leung
16:00 16:15	**Comparative study of concrete with polypropylene macrofibers and recycled tire steel fibers** (1186) **B. Londa**, P. Fernández, I. Segura
16:15 16:30	**Structural enhancement of non-circular RC columns using HPFRC jacketing** (1218) **M.D. Criado**, S. Martínez De Mingo, A. Almerich-Chulia
16:30 16:45	**Tensile performance of low-carbon textile-reinforced 'just-add-water' geopolymer mortar** (1292) **Y.D. Hartono**, M. Guadagnini, B. Nematollahi
16:45 17:00	**Fatigue behaviour of srg strengthened shear critical RC beams with varying textile density** (1321) X. Liu, **G. Thermou**
17:00 17:15	**Compressive behaviour of concrete columns confined with steel wire-reinforced high tensile strength SHCC jackets** (1324) **O. Karaghool**, G. Thermou, J. Yu
17:15 17:30	**Flexural strengthening of RC beams with green FRCC light jacketing** (1320) E. Noferesti, **M. Del Zoppo**, G. Thermou, M. Di Ludovico
17:30 17:45	**Uniaxial tensile behaviour and crack development of CFRP grid reinforced UHPFRC** (1454) A.R. Abidy, **E. Esmaeeli**, G. Alfano

Tuesday, July 7, Parallel Session PS6	
Session: SS02 - Circular construction with FRPs: durability, sustainability, and material reuse (2) **Room:** C4 **Chairs:** Yunus Emre Harmanci, Bernhard Schranz	
15:45 16:00	**Novel coupled degradation-diffusion model for GFRP bars' durability prediction** (1312) **Z.-H. Hao**, J.-G. Dai, J.-F. Chen, P. Feng
16:00 16:15	**Tensile properties of aged CFRP strengthening plates and their potential for reuse after decommissioning** (1392) **Z. Triantafyllidis**, A. Montalbano, B. Schranz, G.P. Terrasi
16:15 16:30	**Circular reuse of marine wooden piles via CFRP-strengthened joints** (1421) J. Heithorn, N. Fouad, **B. Schranz**
16:30 16:45	**Durability assessment of prestressed CFRP strengthening at bond and structural scales** (1431) **A. Dushimimana**, C. Czaderski, L. Correia, J.M. Sena-Cruz, Y.E. Harmanci
16:45 17:00	**Towards low-environmental-impact GFRP reinforcement: characterisation of a recycled PET-modified polyester matrix** (1369) **L. Malazzini**, V. Romanazzi, M. Leone, A. Maffezzoli, M.A. Aiello

Wednesday, July 8, Parallel Session PS7

Session: FRP reinforcement for concrete structures (3)
Room: Aula Magna
Chairs: Marta Baena, Hugo Biscaia

09:00 09:15	**Experimental study of GFRP-reinforced lightweight concrete slabs under static and fatigue loads** (1206) **A. Wiater**, T. Siwowski
09:15 09:30	**Behavior of GFRP reinforcement as interface shear reinforcement in high-strength concrete cold joints** (1116) M.M. Ahmed, **E.F. El-Salakawy**
09:30 09:45	**Bond behaviour of mineral-impregnated carbon fiber reinforcement in concrete after thermal activation** (1105) **Y. Shang**, B. Fan, M. Liebscher, V. Mechtcherine
09:45 10:00	**Local bond behaviour of GFRP lap splices: a finite difference approach** (1277) **N. Sandoval**, M. Baena, C. Barris
10:00 10:15	**Investigation of bend strength of GFRP bars** (1273) **J. Singh**, J. Jahanzaib, S. Sheikh
10:15 10:30	**Bent strength testing of glass fiber reinforced polymer bars of various tail and embedment lengths** (1111) **S. Szinvai**, T. Kovács
10:30 10:45	**Database classification of bond behaviour of FRP bars with different surface treatments** (1223) T. Wendler, C. De Sousa, **S. Grzesiak**, M. Pahn

Wednesday, July 8, Parallel Session PS7

Session: SS01 - FRCM composites for strengthening and repair of reinforced concrete and masonry structures (4)
Room: Sala de Graus
Chairs: Pietro Mazzuca, Filip Grzymski, Luciano Ombres

09:00 09:15	**Pre-damaged eccentrically compressed concrete cylinders confined with PBO-FRCM** (1309) **M. Pazdan**, T. Trapko, M. Musiał
09:15 09:30	**Experimental assessment of the durability of IMC for structural strengthening** (1325) **A. Franco**, G. Pisano, A. Bonati
09:30 09:45	**Bond behaviour of basalt FRCM systems under alkaline exposure** (1336) **M. Canestri**, F. Ferretti, C. Mazzotti
09:45 10:00	**Bond of FRCM applied on concrete substrates with deterioration** (1340) **K. Toska**, F. Faleschini
10:00 10:15	**Retrofitting RC beam-column joints using FRCM composites** (1341) L. Hofer, **K. Toska**, F. Faleschini, D. De Domenico, G. Ricciardi, T.H. Fitwi, C. Pellegrino
10:15 10:30	**Durability performance of ultra-high-performance fabric-reinforced cementitious matrix (UHP-FRCM) systems** (1384) A. Alsallamin, **A. El Refai**, L. Sorelli
10:30 10:45	**Experimental study on the temperature-dependent bond–slip behavior of PBO and carbon fiber reinforced cementitious matrix system** (1419) Z. Al-Jaberi, **J. Myers**
10:45 11:00	**Textile reinforced mortar strengthening of concrete slab with corroded reinforcement** (1289) **K.I. Escobar**, N. Duarte, J. Murcia-Delso, E. Oller, J. Bairán, W. Gomez

Wednesday, July 8, Parallel Session PS7	
Session: FRP materials and products **Room:** R1 **Chairs:** Abdeldjelil Belarbi, Peng Feng	
09:00 09:15	**Non-contact measurement technique for the tensile property evaluation of large diameter GFRP bars** (1172) K. Heydarpour, **M. Mairone**, A. Ruiz Emparanza, R. Cabrera Ovalle, J.M. Palacios, F. De Caso, D. Masera, M. Corrado, S. Nolan, A. Nanni
09:15 09:30	**Influence of adhesive elastic properties in CFRP-to-concrete debonding strength** (1179) **R. Parrilla**, P. Villanueva, J. Fernandez
09:30 09:45	**Influence of long-term sustained loading on the creep performance of CFRP bridge tendons** (1224) **A. Boloux**, L.A. Bisby, V. Ott, G.P. Terrasi
09:45 10:00	**Experimental study on the bond behaviour between concrete and basalt FRP applied by EBROG technique** (1334) S. Martínez De Mingo, V.J. Castro Quispe, **L. Echevarria Giménez**, A. Almerich-Chulia, M.D. Criado Fernández, A. De Diego Villalón
10:00 10:15	**Machine learning prediction of regolith-resin-fibre-composite (RRFC) mechanical behaviour** (1449) M.A. Hossain, **S.T. Smith**, T. Tafsirojjaman
10:15 10:30	**CFRP grid prestressed floor slabs** (1196) **M.M. Malakizandi**, J. Bielak, M. Classen

Wednesday, July 8, Parallel Session PS7	
Session: SS17 - Shear behavior of concrete members reinforced with organic- and inorganic-matrix composites **Room:** R2 **Chairs:** Veronica Bertolli, Lesley Sneed	
09:00 09:15	**Shear performance of prestressed concrete girders reinforced with FRP auxiliary reinforcements** (1352) M. Moustafa, **A. Belarbi**, A.O. Okeil
09:15 09:30	**Experimental tests on the shear behaviour of R.C. beams strengthened with steel reinforced polymers** (1164) **S. De Santis**, P. Meriggi, M. Ricci, G. Defelice
09:30 09:45	**Study of shear behavior in an RC beam with EB-FRP strengthening considering size and reinforcement interaction effect** (1209) **A. Franco-Figueira**, M.F. Herrador, E. Rey-Bouzón, F. Varela-Puga, F. Martínez-Abella
09:45 10:00	**Database of tested NSM FRP shear tests and analysis of relevant parameters** (1362) **D. Velagić**, A. Mofidi, L. Cheng
10:00 10:15	**Use of anchors in FRCM shear strengthening of RC beams** (1367) E. Caboni, **V. Bertolli**, T. D'Antino
10:15 10:30	**Prestressed CFRP straps for shear strengthening of existing concrete structures: from research to practice** (1382) **A. Guelzow**, A.U. Winistoerfer
10:30 10:45	**Numerical modeling of reinforced concrete beams strengthened with CFRP flexural reinforcement and U-wraps** (1433) M. Ishfaq, K.A. Harries, R. Kanitkar, E. Oller, **J. Tatar**
10:45 11:00	**Study of the shear strength contributions in PBO FRCM shear-strengthened beams** (1383) **V. Bertolli**, T. D'Antino, C. Ribas, L. Sneed

Wednesday, July 8, Parallel Session PS7	
Session: SS15 - IIFC TG2. Challenges and opportunities for end-of-life fibre reinforced polymers in civil engineering **Room:** A1 **Chairs:** Chao Wu, Ali Hadigheh	
09:00 09:15	**Development of the connections of the deck slab and decommissioned wind turbine blade girder** (1210) **B. Piatek**, M. Rajchel, T. Siwowski
09:15 09:30	**Static and dynamic testing of a 15m bridge constructed from a decommissioned wind blade** (1326) **R. Gentry**, C. Nicholson, J. Taylor, B. Junge, G. Ackall, L. Bank
09:30 09:45	**Closing the loop: recycling end-of-life thermoplastic GFRP rebars from concrete** (1344) S. André, N. Tosic, A. Zoller, **G. Balconi**, Đ. Čairović, E. Oller
09:45 10:00	**Dissolution kinetics of wind turbine blade powder under alkaline conditions** (1423) **Y. Mao**, C. Wu
10:00 10:15	**Repurposing carbon fibre reinforced polymer (CFRP) composite waste in sustainable cementitious composites** (1430) Y. Tao, **A. Hadigheh**
10:15 10:30	**Fracture energy of concrete reinforced with recycled FRP macrofibres** (1350) M. Abdo, T. Gokce, R. De Risi, **E. Toumpanaki**

Wednesday, July 8, Parallel Session PS8	
Session: Case studies & successful applications (2) **Room:** Aula Magna **Chairs:** Fabio Matta, Rudolf Seracino	
12:15 12:30	**Innovative use of GFRP rebars in the Barcelona metro Line 8 extension** (1163) R. Qiu, Y. Glais, **H. Roloff**
12:30 12:45	**Applications of GFRP reinforcement in tunnelling** (1165) **S. Bech Padrosa**, A.A. Giamundo, N. Della Valle
12:45 13:00	**Performance of link slabs reinforced with basalt fiber-reinforced polymer bars in pedestrian bridges** (1422) **A. Elsafty**, J. Fletcher, A. Okeil, D. Jones, C. Friend, S. Nolan
13:00 13:15	**Permanent application of large GFRP bars for Florida bridge substructures** (1106) **J. Goni Baamonde**, S. Nolan
13:15 13:30	**Recycled aggregate concrete reinforced with FRP in marine environments** (1268) P. Tamayo, A. Cimentada, G. Gomez, J.M. Baraibar, **C. Thomas**

Wednesday, July 8, Parallel Session PS8	
Session: Innovative composite systems & solutions (4) **Room:** Sala de Graus **Chairs:** Mark Green, Eva Oller	
12:15 12:30	**Development and testing of GFRP ground anchors** (1258) **D. Vašátko**, J. Ježek, F. Girgle, P. Štěpánek, L. Míča, J. Boštík
12:30 12:45	**Deploying textile reinforcement for concrete through thermal stimulation of shape-memory materials** (1238) **P. Leitner**, P. Preinstorfer
12:45 13:00	**Fatigue performance of non-woven flax/bio-epoxy composites for sustainable pedestrian bridge decks** (1298) **R. Mwesigwa**, N. Chandarana, S. Eichhorn, E. Toumpanaki
13:00 13:15	**Mechanical properties of lcp fiber-reinforced cementitious composites (lcp-frcc)** (1452) Y. Wang, C. Rith, M. Xi, B. Liu, **Y. Liu**, T. Tafsirojjaman

Wednesday, July 8, Parallel Session PS8	
Session: SS06 - IIFC TG1. Decarbonizing structures: FRP and FRCM strategies for concrete and masonry (2) **Room:** R1 **Chairs:** Jovan Tatar, Barbara Ferracuti	
12:15 12:30	**Tensile behaviour of flax FRCM systems with single and double layer configuration** (1346) T. Baroni, **F. Ferretti**, C. Mazzotti
12:30 12:45	**Cyclic behavior of a flax-textile FRCM subjected to tensile tests** (1425) G. Fava, **V. Bertolli**, S.A.M. Al-Gamal, A. Nobili, P. Colombi, T. D'Antino
12:45 13:00	**Towards eco-friendly FRCM systems: long-term mechanical behaviour of vegetal fiber reinforced composites** (1451) F. Roscini, S. Imperatore, N. Rezaei, F. Nerilli, **B. Ferracuti**
13:00 13:15	**Mussel-insired epoxy-resin adhesives with improved adhesion in wet conditions** (1157) J. Lennon, C. Kloxin, **J. Tatar**

Wednesday, July 8, Parallel Session PS8	
Session: Effect of extreme events on FRP reinforced/strengthened concrete and masonry structures **Room:** R2 **Chairs:** Riadh Al-Mahaidi, Alper Ilki	
12:15 12:30	**Repaired of damaged RC columns using external bonded FRP under seismic loadings** (1101) M. Nasser, E. Bazarchi, **E. Ferrier**, L. Michel, N. Roy
12:30 12:45	**FRP strengthening of RC frames under cyclic loading** (1173) **D. Karpouzis**, D. Petkova, M. Limbachiya, T. Donchev
12:45 13:00	**Experimental cyclic behavior of an I-shaped GFRP-reinforced concrete wall** (1244) **C. Blandón**, J. Almeida, M. Oghor Battal, R. Hoult, A. Bertholet, C. Doneux
13:00 13:15	**Post-earthquake residual displacement analysis of FRP-confined hybrid reinforced bridge columns** (1385) Z.-K. Cai, S.T. Smith, **T. Tafsirojjaman**

Wednesday, July 8, Parallel Session PS8	
Session: SS05 - IIFC TG3. FRP in extreme settings **Room:** A1 **Chairs:** Daniel Cardoso, Lili Hu	
12:15 12:30	**Fire performance of GFRP composite sandwich panels: influence of core foams and web architecture** (1122) **P. Mazzuca**, J. Firmo, J. Correia
12:30 12:45	**Durability of polyester-based GFRP-RC beams under hydrothermal aging** (1166) L.F. Oliveira Santos, N. Cazarim Da Silva Forti, **D.C. Taissum Cardoso**
12:45 13:00	**Design bond strength reduction curve for GFRP-reinforced concrete at elevated temperatures** (1259) **J. Jezek**, F. Girgle, D. Vašátko, Đ. Čairović, M. Zlámal, P. Štěpánek
13:00 13:15	**Creep behavior of concrete beams reinforced with modified GFRP bars** (1276) **L. Hu**, T. Lim

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