## 2nd International RILEM Conference on Strain Hardening Cementitious Composites

**Venue:** COPPETEC conference room

### DAY 1: 12/12/2011
- 07:30 – 08:00: Busses to Venue
- 08:00 – 08:30: Registration
- 09:00: Welcome (UFRJ-Rector, COPPE-Director)
- 09:10: Welcome (RILEM TCs Chairman)
- 09:20: Opening (Conference Chairman)
- 09:30 – 10:00: RILEM TC Reporting - G. Fisher

### Session 1: Mechanical characterization and test methods 1 (SC1)
- 10:00 – 11:00: Session 1: Mechanical characterization and test methods 1
- 11:00 – 11:30: Coffee Break
- 11:30 – 12:00: Session 2: Mechanical characterization and test methods 2

### Session 3: Mechanical characterization and test methods 3
- 13:00 – 14:00: Lunch
- 14:00 – 15:45: Session 3: Mechanical characterization and test methods 3
- 15:45 – 16:15: Coffee Break
- 16:15 – 18:30: Session 4: Novel materials and characterization

### Session 5: Durability performance 1
- 17:30 – 18:00: Busses to hotel
- 18:30 – 21:00: Cocktail

### Session 6: Durability performance 2
- 21:15 – 22:00: Busses to hotel

### Session 7: Durability performance and modelling
- 20:00 – 23:00: Conference Dinner

**Note:** Registration desk is located near the COPPETEC Conference room

### DAY 2: 13/12/2011
- 08:00 – 08:30: Registration Open
- 09:00 – 10:00: RILEM TC Reporting - F. Wittmann (Durability (SC2) and G. van Zijl)
- 09:30 – 10:00: Session 5: Durability performance 1

### Session 6: Durability performance 2
- 10:00 – 11:00: Session 6: Durability performance 2

### Session 7: Durability performance and modelling
- 11:00 – 11:30: Coffee Break
- 11:30 – 12:00: Session 7: Durability performance and modelling

### Session 8: Mechanical characterization and application
- 13:00 – 14:00: Lunch
- 14:00 – 15:45: Session 8: Mechanical characterization and application
- 15:45 – 16:15: Coffee Break
- 16:15 – 17:30: Session 9: Structural design and performance (SC3)

### Session 10: Structural design and performance 2
- 17:30 – 18:00: Busses to hotel

### Session 11: Structural design and practical applications
- 18:15 – 18:30: Closure

### Session 12: Structural design and practical applications
- 18:30 – 20:00: Busses to hotel

**Note:** Registration desk is located near the COPPETEC Conference room

### DAY 3: 14/12/2011
- 08:00 – 08:30: Registration Open
- 09:00 – 10:00: RILEM TC Reporting - K. Rokugo (Structural design and performance (SC3))
- 09:30 – 11:00: Session 9: Structural design and performance 1

### Session 10: Structural design and performance 2
- 11:00 – 11:30: Coffee Break
- 11:30 – 12:00: Session 10: Structural design and performance 2

### Session 11: Structural design and practical applications
- 13:00 – 14:00: Lunch
- 14:00 – 15:45: Session 11: Structural design and practical applications
- 15:45 – 16:15: Coffee Break
- 16:15 – 18:45: Session 12: Structural design and practical applications

### Session 13: Structural design and practical applications
- 17:45 – 18:15: Final discussion

### Session 14: Structural design and practical applications
- 18:30 – 20:00: Busses to hotel

**Note:** Registration desk is located near the COPPETEC Conference room

### DAY 4: 15/12/2011
- 08:00 – 08:30: Registration Open
- 09:00 – 10:00: RILEM TC FDS Meeting

### Session 15: Structural design and practical applications
- 11:00 – 11:30: Coffee Break
- 11:30 – 12:00: Session 15: Structural design and practical applications

### Session 16: Structural design and practical applications
- 13:00 – 14:00: Lunch
- 14:00 – 15:45: Session 16: Structural design and practical applications
- 15:45 – 16:15: Coffee Break
- 16:15 – 18:45: Session 17: Structural design and practical applications

### Session 18: Structural design and practical applications
- 17:45 – 18:15: Final discussion

### Session 19: Structural design and practical applications
- 18:30 – 20:00: Busses to hotel

**Note:** Registration desk is located near the COPPETEC Conference room
# Strain Hardening Cementitious Composites 2011

## DAY 1: December 12, 2011

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<tr>
<td>07:30</td>
<td>Busses from hotel to conference venue</td>
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<tr>
<td>08:30</td>
<td>REGISTRATION</td>
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<tr>
<td>09:00</td>
<td>WELCOME (Rector of Universidade Federal do Rio de Janeiro and Director of COPPE)</td>
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<td>09:10</td>
<td>WELCOME (RILEM TC HFC secretary and TC FDS Chairman - G. Fisher and G. van Zijl)</td>
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<td>09:20</td>
<td>OPENING (Conference Chairman - R. Toledo Filho)</td>
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<tr>
<td>09:30 - 10:00</td>
<td>Session 1: Mechanical characterization and test methods 1</td>
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<td>10:00</td>
<td>R. Ranade, M.D. Stults, V.C. Li, T.S. Rushing, J. Roth, and W.F. Heard</td>
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<td>10:30</td>
<td>P. Rossi</td>
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<td>10:00 - 11:00</td>
<td>Session 2: Mechanical characterization and test methods 2</td>
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<tr>
<td>11:00 - 11:30</td>
<td>COFFEE BREAK</td>
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<td>11:30 - 13:00</td>
<td>Session 3: Mechanical characterization and test methods 3</td>
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<td>13:00 - 14:00</td>
<td>LUNCH (COPPETEC Garden)</td>
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<td>14:00 - 15:45</td>
<td>Session 4: Novel materials and characterization</td>
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<td>16:15 - 18:15</td>
<td>Session 4: Novel materials and characterization</td>
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<td>18:30 - 21:00</td>
<td>Cocktail</td>
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<td>21:15</td>
<td>Busses to hotel</td>
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### Session 1: Mechanical characterization and test methods 1

*Chair: G. van Zijl / B. Mobasher*

- **Development of High Strength High Ductility Concrete.**
- **Damage Mechanisms Analysis of A Multi-Scale Fibre Reinforced Cement-Based Composite Subjected to Impact Loading Conditions.**

### Session 2: Mechanical characterization and test methods 2

*Chair: N. Banthia / G. Plizzari*

- **Half a Century of Progress Leading to Ultra-High Performance Fiber Reinforced Concrete.**
- **Evaluation of Standardized Test Methods to Characterize Fiber Reinforced Cement Composites.**
- **Strain Hardening Behavior of Textile Reinforced Concrete (TRC).**

### Session 3: Mechanical characterization and test methods 3

*Chair: E. Schlangen / G. Fisher*

- **Flexural Design of Strain Hardening Cement Composites.**
- **Simulation of Mechanical Tests on SHCC by FEM with Stochastic Fields.**
- **Crack Growth Resistance of Concrete-HPFRC Interface.**
- **The Role of Fiber Orientation on Strain Hardening/Softening FRCCs: Continuum Damage Modeling.**
- **Evaluation of the TRC (Textile Reinforced Concrete) Solutions in the Case of RC Beams Shear Strengthening.**

### Session 4: Novel materials and characterization

*Chair: P. Hamelin / A. Peled*

- **Chemo/Piezoresistive HPFRC Carrying Carbon Fiber and Carbon Nano-Tubes For Sensing**
- **Pigmentable Engineered Cementitious Composites.**
- **Design of Ductile Wood Fibre Cement Based Material.**
- **Mechanical Behavior of Strain Hardening Sisal Fiber Cementitious Composites Under Quasi Static and Dynamic Loading.**
- **Mechanical Performance of Ductile Cement Mortar Composites Reinforced with Nanofibrilated Cellulose.**
- **Near-Tip Analysis of Crack Propagation in Cementitious Composites.**
Strain Hardening Cementitious Composites 2011

DAY 2: December 13, 2011

LOCATION: COPPETEC Conference room

08:00 Busses from hotel to conference venue

08:30 REGISTRATION OPEN

09:00 - 09:30 F. Wittmann - SC2 - Durability Reporting RILEM TC HFC activities

09:30 - 10:00 G.P.A.G. Van Zijl RILEM TC FDS - A Framework for Durability Design of SHCC

10:00 - 11:00 Session 5: Durability performance 1

Time Nr Chair: K. Kobayashi / V. Slowik

10:00 I 0:30 62 M.D. Lepech, H. Stang and M. Geiker Integrated probabilistic life cycle assessment and durability design for sustainable SHCC infrastructure.

10:30 I 0:30 46 P.H. Wittmann, P. Wang, P. Zhang, T-j Zhao and F. Beltzung Capillary Absorption and Chloride Penetration into Neat and Water Repellent SHCC under Imposed Strain.

11:00 - 11:30 COFFEE BREAK

11:30 - 13:00 Session 6: Durability performance 2

Time Nr Chair: K. Maekawa / W. Boshoff

11:30 I 0:30 14 K. Kobayashi, Y. Asano and K. Rokugo Application of HPFRCC as a Patching Repair Material for RC Members Exposed to Chloride Attack.

12:00 I 0:30 22 C. Wagner and V. Slobek On the Water Permeability of Cracked Strain Hardening Cement-Based Composites.

12:30 I 0:30 50 M.S. Magalhães, R. D. Toledo Filho and E. M. R. Fairbairn Thermal properties and resistance to thermal shock loading of strain hardening cement-based composites

13:00 - 14:00 LUNCH (COPPETEC Garden)

14:00 - 15:45 Session 7: Durability performance and modelling

Time Nr Chair: F. Wittmann / P. Kabele

14:00 I 0:30 13 W.P. Boshoff, P.D. Nieuwoudt Tensile Crack Widths of Strain Hardening Cement-Based Composites.

14:30 I 0:30 31 F. Altmann and V. Mechtcherine Durability Design for Steel Reinforced SHCC Members Exposed to Chlorides – A Fuzzy-Probabilistic Concept.

15:00 N 0:15 45 P. Wang, F.H. Wittmann, T-j Zhao and W-l Huang Evolution of Crack Patterns on SHCC as Function of Imposed Strain.

15:30 I 0:30 58 J. Wastiels and P. Van litterbeek Verification of Strength Durability Models for Glass Fibre Textile Reinforced Cement.

15:45 - 16:15 COFFEE BREAK

16:15 - 17:45 Session 8: Mechanical characterization and application

Time Nr Chair: J. Wastiels / M. Lepech


16:30 N 0:15 26 E.A. Schaufelert and G. Cusatis Simulation of the Multiaxial Loading Behavior of Fiber Reinforced Concrete.

16:45 N 0:15 9 K. Nagai, B. Suryanto, K. Maekawa and T. Kanda Control of Cracking Direction of SHCC under Principal Stress Rotation with Coarse Aggregate.

17:00 N 0:15 6 V. Vesely, T. Pail, P. Frantík, S. Sedi Fracture Process Extent and Energy Dissipation in Silicate Composites with Different Cohesive Behavior.

17:15 N 0:15 23 R. Rypl, R. Chudoba, M. Vorechovský, J. Hegger Stochastic Cracking of Composites with Micromechanical Formulation of Crack Bridges.

17:30 Busses to hotel

20:00 - 23:00 Conference Dinner
### Day 3: December 14, 2011

**Location**: COPPETEC Conference room

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<tr>
<td>08:00</td>
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<td>08:30</td>
<td><strong>Registration Open</strong></td>
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<tr>
<td>09:00</td>
<td>Reporting RILEM TC-HFC on Structural Design and Performance / Practical Applications</td>
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<td>09:30</td>
<td><strong>Session 9: Structural design and performance 1</strong></td>
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<td>10:00</td>
<td>M. di Prisco, D. Dozio, M. Colombo</td>
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<td>10:30</td>
<td>T. Kanda, S. Nagai, M. Maruta, and Y. Yamamoto</td>
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<td>11:00</td>
<td>H. Takada, Y. Asano, K. Kobayashi, and K. Rokugo</td>
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<td><strong>COFFEE BREAK</strong></td>
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<td><strong>Session 10: Structural design and performance 2</strong></td>
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<td>11:30</td>
<td>C.P. Ostertag</td>
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<td>12:30</td>
<td>Z. Zhang, S. Qian</td>
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<td>13:00</td>
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<td><strong>Session 11: Structural design and modelling</strong></td>
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<td>K. Maekawa, K. Nagai, and B. Suryanto</td>
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<td>J.E. Bolander and A.S. Joshi</td>
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<td><strong>Session 12: Structural design and practical applications</strong></td>
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<td>J. Barros, E. Esmaeeli, E. Manning, D. Häller</td>
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<td>J.V. Ackeren, J. Blom, D. Kakogiannis, J. Wastiels, et. al.</td>
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<td>C. An, X. Castello, R.D. Toledo Filho and S.F. Estefer</td>
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<td>17:30</td>
<td>A. Shah, C. Kulacs, J. Hegger, and M. Horstmann</td>
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<td>17:45</td>
<td><strong>Final discussion</strong></td>
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<td>18:15</td>
<td><strong>Closure</strong></td>
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